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AN INVESTIGATION OF HIGH SCHOOL STUDENTS' AND TEACHERS' PERCEPTIONS OF ACADEMIC ACHIEVEMENT AND UNDERACHIEVEMENT

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AN INVESTIGATION OF HIGH SCHOOL STUDENTS' AND TEACHERS' PERCEPTIONS OF ACADEMIC ACHIEVEMENT AND UNDERACHIEVEMENT

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ABSTRACT

This study investigated high school students' and teachers' perceptions of academic self-perception, environmental perceptions, goal valuation, and motivation/self-regulation as factors affecting students' academic achievement. A two-way MANOVA was conducted to determine if high school students' gender and academic programs, Non-Honors/Non-Advanced Placement (AP) and Honors/Advanced Placement (AP), differed in their perceptions of academic self-perception, attitudes towards teachers and classes, attitudes towards school, goal valuation, and motivation/self-regulation using the *School Attitude Assessment Survey-Revised*. Students in the Honors/AP program had higher levels of academic self-perception and motivation/self-regulation than Non-Honors/Non-AP students' results. Females had higher levels of motivation/self-regulation than males while males possessed greater attitudes towards school results. A stepwise multilinear regression was conducted to determine if gender, academic self-perception, attitudes towards teachers and classes, attitudes towards school, and motivation/self-regulation were

predictors of students' academic achievement as indicated by their self-reported grade point average (GPA). High school students' academic self-perception and motivation/self-regulation were significant predictors of their academic achievement results. A one-way MANOVA was conducted using data from the *Student Achievement Inventory*: *Teacher Form* to determine if high school teachers' perceptions of their students' levels of academic self-efficacy, goal valuation, environmental perceptions, and motivation/self-regulation as factors affecting their academic achievement varied according to teacher experience. No statistical differences existed between the teachers' level experience, as determined by their years spent teaching, and their perceptions of their students' levels of academic self-efficacy, goal valuation, environmental perceptions, and motivation/self-regulation as factors affecting academic achievement.

This study also sought to identify the students' and teachers' perceptions of factors impacting high school students' underachievement and to determine possible solutions to support students' their achievement. A general qualitative study consisting of high school teachers and their students was conducted using *High School Students' Views on Doing Well in School* and *High School Teachers' Views on Doing Well in School* surveys to determine causes of and solutions to underachievement. An interpretational analysis of the data revealed the emergence of environmental factors affecting student achievement, motivation, student attendance, students' behaviors and skills, and support services and strategies as core categories affecting high school students' academic achievement.

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School of Professional Studies

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Doctor of Education Dissertation

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Presented by

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DEDICATION

I would like to dedicate this study to my unborn child (children). I want you to know that Mommy sacrificed five years of her life to accomplish her goal of becoming Dr. Morales so she could be able to give you a life where she is part of your journey instead of you being part of hers.

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CHAPTER ONE:

INTRODUCTION AND IDENTIFIACTION OF THE TOPIC

In publically reported test scores and report cards, politicians, school administrators, parents, and community members fault teachers for the lack of academic achievement being exhibited by the students (Darling-Hammond, 2004; Kupermintz, 2003). In many States, teacher evaluations are being reconstructed to include a component that reflects their students' academic achievement as an evaluative measure of effectiveness which is being linked to Race to the Top school funding (Kupermintz, 2003; Mathis, 2010). Common Core State Standards (Mathis, 2010) are being adopted by many States for use in the classroom as a means to ensure that teachers are implementing the needed skills and content to help raise student academic achievement and to ensure college readiness (Mathis, 2010; Philips & Wong, 2010). These summative data are being collected to document student achievement, and influence teacher practices by holding teachers more accountable for student underachievement (Darling-Hammond, 2004; Stronge, 2006).

"What classifies as underachievement depends on the individual child" (Dunnewind, 2012, p.1). Factors such as emotional issues (Baker, Bridger, & Evans, 1998), peer group pressures (Baum, Renzulli, & Hébert, 1994), family dynamics (Baker at al., 1998; Reis & McCoach, 2000, Seeley, 2004), poverty (Seeley, 2004), curricular and other school-based concerns (Baker et al., 1998; Baum et al., 1994; Seeley, 2004), undiagnosed learning disabilities (Baum, et al., 1994; Seeley, 2004), poor self-regulation (Baum et al., 1994; Reis & McCoach, 2000) and self-concept (Baker et al., 1998; Reis & McCoach, 2000), and a lack of motivation (Baker et al., 1998; Seeley, 2004) and inadequate goal formation (Reis & McCoach, 2000; Seeley, 2004) can cause high school students to underachieve. "But the typical underachiever is

one who is smart but skims along with Cs and maybe a D, mostly for failing to turn in homework assignments and not bothering to study for tests" (Dunnewind, 2012, p. 1). Research within individual high schools is needed to determine which factors are specifically affecting students' academic achievement. This information could assist and inform teachers' decisions when selecting appropriate interventions to reverse their students' underachievement.

Rationale for Selecting the Topic

The *No Child Left Behind Act* (Darling-Hammond, 2004) required that National and State assessment scores be used as evidence to show that high school students are not academically achieving (Darling-Hammond, 2004; Darling-Hammond & McCloskey, 2011; Ravitch, 2010). The adoption of the Common Core State Standards (Mathis, 2010) attempted to resolve academic underachievement and increase test scores through the unification of curricula taught in classrooms (Mathis, 2010; Philips & Wong, 2010). Unfortunately, neither of these educational policies was constructed to determine and understand the root causes of high school student underachievement. High school students are underachieving because they lack motivation creating a sense of apathy towards learning and achievement (Bishop, 1989; Lumsden, 1994). Research on the factors that cause high school students' underachievement needs to be conducted so teachers can better prepare our high school students for college readiness and the workforce, strengthening our stake, as citizens of the United States, in global competition (Bishop, 1989; Darling-Hammond & McClosky, 2011; Philips & Wong, 2010; Robinson, 2011).

The present research was needed because an identification of the factors affecting high school students' achievement must be conducted before underachievement can be addressed within schools. This study also sought to investigate the potential disconnect that may exist

between the perceptions of high school students and their teachers on the causes of underachievement amongst regular education students. Limited research has been conducted on the underachievement of regular education high school students; however, many quantitative and qualitative studies have been conducted on the underachievement of gifted students (Baker et al., 1998; Emerick, 1992; McCoach & Siegle, 2003a; Reiss, 2009; Reis, & McCoach, 2000; Seeley, 2004; Siegle & McCoach, 2001; Siegle, Rubenstein, & McCoach, 2011). Siegle, Rubenstein, and McCoach (2011) identified the need for future studies to be conducted on populations other than gifted students focusing on the identification of factors contributing to underachievement. These future studies on different populations could lead to changes within the schools and amongst teacher practices that may reverse student underachievement. "Because the potential payoff—having students who value learning for its own sake—is priceless, it is crucial for parents, teachers, and school leaders to devote themselves fully to engendering, maintaining, and rekindling students' motivation to learn" (Lumsden, 1994, p. 5).

Statement of the Problem

School personnel are expected to address student underachievement despite the fact that its causes are varied (Berube & Siegle, 1995). Most underachievement studies utilized gifted students determining factors which affect their ability to achieve. As a result, there is limited research investigating achievement factors of students and their effect on underachievement within the general academic population making it difficult to resolve. Siegle et al., (2011) conducted a study correlating gifted high school students' and their teachers' perceptions of known factors affecting their underachievement. Similar research has neither been conducted on teachers and their students' residing within the general academic population nor have their perceptions of the causes of and solutions for underachievement been investigated.

As a result of the limited achievement and underachievement research conducted on students not enrolled in general academic programs, this study seeks to investigate the existence of perceptional differences of factors affecting achievement amongst male and female high school students enrolled in different academic programs. Differences will be sought amongst students within a Non-Honors/Non-Advanced Placement (AP) and Honors/Advanced Placement (AP) academic program and their levels of academic self-perceptions, attitudes towards teachers and classes, attitudes towards school, goal valuation, and motivation/self-regulation. Self-efficacy, goal valuation, motivation/self-regulation, and environmental perceptions are four known factors affecting achievement grounding the entire study in motivation theory (McCoach & Siegle, 2001; 2003b). Teachers' perceptions of their students' achievement, as identified by the four known motivational factors, are being investigated within this study. Also, an investigation into high school teachers' and their students' perception of the causes and solutions to underachievement was conducted to determine which internal and external factors they believe affect academic achievement.

Potential Benefits of Research

This study could create awareness for administrators, teachers, and students about factors related to student achievement, teachers' and students' perceptions of student achievement, and the potential causes of underachievement amongst student populations. The results of this study could lead to the development of programs designed to address and reverse the factors found to cause student underachievement (Baum et al., 1994; Emerick, 1992; Reis & McCoach, 2000).

Definition of Key Terms

The following terms are relevant to this study and are defined to establish clear and consistent understanding:

1. *Regular Education* includes those students who do not have an Individual Education Plan (IEP) mandating their enrollment in high school special education classes. High school students enrolled in courses which culminate in a State or district final exam will be classified as regular education students. Students enrolled in Honors level and Advance Placement courses will be classified as regular education students because their courses culminate in a State assessment and district final exam, respectively, as per district policy.
2. *Non-Honors Level* students, for the purpose of this study, are not enrolled in any Honors or Advanced Placement courses.
3. *Honors Level* students, for the purpose of this study and as per the criterion set by the school where the research was conducted, are enrolled in three or more Honors level courses as indicated on their demographic survey and have a self-reported cumulative grade point average (GPA) of 83% or higher. Honors level courses are inclusive of English, mathematics, science, and social studies/history courses. Students enrolled in one or two Honors level courses were excluded from the study.
4. *Advance Placement Level* students, for the purpose of this study and as per the criterion set by the school where the research was conducted, were enrolled in two or more Advance Placement (AP) courses. Advance Placement courses are inclusive of curricular-based English, mathematics, science, social studies/history, and foreign language courses. Students enrolled in one Advance Placement course were removed from this study.

5. *Academic Achievement* refers to the academic performance of high school students (McCoach & Siegle, 2001). Academic achievement will be determined by the students' self-reported GPA.
6. *Underachievement* will be defined as the discrepancy that exists between regular education students' potential and their actual performance (Emerick, 1992; McCoach & Siegle, 2003a; Reis & McCoach, 2000; Siegle & McCoach, 2001; Siegle et al., 2011). This definition of underachievement incorporates Seeley's (2004) definition of an underachiever as "a student who does not achieve in academic areas at a level consistent with his or her capability" (p. 1).
7. *Students' Ability* will be defined as the competence possessed by the student to complete an academic task (Ravitch, 2007; Wigfield & Eccles, 2000).
8. *Students' Potential* will be defined as the highest degree a student can exhibit. It is his or her ability to successfully perform and commit to an academic task (Green & Bauer, 1995; Miller & Gentry, 2010; Scager, et al., 2012).
9. *Self-Efficacy* is a student's belief and confidence in his or her ability to academically achieve in high school when approached with a difficult academic task (Bandura, 1982; Ferla, Valcke, & Cai, 2009; Schunk, 1991; Siegle & McCoach, 2001; Zimmerman, 2000). "Judgments of self-efficacy also determine how much effort people will expend and how long they will persist in the face of obstacles or aversive experiences" (Bandura, 1982, p.123). Self-efficacy will be referred to as levels of *academic self-perception* in this study as per the work of McCoach and Siegle (2001, 2003a) and Siegle et al. (2011) which utilized the *School Attitude Assessment Survey-Revised* (2002, 2003b) research instrument.

10. *Environmental Perception* that affects regular education students' achievement will focus on the school environment (Reis & McCoach, 2000; Siegle & McCoach, 2001). The school environment is inclusive of the physical and emotional setting established in classrooms and created by the school and the teachers so regular education students can learn and achieve (McCoach & Siegle, 2003a; Seeley, 2004; Siegle & McCoach, 2001).
11. *Goal Valuation* refers to the importance, value, and establishment of goals set by the students guiding their academic achievement in high school (Ames & Archer, 1988; Dweck, 1986; Elliot & Dweck, 1988; Hulleman, Schrager, Bodmann, & Harackiewicz, 2010; Siegle & McCoach, 2001).
12. *Motivation* is inclusive of high school students' desire to academically achieve (Murphy & Alexander, 2000). Student motivation is inclusive of high school students' personal interest and cognition to academically achieve (Linnenbrink & Pintrich, 2002).
13. *Self-Regulation* refers to high school students' knowledge of their abilities, strategies, and skills to complete academic tasks to academically achieve (Pintrich & DeGroot, 1990; Zimmerman, 1990).

CHAPTER TWO:

REVIEW OF THE LITERATURE

First, motivation theory and its constructs of self-efficacy, goal valuation, motivation, self-regulation, and environmental perceptions will each be discussed in relation to achievement in the academic setting. Second, a discussion on attributional theory as it relates to student achievement will occur. The selected quantitative studies are used to examine the perceptions of adolescents' causal attributions of success and failures as they affect content area achievement or are affected by gender. Third, the construct of underachievement will be discussed within the context of gifted students because most of the literature and research on academic underachievement was conducted on gifted students. The data from these studies can be applied to the Honors/AP group because these are typically the courses available for gifted high school students. Fourth, a comparison of novice and experienced teachers will be conducted for which the literature supports differences in their self-efficacy, teaching behaviors, and perspectives about various aspects of teaching. These studies sought to determine if differences existed in teachers' beliefs about students as they gain teaching experience.

The literature investigating motivation and attribution theories, and the construct of underachievement and teacher experience was vast and rich. All literature needed was selected based on its relevance to this this study. The literature search process details the selection of all articles used in this review of literature.

Overview of Literature Search Process

A search of the literature was conducted to ground this study in theory and supportive literature. Internet and article database searches were conducted using of the following search terms, "underachievement," academic underachievement," "high school students and

underachievement," "high school students and achievement," "high school students and achievement studies," "high students and underachievement studies," "motivation theory," attribution theory," "attribution theory studies," "regular education students and achievement," "regular education students and underachievement," "teacher experience," "novice and experienced teachers," "novice and expert teachers," and " novice and experienced teachers studies." The application of these terms resulted in over 10,000 articles that were potentially useful in theory and research. Research within the field of the self-efficacy, goal valuation, motivation/self-regulation, and environmental perceptions as constructs affecting high school students' achievement were selected for review because they are the constructs analyzed within this study. Studies grounded in motivation and attribution theories and the constructs of underachievement and teacher experience were selected for their shared theoretical framework with this study and used to construct the current review of literature. Seminal works on motivation and attribution theories, and underachievement were selected because of their multiple citations in other works used in this review of literature. Published literature reviews on the constructs investigated within this study provided well supported research for use within this literature review. Studies conducted on populations sharing similar demographic information in the areas of gender, race/ethnicity, grade level, and regional settings were selected to support the findings within this study. Research studies published within the last 26 years were to support the constructs being studied.

The refinement of the selection of articles allowed for the use of all applicable theoretical seminal works, research studies in which the *School Attitude Assessment Survey-Revised* (McCoach, 2002) and the *Student Achievement Inventory: Teacher Form* (Siegle et al., 2011) were used for data collection on factors affecting students' academic achievement and research

studies comparing perceptions of novice and experienced teachers on factors affecting their behaviors, respectively. Research studies grounded in motivation and attribution theories were also reviewed. Similarities in purpose, theory, instrumentation, and methodology between this study and other research studies conducted were the main factors used to select research for inclusion in this review of literature. This refinement process resulted in the final selection of 53 articles for use within this review of the literature.

Perspectives of Motivation Theory

Achievement is defined as "the mastery of a skill or of knowledge as a consequence of the individual's effort, training, and practice" (Ravitch, 2007, p. 9). Academic achievement is affected by an individual's determination to learn, develop and acquire knowledge and skills, and demonstrate ability in a school setting, grounding it in motivation theory (Brophy, 1987; Murphy & Alexander, 2000; Nicholls, 1984). Many theories of motivation are domain-specific (Murphy & Alexander, 2000) making one inclusive definition of motivation difficult to construct. Theories of motivation also include various subscales each influencing academic achievement. Murphy and Alexander (2000) sought to deconstruct the domains that comprise academic achievement motivation. Typical components of motivation are: self-efficacy (Driscoll, 2005; Murphy & Alexander, 2000; Siegle & McCoach, 2001;) goal orientation (Driscoll, 2005; Murphy & Alexander, 2000; Siegle & McCoach, 2001), self-regulation (Driscoll, 2005; Linnenbrink & Pintrich, 2002; Siegle & McCoach, 2001), intrinsic and extrinsic motivation (Driscoll, 2005; Murphy & Alexander, 2000), interest (Driscoll, 2005; Murphy & Alexander, 2000), and environmental perceptions (Siegle & McCoach, 2001). All of these components can affect academic achievement.

Self-efficacy. Self-efficacy affects one's ability to feel, think, and achieve; as well as one's level of motivation and behavior (Bandura, 1982, 1994; Zimmerman, 2000). Self-efficacy is not fixed at a particular level amongst individuals but is dynamic (Linnenbrink & Pintrich, 2002). It is dependent upon perceptional judgments of one's abilities to complete a task (Bandura, 1982; Linnenbrink & Pintrich, 2002; Parajes & Schunk, 2001). Individuals who believe they can successfully complete a task are more likely to attempt that task than those who perceive they will fail in the task (Bandura, 1982). These perceived variations in the difficulty levels of tasks can affect one's perception of ability which in turn impacts self-efficacy.

Self-efficacy is affected by performance attainments, vicarious experiences, verbal persuasion, and one's own psychological state of mind (Bandura, 1982, 1991, 1994; Schunk, 1991; Zimmerman, 1990). "Self-efficacy beliefs contribute to motivation in several ways: They determine the goals people set for themselves; how much effort they expend; how long they persevere in the face of difficulties; and their resilience to failures" (Bandura, 1994, p. 4). These beliefs create variances in achievement. Past successes and failures on a particular task or in a certain setting can raise or lower the belief in oneself to achieve success. Stress, fatigue, emotions, and other internal and external physiological variables affect self-efficacy by affecting task performance (Bandura, 1982, 1991; Zimmerman, 2000). Personal judgments of how well one may do on a task while observing peers complete the task can affect self-efficacy.

Peers play an influential role in the growth and support of self-efficacy amongst school-age children (Bandura, 1994). Positive and negative peer interactions and influences, which are vicarious experiences, can affect student self-efficacy impacting their motivation to achieve (Bandura, 1994; Pajares & Schunk, 2001; Schunk, 1991).

Goal valuation. Learners vary in their goal orientation which affects the importance they place on goal setting. Goal orientation is dependent upon the learners' perceptions and behaviors towards goal attainment in a particular situation (Dweck & Leggett, 1998; Heyman & Dweck, 1992; Linnenbrink & Pintrich, 2002). The setting of attainable achievement goals affects self-efficacy and motivation impacting goal valuation (Bandura, 1982; Schunk, 1991). Goal setting is a motivation strategy that increases self-efficacy through the attainment of knowledge and skills (Bandura, 1982) that, when achieved, increases motivation.

Mastery and performance goals affect motivation through the demonstration of competency in an achievement setting. Mastery goals increase the learner's competency focusing on the growth of ability over time while performance goals validate the learners' competency by focusing only on ability based outcomes (Dweck, 1986; Elliot & Dweck, 1988; Grant & Dweck, 2003). The effort and persistence exhibited by the learner to achieve learning or performance goals increases motivation by enhancing self-efficacy and reinforcing one's achievement.

Motivation to learn. Brophy (1987) states that "motivation to learn refers not just to the motivation that drives later performance but also to the motivation underlying the covert processes that occur during learning" (p. 41). Task interest is a covert process that can be influenced by intrinsic factors which affect motivation (Bandura, 1982; Brophy, 1987; Linnenbrink & Pintrich, 2002; Murphy & Alexander, 2000). The personal value, appreciation, and challenge placed on a task can affect current and future achievement. Achievement monitoring through the self-regulation of personal standards, past activities, the accomplishment of goals, the active comparison of oneself to others, and self-efficacy can affect task motivation (Bandura, 1991; Pintrich, 2004). Zimmerman (2000) states that self-efficacy beliefs influence

choice of activities, level of effort, persistence, and emotional reactions which are indicative of academic motivation.

Self-regulation. Self-regulation allows for self-control amid changing circumstances, situations, and tasks that can affect achievement. Behaviors such as personal responsibility and initiative, self-control, and self-direction towards knowledge acquisition are guided by one's self-efficacy and self-motivation creating interdependency between self-regulation and motivation (Zimmerman, 1990). Motivation is influenced through self-observation, judgment process, and self-reactivity which allow for control over thoughts, actions, and feelings (Bandura, 1982, 1991; Zimmerman, 1990). Self-regulatory processes, such as goal setting, self-monitoring of past and current achievements and personal standards, self-evaluation, and strategy use, can increase the achievement of goals affecting motivation (Schunk, 1998; Zimmerman, 2000).

Environmental perceptions. Environmental perceptions are indicative of how students' perceive and provide meaning to their classroom, teacher, and school experiences affecting student motivation (Ames, 1992; Siegle & McCoach, 2001). Academic tasks, classroom learning activities, teacher evaluation and recognition practices, and the distribution of authority and responsibilities within the classroom by the teacher are teacher influenced environmental factors that affect the learners' ability to achieve (Ames, 1992; Boren, Callahan, & Peugh, 2010). Students' attitudes, either positive or negative, towards their academic environment and the learning experiences which occur in the classroom can affect their motivation to academically achieve. The students' perceptions of their teachers, student-teacher relationships, instructional tasks, learning activities, and the school and classroom environments affect their level of self-efficacy, goal valuation, ability to self-regulate, and motivation to academically achieve (Ames,

1992; Boren et al., 2010; Burnett, 2002; Greene, Miller, Crowson, Duke, & Akey, 2004; Perry, 2008; Siegle & McCoach, 2001; Siegle & McCoach, 2009; Van Petegem, Aelterman, Rosseel, & Creemers, 2007).

Research on Self-Efficacy, Goal Valuation, Motivation, Self-Regulation, and Environmental Perceptions Affecting Academic Achievement

Various studies have been conducted analyzing the effects of the following factors, either individually or in combination, on academic achievement: self-efficacy, goal valuation, motivation, self-regulation, and environmental perceptions. Gender is a variable also analyzed in some studies for its effect on academic motivation. The studies selected for this section of the review of literature include secondary students from urban and suburban schools in grades 7-12 which is inclusive of the location, age, and grade levels of the students sampled in the present study.

Self-efficacy and goal valuation studies affecting academic achievement. The following studies were selected because they contain methodological similarities to this study. Zimmerman, Bandura, and Martinez-Pons (1992), and Long, Monoi, Harper, Knoblauch, and Murphy (2007) investigated self-efficacy and goal valuation as factors affecting academic achievement.

Zimmerman, Bandura, and Martinez-Pons (1992) designed a study to determine if high school students' self-efficacy for self-regulated learning and the setting of parental and student grade goals affected academic achievement. The sample population (n = 102) of 50 males and 52 females, from two large Eastern culturally diverse high schools, who enrolled in ninth or tenth grade social studies classes, participated in the study. The self-efficacy for self-regulated learning and self-efficacy for academic achievement subscales from the *Children's*

Multidimensional Self-efficacy Scales were used for data collection. A Cronbach's alpha of .87 was reported for the self-efficacy for self-regulated learning scale while an alpha of .70 was reported for the self-efficacy for academic achievement. The two items representing parental and student grade goals items, which reported future grade expectation, and the lowest acceptable satisfactory grade, were assessed by using the Locke and Bryan rating scales reporting a Cronbach's alpha of .63 and .80, respectively.

Correlations were conducted amongst the variables for self-efficacy, goals, and grades. Zimmerman et al., (1992) reported that the students' prior social studies grades were significantly correlated ($p < .05$) with the following variables: perceived academic self-efficacy ($r = .22$), grade goal ($r = .23$), parents' grade goal ($r = .26$), and final grade in the course ($r = .23$). A significant correlation ($p < .05$) existed between the students' perceived self-efficacy for academic achievement and the following variables: grade goal ($r = .41$) and final grade in the course ($r = .39$). Parents' grade goal was significantly higher, $t(101) = 8.16$, ($p < .01$), than their children's grade goal. A significant correlation ($p < .05$) existed between the parents' and students grade goals ($r = .41$) and students' personal grade goals and their final grade in the course ($r = .52$). A significant correlation ($p < .05$) existed between the students' perceived self-efficacy for self-regulated learning and self-efficacy for academic achievement ($r = .51$). Zimmerman et al., (1992) reported "the model of self-motivation and students' prior grade achievement was predictive of their final grade in their social studies course ($R = .56$, $p < .01$) and accounted for 31% of the variance in their academic attainment" (p. 670).

A causal path analysis was conducted to analyze the results of the study. A significant path ($p < .05$) existed between the following variables: students' prior social studies grade and their parents' grade goal ($p = .26$), students' perceived efficacy for self-regulated learning and

their efficacy towards academic achievement ($p = .51$), students' perceived self-efficacy for academic achievement and final grades ($p = .21$), students' perceived self-efficacy for academic achievement and their personal goals ($p = .36$), students' grade goals and their current course grade ($p = .43$), and parent's and students' grade goals ($p = .36$). Zimmerman et al., (1992) reported the combined direct and indirect causal effect ($p = .37$, $p < .05$) of students' perceived self-efficacy for academic achievement on their final grades via student goals.

Causality could not be made because of the possible existence of extraneous variables which could be used to explain the variance. Prior grade attainment correlated with student academic self-efficacy and goal setting through parental academic goals set for their children. Direct paths neither existed between the students' prior grade and their final grade nor between the students' prior grade and their self-efficacy for self-regulated learning.

The relationships found between high school students' perceived self-efficacy and their setting of grade goals in social studies indicated that students' ability to achieve academically is related to their beliefs in their abilities. The path analysis revealed that high school students' perceived self-efficacy had direct effects on academic achievement and goal setting. The results indicated a relationship between high school students' self-efficacy and goal valuation on academic achievement as constructs of this study supporting the literature on self-efficacy and goal valuation as a factors affecting academic achievement.

Long, Monoi, Harper, Knoblauch, and Murphy (2007) conducted a two-year longitudinal study investigating the effects of interest, self-efficacy, and three motivational variables as measured by three different goal orientations (learning, performance, and work-avoidance) on the academic achievement of African-American students as they progressed from grades eight to nine. The study was conducted in a large, culturally diverse, urban school district in which more

than half of the sample population received free or reduced lunch. Eighth grade students (n = 255) of which 123 males and 132 females were sampled from three middle schools while 83 male and 75 female ninth grade students (n = 159) were sampled from the single high school within the same district.

An interest/self-efficacy scale with a reported Cronbach's alpha of .92 was used for the self-reporting of interest and efficacy beliefs in the six domain areas of: history, mathematics, science, reading, computer science, and art. These six domains were later collapsed into one interest domain for statistical purposes. The motivational variables as identified by achievement goal orientation, which included learning, performance, and work-avoidant goals, were assessed using 18 adapted items from *Patterns of Adaptive Learning*. Values for Cronbach's alpha ranged from .77 to .86 for each of the three goal orientations. Academic achievement was indicated by a composite grade point average (GPA) which resulted from the average grade for the following core subjects: reading/literature, history/social studies, math, and science.

Long et al. (2007) conducted an independent *t-test*, $t(412) = 6.968$, $p < .01$, which revealed a significant decrease in mean GPA from eighth (M = 2.130) to ninth grade (M = 1.427). Bivariate correlations were conducted for gender, the three motivational variables (learning, performance, and work-avoidance goal orientation) domain interest, and academic achievement as indicated by GPA. Domain interests for both eighth and ninth graders were significantly ($p \leq .01$) correlated to learning goals (r = .663, r = .618), self-efficacy (r = .872, r = .889), and performance goals (r = .153, r = .309), respectively. Performance goals for eighth and ninth grades were significantly ($p \leq .01$) correlated to learning goals (r = .137, r = .283) and work-avoidance goals (r = .407, r = .538), respectively. Achievement in both eighth and ninth graders significantly ($p \leq .01$) correlated with work-avoidance goals (r = -.169, r = -.217),

respectively. Achievement in eighth graders significantly ($p \leq .01$) correlated with domain interest ($r = .166$) and self-efficacy ($r = .204$).

Gender differences were found between eighth and ninth grade students. Gender in eighth graders significantly ($p \leq .01$) correlated with learning goals ($r = .179$), work-avoidance goals ($r = -.168$), and academic achievement ($r = .192$). Eighth grade females possessed higher learning goals and grade point averages than eighth grade males. The eighth grade males possessed higher levels of work avoidance than eighth grade females. Statistical correlations ($p \leq .01$) occurred between the gender of ninth grade students and work-avoidance ($r = -.243$) and performance goals ($r = -.302$). Ninth grade males reported higher levels of work-avoidance and performance goals than ninth grade females. A MANOVA was conducted using gender as the independent variable and the three motivational variables of learning goals, performance goals, and work-avoidance goals. The dependent variables showed a significant main effect ($p < .001$), *Wilks's* $\Lambda = .897$, $F(6, 248) = 4.764$ for eighth grade students.

A regression analysis was conducted to determine if gender, learning, performance, and work-avoidant goal orientations, and self-efficacy were predictors of domain interest. Seventy-eight percent of the variance ($R^2 = .78$) was explained by the predictor variables for eighth grade students' domain interest, while 81% of the variance ($R^2 = .82$) was explained by the predictor variables for ninth grade students' domain interest. Learning goal orientation (eighth grade, $\beta =$ .18; ninth grade, .17) and academic self-efficacy (eighth grade, $\beta = .77$; ninth grade, .77) were significant predictors ($p \leq .01$) for students' domain interest, respectively. Gender ($\beta = .16$) was a significant predictor ($p \leq .05$) of academic achievement amongst eighth graders. A hierarchical regression analysis was conducted to determine if gender, learning, performance, work-avoidant goal orientations, and self-efficacy were predictors of academic achievement. Gender ($\beta = .16$, p

≤ .05) and academic self-efficacy (β = .28, $p \leq .01$) of ninth graders were significant predictors of academic achievement. Work-avoidance goal orientation (β = -.22, $p \leq .05$) and domain interest (β = -.60, $p \leq .01$) were negative predictors of academic achievement while self-efficacy (β = .56, $p \leq .01$) was a positive predictor of academic achievement. The model explained 9% of the variance of academic achievement for eighth graders and 10% of the variance of academic achievement for ninth graders.

Self-efficacy and learning goal orientations were strong predictors of domain interest in both eighth and ninth grade students. Self-efficacy contributed to academic achievement for students in both grade levels. Gender had an effect on the academic achievement of both eighth and ninth grade students. The composite GPA of ninth grade high school students was significantly lower than eighth grade middle school students. Domain interest and work-avoidance goals had a negative effect on the academic achievement of ninth grade students only.

The relationships found between eight and ninth grade students' domain interest, their level of self-efficacy and goal valuation as factors affecting academic achievement supported the literature. Self-efficacy and goal valuation have been identified as factors affecting academic achievement by affecting students' levels of motivation. The results can be applied to this study because the sample population is inclusive of adolescent students, their student and school demographics are similar, and self-efficacy, goal valuation, and gender were variables affecting the students' academic achievement.

Motivation, self-regulation, and self-efficacy study affecting academic achievement.

Pintrich and De Groot (1990) investigated motivation, self-regulation, and self-efficacy as factors affecting academic achievement. They conducted a correlational validity study into the relationship between intrinsic value, self-efficacy, and test anxiety as motivational

components; cognitive strategy use and self-regulation as self-regulated learning components; and classroom academic performance. The sample (n = 173) was taken from a predominately Caucasian middle-class small city school district and included 100 female and 73 male seventh grade students from eight science and seven English classes who varied in achievement levels.

The Motivated Strategies for Learning Questionnaire (MSLQ) was administered to students to report on their motivation, cognitive and metacognitive strategy use, and management effort for their science or English course. The MSLQ consisted of the following five subscales: the Self-Efficacy scale (α = .89), the Intrinsic Value scale (α = .87), the Test Anxiety scale (α = .75), the Cognitive Strategy Use scale (α = .83), and the Self-Regulation scale (α = .74). Scores were collected in three general task categories for each student: in-class seatwork and homework, quizzes and tests, essays and reports. These values were averaged to determine the students' academic performance. The students' academic performance scores were then converted to *T* scores for each class before data analysis.

Correlations were conducted to determine the relationship between the three motivational components of intrinsic value, self-efficacy, and test anxiety and the two self-regulated learning components of cognitive strategy use and self-regulation. Pintrich and De Groot (1990) reported that self-efficacy was significantly ($p < .001$) correlated with cognitive strategy use (r = .33), self-regulation (r = .44), and test anxiety (r = -.34). Intrinsic values were positively correlated ($p < .001$) with self-efficacy (r = .48), strategy use (r = .63), and self-regulation (r = .73). Cognitive strategy use was significantly correlated ($p < .001$) with self-regulation (r = .83).

A MANCOVA was conducted to determine interactions between the three motivational components of intrinsic value, self-efficacy, and test anxiety as they relate to the self-regulated learning components of strategy use and self-regulation. A MANCOVA, using a covariate of

prior achievement, revealed a significant result, "*Hotelling's* T^2 = .05, S = 1, M = 0, N = 80 1 / 2, $F(2, 163) = 3.97$, $p < .02$" (p. 36). Prior achievement was a significant predictor of self-regulation, $r = .17$, $F(1, 164) = 4.80$, $p < .03$, $MS_e = 0.38$ as demonstrated by the univariate tests. Self-efficacy, "*Hotelling's* T^2 = .05, S = 1, M = 0, N = 80 1 / 2, $F(2, 163) = 4.07$, $p < .02$" (p. 36), as a motivational variable had significant main effect for the multivariate test. The univariate test for self-efficacy revealed significant differences, $F(1, 164) = 4.24$, $p < .04$, $MS_e = 0.43$, amongst high achievers (adjusted $M = 5.41$) and low achievers (adjusted $M = 4.97$) and their usage of cognitive strategies as a self-regulatory learning component. Significant differences, $F(1, 164) = 8.16$, $p < .005$, $MS_e = 0.38$, were revealed between high achievers (adjusted M = 5.31) and low achievers (adjusted $M = 4.74$) and their usage of self-regulation as a self-regulatory component. Intrinsic value, "*Hotelling's* T^2 = .42, S = 1, M = 0, N = 80 1 / 2, $F(2, 163) = 34.25$, $p < .0001$" (p. 36), as a motivational variable also revealed a significant main effect for the multivariate test. The analyses revealed significant differences, $F(1, 164) = 68.40$, $p < .0001$, $MS_e = 0.38$, amongst high achievers (adjusted $M = 5.49$) and low achievers (adjusted M = 4.56) and their use of self-regulation as a self-regulatory learning component.

Zero-order correlations were conducted to determine if relationships existed between the motivational and self-regulated learning components and student performance. Students' first semester grade, exam and quiz grades, and second semester grades all significantly correlated with intrinsic value ($r = .25$, $p < .01$; $r = .20$, $p < .01$; $r = .30$, $p < .001$), self-efficacy ($r = .34$, $p < .001$; $r = .24$, $p < .01$; $r = .36$, $p < .001$;), test anxiety ($r = -.24$, $p < .01$; $r = -.21$, $p < .01$; $r = -23$, $p < .01$), cognitive strategy use ($r = .18$, $p < .05$; $r = .20$, $p < .01$; $r = .2\ 0$, $p < .01$), and self-regulation ($r = .32$, $p < .001$; $r = .28$, $p < .01$; $r = .36$, $p < .001$), respectively. Students' seatwork and essays and reports significantly correlated with intrinsic value ($r = .21$, $p < .01$; $r =$

.27, $p < .01$, self-efficacy ($r = .19$, $p < .05$; $r = .25$, $p < .01$, and self-regulation ($r = .22$, $p < .01$; $r = .36$, $p < .001$, respectively. Students' essays and reports also significantly correlated ($p < .05$) with students' cognitive strategy use ($r = .19$).

Regression analyses were conducted for all five performance scores where semester grades were averaged into one overall semester grade and identified as performance. Self-regulation was positively related to seatwork performance (partial $r = .18$, $p < .02$) while cognitive strategy use (partial $r = -.18$, $p < .02$) was negatively related to seatwork performance ($r^2 = .10$). Test anxiety ($r^2 = .12$) for exams and quizzes was negatively related to performance (partial $r = -.19$, $p < .02$), while being positively related to self-regulation (partial $r = .26$, $p < .0005$). Performance was positively related to self-regulation (partial $r = .22$, $p < .0004$) and negatively related to cognitive strategy use (partial $r = -.17$, $p < .02$). Self-efficacy (partial $r = .18$, $p < .02$) and self-regulation (partial $r = .22$, $p < .005$) were significant predictors of the average grade ($r^2 = .22$).

Pintrich and De Groot (1990) reported that self-regulation, self-efficacy, and test anxiety were the best predictors of academic performance which is dependent upon the varying type of performance outcome. Self-efficacy and intrinsic value were positively related to cognitive strategy use, self-regulation, and performance. Cognitive strategy use and self-regulation were highly correlated with one another while intrinsic value was related to both cognitive strategy use and self-regulation.

This study supported the motivational constructs of self-efficacy, motivation, and self-regulation as variables affecting academic achievement. It also supported the relationship between motivation and self-regulation which are combined as one construct in this study when investigating its effect on achievement. Seminal works related to motivation theory and its

constructs of self-efficacy and motivation/self-regulation were supported by Pintrich and De Groot's (1990) study and can be used in support of this research study's data which investigates self-efficacy and motivation/self-regulation as constructs affecting academic achievement.

Goal valuation, self-regulation, and environmental perception studies affecting academic achievement. Studies by Ames and Archer (1988) and Greene, Miller, Crowson, Duke, and Akey (2004) were selected because the authors both investigated goal valuation, self-regulation, and environmental perceptions as factors affecting academic achievement.

Ames and Archer (1988) conducted a study to investigate how the students' use of learning strategies, task choices, attitude, and causal attributions as motivational processes, are affected by their goal orientation, mastery and performance goal setting, for the class. Mastery goal orientation is interchangeable with a learning goal orientation. The sample (n = 176) consisted of 91 males and 85 females in grades 8 – 11 attending a junior/senior high school for academically advanced students from which 4 to 6 students were randomly selected from each of the core subjects, English, mathematics, science, and social studies, and surveyed to respond to questions about that specific class. These students were divided into four groups and classified as high performance-high mastery (Hi-Hi), high performance-low mastery (Hi-Lo), Low performance-high mastery (Lo-Hi), and low performance-low mastery (Lo-Lo) to compare the students' perception of the classes containing high mastery and performance goal orientation with those containing high mastery but low performance goal orientation.

Goal orientation was assessed by a 24-item questionnaire consisting of a Mastery scale and a Performance scale, with reliability coefficients of .88 and .77, respectively. There is a -.03 correlation between the scales. Information processing, self-planning, and self-monitoring were the learning styles assessed by 15 items adapted from the *Learning and Study Strategy Inventory*

reporting a Cronbach alpha of .84. Task challenge was assessed using two highly correlated (r = -.61, $p < .001$) items adapted from Elliot and Dweck's 1988 study. Students' attitudes toward class and perceived ability were assessed on a 5-point scale by the following questions, "How would you rate your liking for this class? And, "How would you rate your ability in this subject compared to other students in your class?" (p. 262), respectively. Causal attribution was assessed by two sets of attribution questions consisting of a 5-point scale to determine the students' successes and failures in class.

Zero-order correlations were conducted between mastery and performance goal structures and the following student variables: learning strategies, task challenge, and self-perception of competence, ability, effort, strategy, task, and luck as attributions for success and failure. A significant correlation ($p < .001$) occurred between mastery goals and learning strategies (r = .49), attitude towards class (r = .63), task challenge (r = .34), effort (r = .37) and teacher (r = .47) as a cause for success. Strategy (r = .22) as a cause for success was positively correlated ($p <$ .001) with mastery goals, while task ease (r = -.23) as a cause for success, and teacher (r = -.29) as a cause of failure, were negatively correlated ($p < .001$) with mastery goals. A significant correlation ($p < .001$) occurred between performance goals and strategy as a cause for success (r = .24), and task difficulty as cause for failure (r = .29). Effort (r = .14, $p < .05$), as a cause for success ability (r = .16, $p < .05$) and strategy (r = .16, $p < .05$), as a cause for failure were also positively correlated with performance goals. Attitude toward class (r = -.14) and self-competence (r = -.13) were negatively correlated ($p < .05$) with performance goals.

A hierarchical regression analysis was conducted to determine the predictive value of perceived ability, performance goal and mastery goal orientations to predict the students' use of learning strategies, task choices, and attitudes. Students' perceived ability was a significant

predictor of learning strategies (β = .03, p < .05), task choice (β = .03, p < .001), and attitude (β = .03, p < .001), while mastery goal orientation was a significant predictor (p < .001) of learning strategies (β = .23), task choice (β = .12), and attitude (β = .38).

An ANOVA was conducted to create profile comparisons from the students' perceptions of the classes' containing high mastery and performance goal (Hi-Hi) orientation with those containing high mastery but low performance goal (Hi-Lo) orientation. There were significant differences, F(3, 172) between students in the Hi-Hi and Hi-Lo groupings and their perceptions of learning strategies, (Hi-Hi M = 50.56, Hi-Lo M = 41.56), t(176) = 12.91, p < .001, task challenge, (Hi-Hi M = 6.12, Hi-Lo M = 4.75), t(176) = 7.11, p < .001, attitude, (Hi-Hi M = 4.22, Hi-Lo M = 2.65), t(176) = 23.70, p < .001, effort, (Hi-Hi M = 4.42, Hi-Lo M = 3.69), t(176) = 8.17, p < .001, strategy, (Hi-Hi M = 3.49, Hi-Lo M = 3.10), t(176) = 5.19, p < .01, task, (Hi-Lo M = 3.48, Hi-Hi M = 2.98), t(176) = 3.94, p < .01, teacher as an attribution towards success, (Hi-Hi M = 3.81, Hi-Lo M = 2.94), t(176) = 7.07, p < .001, and teacher as an attribution towards failure, (Hi-Lo M = 3.06, Hi-Lo M = 2.58), t(176) = 4.91, p < .01.

Students' perceptions of learning strategies, task challenge, attitudes towards class, self-competence, and attributes for success and failure as motivational processes within the class were related to mastery and performance goal orientation. A student with perceived mastery goal orientation within the class was likely to use effective learning strategies, preferred challenging tasks, had a more positive attitude towards the class, and had a stronger belief that effort determines success while those with perceived performance goal orientation within the class attributed failure to a lack of ability.

Greene et al. (2004) conducted a study to determine if their theoretical model explained the impact of students' perceptions of the classroom structures of motivating tasks, autonomy

support, and mastery evaluation on their self-efficacy, perceptions of instrumentality of classwork, and their achievement goals. Perceptions of instrumentality for this study refer to the "extent to which school tasks are perceived as instrumental to attaining personally valued goals" (p. 463). The study was conducted in a culturally diverse suburban Midwestern high school. The sample (n = 220) population consisted of 94 males and 125 females enrolled in English classes of which 50 students reported being tenth grade, 42 were eleventh grade, 127 were twelfth grade students.

Three different survey instruments were administered to the students over three consecutive months. Classroom structures were measured by *The Survey of Classroom Goal Structures* survey which consisted of three subscales, Motivating Tasks, Autonomy Support, and Mastery Evaluation, each reporting a Comparative Fit Index (CFI) of .97, .93, and .92, respectively. Self-efficacy was measured by a scale reporting an alpha level of .91 and validity was described in other published studies. Mastery goals, performance-approach goals, perceived instrumentality, and cognitive strategies used in studying for class were measured by the *Approaches to Learning* survey, which had internal consistency related values for each subscale ranging from .76 to .91. Achievement was measured by the total percentage point earned in the respective English class as determined by the combination of percentage grades on exams, projects, and homework assignments. This value of achievement was correlated ($p < .05$) for all nine variables.

A path analysis was conducted to determine the appropriateness of the model for explaining the effect of students' perceptions of classroom structures, motivating tasks, autonomy support, and mastery evaluation, on their self-efficacy, perceptions of instrumentality of classwork, and their achievement goals. The model proved an acceptable fit with a reported

SRMR of .03 and RMSEA value of .019. Self-efficacy (β = .08, t = 5.29) and strategy use (β = .15, t = 2.08) positively and significantly predicted achievement. Autonomy support (β = .22, t = 2.16) and mastery evaluation (β = .29, t = 2.53) were predictors of self-efficacy. These predictors explained 22% of the variance for achievement and self-efficacy. Self-efficacy (β = .24, t = 4.08), perceived instrumentality (β = .44, t = 7.49), and motivating tasks (β = .34, t = 4.00) predicted mastery goals. Self-efficacy (β = .29, t = 4.41) and motivating tasks (β = .33, t = 3.86) were predictors of perceived instrumentality. These predictors explained 53% of the variance in mastery goals and 31% of the variance in perceived instrumentality. Self-efficacy (β = .22, t = 2.68) was a significant predictor of performance-approach goals. Self-efficacy and perceived instrumentality, when a one-tailed test (β = .14, t = 1.69) was used, explained 7.4% of the variance in performance-approach goals. Self-efficacy (β = .14, t = 2.39), mastery goal (β = .40, t = 5.62), and perceived instrumentality (β = .27, t = 3.85) were predictors of strategy use. These predictors explained 48% of the variance in strategy use.

Greene et al. (2004) found that a causal relationship existed between the students' perceptions of the classroom and their motivation as measured by the constructs of self-efficacy, mastery goals, and perceived instrumentality. A positive causal relationship existed between autonomy support and grades, strategy use, and motivation as measured by the constructs of self-efficacy, mastery goals, and perceived instrumentality, respectively. Perceived instrumentality was found to directly affect those students who set mastery goals. Self-efficacy and strategy use were found to directly affect student achievement.

High school students' perceptions of classroom structures were shown to affect their goal valuation, self-efficacy, and self-regulatory behaviors affecting their academic achievement as supported by the literature.

A Perspective of Attribution Theory

Kelley & Michela (1980) stated that "attributional research concerns the consequences of attributions which entail assessment or manipulation of perceived causes and measurement of their effects on behavior, feelings, and expectancies" (p. 460). Attribution theory seeks to find the causal relationships that exist between one's perceptions of success or failure on a task and their impact on future achievement outcomes (Schunk, 1991, 1998; Weiner, 1972, 1985). Self-imposed and implied perceptions by others of success and failure by others are attributing factors to motivation impacting academic achievement (Schunk, 1991; Weiner, 1972, 1985).

Attributions affect outcomes which determine the reoccurrences of a particular behavior. These behaviors may be the result of internal, personal factors or external, environmental factors. Ability, effort, task difficulty, mood, interest, and luck attribute to one's successes or failures influencing academic outcomes and goal valuation through their effects on motivation (Schunk, 1998; Weiner, 1972, 1985). These "causal attributions affect motivation, performance, and affective reactions mainly through beliefs of self-efficacy" (Bandura, 1994, p. 4). Internal or external factors that attribute to successful behaviors are known to raise self-efficacy while behaviors resulting in failure lower self-efficacy. Causal attributions are influenced by emotions which affect motivation, influencing academic achievement.

Emotional experiences are generated based on the success or the failure of a behavioral outcome. Happiness, frustration, sadness, pride, anger, pity, guilt, shame, gratitude, and hopelessness are emotions evoked by behavioral outcomes (Weiner, 1985). Success or failure outcomes elicit these emotions effecting achievement motivation. Positive emotions of happiness, and pride, in relation to self-esteem increase achievement motivation by causing repetition in behavior while negative emotions of frustration, sadness, anger, pity, guilt, shame,

and hopelessness decrease achievement motivation because it results in the need to discontinue a behavior lowering self-esteem and effecting self-efficacy.

The perceptions of success and failure by students are attributing factors which affect their motivation. Multiple internal and external factors can influence one's perception of success and failure affecting the tendency to repeat a particular academic behavior. The degree at which this behavior is repeated will impact the students' academic achievement.

Attribution Theory Research

The following studies were selected because they were grounded in attribution theory and investigated the effects of causal attributions on students' academic achievement. Shell, Colvin, and Bruning (1995), and Swinton, Kurtz-Costes, Rowley, and Okeke-Adeyanju (2011) conducted studies investigating causal attributions as factors affecting students' academic achievement.

Shell et al. (1995) conducted a study to determine if grade-level and achievement-level differences existed amongst fourth, seventh, and tenth grade students' self-efficacy, causal attributions, and outcome expectancy beliefs for reading and writing. They also sought to analyze the relations between the students' beliefs and achievement in reading and writing. The sample consisted of a total of 155 boys, 193 girls and 16 students of unknown sex (n = 364). There were 105 fourth graders, 111 seventh graders, and 148 tenth graders who voluntarily participated in the study from a Midwestern school district. The students varied in socioeconomic status and were predominately Caucasian.

Three different instruments were used to measure the students' self-efficacy, outcome expectancy, and causal attributions. A self-efficacy instrument for reading consisted of a reading task subscale with a reported Cronbach's alpha of .72 and a reading skill subscale with a reported

Cronbach's alpha of .62. The self-efficacy instrument for writing consisted of a writing task subscale with a reported Cronbach's alpha of .69 and a writing skill subscale with a reported Cronbach's alpha of .76. Two outcome expectancy instruments were administered to the students. The outcome expectancy instrument for reading had a reported Cronbach's alpha of .50 while the outcome expectancy instrument for writing reported a Cronbach's alpha of .56. Two separate instruments were used to rate the students' beliefs of effort, ability defined as general intelligence, enjoyment, luck, task difficulty, and teacher help as causes of success in reading and writing. Six causal attribution scores were each generated for reading and writing total twelve different scores. Students' reading and writing achievement was measured by their *California Achievement Test* scores. A writing essay was administered to the students and scored by two different raters to establish an interrater reliability a score of .74.

Students in each grade level were assigned to three different achievement-level groups, high, average, and low. Grouping was determined by the students' composite literacy score with cutoff scores between the 70^{th} and 30^{th} percentiles. The high achievement group (n = 104) consisted of 30 fourth grade, 32 seventh grade, and 42 tenth grade students. The average achievement group (n = 156) consisted of 46 fourth grade, 47 seventh grade, and 63 tenth grade students. The low achievement group (n = 104) consisted of 29 fourth grade, 32 seventh grade, and 43 tenth grade students.

The researchers conducted a repeated measures MANOVA to determine if differences existed between the students' grade-level and achievement-levels and their self-efficacy, outcome expectancy, and causal attribution beliefs for reading and writing. Significant main effects were found for grade level, *Wilks's* Λ = .56, Rao's $F(36,676) = 6.37$, $p < .001$, and achievement-level, *Wilks's* Λ = .71, Rao's $F(36,676) = 3.59$, $p < .001$, on the students' beliefs.

Pairwise multivariate tests indicated significant differences between fourth and seventh grade students, *Hotelling's* T^2 = .52, $F(18,197) = 5.69$, $p < .001$, fourth and tenth grade students, *Hotelling's* T^2 = .99 $F(18,234) = 12.90$, $p < .001$, and seventh and tenth grade students, *Hotelling's* T^2 = .19, $F(18,240) = 2.57$, $p < .001$. Pairwise comparisons with Bonferroni adjusted *p* values were conducted for each of the grade levels. Pairwise comparisons between fourth and seventh grade students revealed significant differences ($p < .006$) existed in their levels of reading task efficacy (seventh grade, $M = 4.63$; fourth grade, $M = 4.26$), intelligence (fourth grade, $M = 4.12$; seventh grade, $M = 3.67$) as an attribution of reading success, writing task efficacy (seventh grade, $M = 4.53$; fourth grade $M = 4.31$), and effort (fourth grade $M = 4.64$; seventh grade $M = 4.26$) as an attribution of writing success. Pairwise comparisons between fourth and tenth grade students revealed significant differences ($p < .006$) in their levels of reading task efficacy (tenth grade $M = 4.84$; fourth grade $M = 4.26$), intelligence (fourth grade, $M = 4.12$; tenth grade, $M = 3.66$) and luck (fourth grade, $M = 2.60$; tenth grader $M = 2.07$) as attributions of reading success, writing task efficacy (tenth grade, $M = 4.70$; fourth grade, $M = 4.31$), effort (fourth grade, $M = 4.64$; tenth grade, $M = 4.26$), and luck (fourth grade, $M = 2.55$; tenth grade, $M = 2.01$) as an designations of writing success. Pairwise comparisons between seventh and tenth grade students revealed that significant differences ($p < .025$) existed in their levels of reading task efficacy (tenth grade, $M = 4.84$; seventh grade; $M = 4.63$), and writing task efficacy (tenth grade, $M = 4.70$; seventh grade, $M = 4.53$).

Pairwise multivariate tests indicated significant differences between low and average achievement groups, *Hotelling's* T^2 = .20, $F(18,241) = 2.73$, $p < .001$, low and high achievement groups, *Hotelling's* T^2 = .69, $F(18,189) = 7.21$, $p < .001$, and average and high achievement groups, *Hotelling's* T^2 = .18, $F(18,241) = 2.47$, $p < .001$. Pairwise comparisons with Bonferroni

adjusted *p* values were conducted for achievement levels. Pairwise comparisons between low and average achievement levels revealed significant differences ($p < .005$) existed in their levels of reading skill efficacy ($M = 3.73$, $M = 3.99$), task difficulty ($M = 2.84$, $M = 2.33$) and teacher help ($M = 3.64$, $M = 3.12$) as attributions of reading success, writing skill efficacy ($M = 3.94$, $M = 4.20$), luck ($M = 2.67$, $M = 2.15$), and teacher help ($M = 3.60$, $M = 3.10$) as attributions of writing success. Pairwise comparisons between low and high achievement levels revealed significant differences ($p < .003$) existed in their levels of reading task ($M = 4.47$, $M = 4.76$) and skill ($M = 3.73$, $M = 4.26$) efficacies, reading outcome expectancy($M = 4.39$, $M = 4.16$), intelligence ($M = 4.12$, $M = 3.58$), luck ($M = 2.59$, $M = 1.87$), task difficulty ($M = 2.84$, $M = 2.01$), and teacher help ($M = 3.64$, $M = 3.13$) as attributions of reading success; writing task ($M = 4.39$, $M = 4.69$) and skill ($M = 3.94$, $M = 4.46$) efficacies, writing outcome expectancy ($M = 4.24$, $M = 3.94$), and luck ($M = 2.67$, $M = 1.85$), task difficulty ($M = 3.06$, $M = 2.37$), and teacher help ($M = 3.60$, $M = 3.14$) as attributions of writing success. Pairwise comparisons between average and high achievement levels revealed significant differences ($p < .006$) existed in their levels of reading task ($M = 4.60$, $M = 4.76$) and skill ($M = 3.99$, $M = 4.26$) efficacies, writing task ($M = 4.53$, $M = 4.69$) and skill ($M = 4.20$, $M = 4.46$) efficacies.

Canonical analyses for each grade level and achievement group were conducted to determine the change in relationship between beliefs and achievement changed. Statistical relationships resulted for the following groups: tenth grade, linear ($p = .04$) and quadratic ($p = .001$); high achievement group, linear ($p < .001$) and quadratic ($p < .001$); average achievement group, linear ($p < .001$) and quadratic ($p < .001$); and the low achievement group, linear ($p < .001$) and quadratic ($p < .001$). Correlations greater than .40 between the achievement variables of reading comprehension and vocabulary, writing score, language mechanics and expression,

and spelling occurred for fourth and tenth grade students, and all three achievement groups. Spelling and language mechanics correlated below .40 for seventh grade students while the other variables exhibited higher correlations. Reading and writing task and skill efficacies positively correlated (r = .24 - .71) with each of the grade levels. Luck, task difficulty, and teacher help as attributions for success in reading and writing were negatively correlated with each grade level. Similarities in canonical relations were exhibited by low and average achievement groups but varied with high achievement groups.

Shell et al. (1995) reported that task self-efficacy increased with grade level. No significant differences were found between grade levels and enjoyment, task difficulty, and teacher help as causal attributions for successes in reading and writing. No canonical correlations occurred between the dependent variables of reading and writing achievement and the independent variables of self-efficacy, attribution, and outcome expectancy beliefs for fourth and seventh grade students.

Both internal and external causal attributes attributed to students' academic successes and failures. Causal attributions were found to affect academic achievement as students progressed from elementary to secondary school and varied in achievement level. Academic domain differences were found to change as students increased in grade level for all achievement levels.

Swinton, Kurtz-Costes, Rowley, and Okeke-Adeyanju (2011) conducted a longitudinal study to determine if gender, developmental differences as identified by grade level, and differences amongst causal attributions with the academic domain differences, within the areas of English, writing, mathematics, and science, exist amongst African American adolescents in grade 8 and again in grade 11. They also sought to investigate if relationships existed between the causal attributions of success and failure and the students' level of classroom engagement.

The sample (n = 115) of students consisted of 49 boys and 66 girls of mostly low socioeconomic status living in the Southeast and who attended either of three rural or urban high schools consisting mostly of African American students. Participating students were contacted first in the 8th-grade and then again in the 11th-grade.

Causal attributions were measured through the administration of a 24-item survey. Students rated effort and ability as reasons for success and failure in the academic domains of English, writing, mathematics, and science. Students' classroom engagement and re-engagement after failure of a task was measured through the administration of a 15-item survey to their 11th grade English (α = .97), and mathematics teachers (α = .96). Academic achievement for both grade 8 and 11 students was determined by averaging their end-of-year grades in English, mathematics, and science, which served as the covariates for statistical analysis.

An ANCOVA was conducted to determine if differences existed between the causal attributions for the academic domains and the students' gender and grade level. Swinton et al. (2011) reported gender as a between–subjects variable, and time (8th- and 11th-grades), attribution (effort, ability), outcome (success, failure), and domain (mathematics, English, science) as within-subject variables. A between subjects analysis revealed that boys in grades 8 and 11 statistically differed ($p < .05$) in the following academic domains and causal attributions: mathematics success ability (grade 8, M = 3.41; grade 11, M = 3.10), mathematics failure ability (grade 11, M = 1.84; grade 8, M = 1.53), mathematics failure effort (grade 11, M = 2.82; grade 8, M = 2.39), English failure effort (grade 11, M = 2.51; grade 8, M = 2.23), and science failure effort (grade 11, M = 2.67; grade 8, M = 2.41). The between subjects analysis revealed that girls in grades 8 and 11 statistically differed ($p < .05$) in the following academic domains and causal attributions: mathematics success ability (grade 8, M = 2.91; grade 11, M = 2.60), mathematics

failure ability (grade 11, M = 2.05; grade 8, M = 1.74), mathematics failure effort (grade 8, *M* = 2.82; grade 11, *M* = 2.77), English failure effort (grade 11, *M* = 2.60; grade 8, *M* = 2.26), and science failure effort (grade 8, *M* = 2.92; grade 11, *M* = 2.80).

An ANOVA was conducted to determine if statistical differences existed between gender, time as represented by grade level, and domain on academic achievement as reported by the students' school grades. Time, $F(1, 74) = 6.87$, $p < .01$, and domain, $F(1, 148) = 4.46$, $p < .05$, were significant main effects with respect to achievement. A significant interaction, $F(1, 148) = 11.66$, $p < .001$ occurred between time and domain achievement on the students' academic achievement.

Correlations were conducted to determine relationships between effort and ability as causal attributions of success and failures for the academic domains of English, mathematics, and science for grades 8 and 11. Ability and effort in Grade 8 students significantly ($p < .01$) correlated with English success ($r = .44$), mathematics success ($r = .34$), and science success ($r = .34$). Grade 8 students' failure ability and failure effort were significantly correlated ($p < .05$) with science failures ($r = .22$). Ability and effort in Grade 11 students significantly ($p < .01$) correlated with English success ($r = .40$), and science failures ($r = .28$).

An ANCOVA was conducted to determine if differences existed between grade level, the academic domains, achievement, and gender in adolescents' attributions. Attribution was a significant main effect, $Fs(1, 110) = 22.01$, $p < .001$, for gender, time, outcome, and domain. There was a significant interaction, $Fs(1, 110) = 16.97$, $p < .001$, between attributions and gender. Swinton et al. (2011) reported that girls attributed successes and failures to effort more than boys while boys attributed outcomes to ability more than the girls did. Multiple significant interactions were reported as a result of the repeated measures ANCOVA. The significant

interaction between time, attribution, outcome, and domain, $F(2, 109) = 5.12$, $p < .01$ was the most pertinent to this research study. Mathematics success ability attribution decreased while mathematics failure ability attributions and mathematics and English failure effort attributions increased for students who progressed from grades 8 to 11.

A hierarchical regression was conducted to determine if the students' views of causal attributions were predictors of their classroom engagement in English or mathematics. Mathematics failure ability was a significant predictor of classroom engagement in math, $F(5,38) = 2.70$, $p < .05$, for grade 11 students. No other causal attributions were significant predictors of grade 8 or 11 students' classroom engagement in English and mathematics. The perceptions of grade 8 students' mathematics failure as a result of a lack of ability was a significant predictor ($p < .01$) of classroom engagement for mathematics, ($\beta = -.47$) in grade 11 students.

Swinton et al. (2001) reported that mathematics failure as a result of a lack of ability was viewed more negatively in grade 11 male and female African American students than in those from grade 8. Students in grades 8 and 11 differed in their views on ability and effort as causal attributions for academic success and failure in English, mathematics, and science. Gender differences existed amongst the students and their causal attributions towards certain content areas. Females were less likely to attribute successes in math to high ability while males were more likely to attribute failures in English to low ability.

Causal attributions were viewed by both males and females as factors affecting students' academic achievement as they progressed through secondary school. The internal causal attributes of ability and effort were shown to affect students' academic achievement.

A Perspective of Underachievement

Underachievement of high school students has been studied most often amongst the identified gifted population. The causes of academic underachievement in gifted students are

multifaceted (Reis & McCoach, 2000; Siegle & McCoach, 2001). Underachievement in gifted students has been the result of: excessive absences from school (Reis, Colbert, & Hébert, 2005;) poor academic performance (Reis et al., 2005) undiagnosed learning disabilities (Baum et al., 1994; Seeley, 2004), an existing disconnect between the student, the curriculum, and teaching styles (Baum et al., 1994; Berube & Siegle, 1995; Siegle & McCoach, 2009), disruptive school and classroom behaviors (Reis et al., 2005), low self-esteem and other emotional issues (Baum et al., 1994; Reis et al., 2005; Seeley, 2004), family problems (Berube & Siegle, 1995; Reis, Colbert, & Hébert, 2005), negative community experiences (Berube & Siegle, 1995;), poverty (Seeley, 2004; Siegle & McCoach, 2009), and peer pressure (Baum et al., 1994; Berube & Siegle, 1995; Reis & McCoach, 2000). Berube & Siegle (1995) identified a lack of value placed on academic excellence and achievement by gifted underachievers as a result of being called defamatory names or being labeled as a "nerd" (p. 1) by their peers. Negative interactions with teachers and a sense of undervaluation by teachers are also factors which cause gifted students to underachieve (Berube & Siegle, 1995; Perry, 2008).

Gifted students lacking motivation to excel in school risk academic underachievement (Perry, 2008). Underachievement can be induced when self-efficacy, the ability to self-regulate, motivational interest, goal valuation, and setting influence motivational levels creating a sense of apathy and learned helplessness (Bandura, 1982, 1991; Dweck, 1986). Seeley (2004) stated the basis for understanding underachievement has been made clearer by the linkage between goals, learning, and motivation.

Self-efficacy goal valuation, motivation/self-regulation, and environmental perceptions as motivational constructs have been studied in gifted high school students as factors affecting their underachievement (Emerick, 1992; McCoach & Siegle, 2001; McCoach & Siegle, 2001, 2003a;

Peterson & Colangelo, 1996; Siegle et al., 2011). Because limited research has been conducted studying factors affecting the underachievement of regular education high school students, this review includes studies where findings show statistical significance amongst factors affecting underachievement in gifted high school students to ground this study in research and methodology.

Research on the Underachievement of High School Students

The following studies by McCoach and Siegle (2001) and Siegle et al. (2011) were selected for inclusion in this review because the authors investigated factors affecting academic achievement. The *School Attitude Assessment Survey-Revised* (SAAS-R) was been used to collect quantitative data about the students' attitudes towards school, attitudes towards teachers and classes, goal-valuation, motivation, and general academic self-perceptions. This current research study and those used in this review of the literature are grounded in motivation theory and sampled high school students about their perceptions of academic achievement.

McCoach and Siegle (2001) designed a study to compare student achievement status and students' attitudes towards the five student attitude factors within the SAAS-R: attitudes towards school, attitudes towards teachers and classes, goal-valuation, motivation, and general academic self-perceptions. Their purpose was to determine which of these factors might be a predictor of student achievement status.

Students in grades 9 to 12 (n = 244), from a mostly white suburban Northeastern high school, volunteered to participate in the study. The subjects were identified as high achievers (n = 96) and low achievers (n = 148) based on a self-reported GPA. A minimum self-reported GPA of 3.75 identified a high achiever while a self-reported GPA below a 2.5 identified a low achiever.

Hotelling's multivariate *t*-test revealed statistical significance ($p < .001$) when comparing high and low achievers as determined by the students' self-reported GPA for all five of the student attitude factors: attitudes towards school, attitudes towards teachers and classes, goal-valuation, motivation, and general academic self-perceptions. Follow up procedures revealed a significant difference between high and low achievers for each of the five subscale factor scores ($p < .001$) after using a Bonferroni adjustment.

McCoach and Siegle (2001) reported high achievers had significantly higher mean scores as compared to low achievers in each of the five subscale factor scores. They also reported large effect sizes for these comparisons, in two-factor logistical regression models, Cox and Snell R^2 =.46, and the Nagelkerke R^2 = .63, indicating that academic self-perceptions and motivation/self-regulation as predictor variables of student achievement status. These results explained a large amount of variance within the model, correctly classifying 89% of low achievers and over 81% of high achievers.

Academic self-perceptions and motivation/self-regulation were the only two significant predictors of student achievement status indicating that they were stronger predicator variables for student achievement status than attitudes towards school and teachers, and goal-valuation. Causality could not be made between the suggested results for those students who possessed high self-perceptions and self-motivation/self-regulation. Correlational studies would need to be conducted to determine causality for those factors affecting achievement.

Siegle et al. (2011) designed another study to compare teachers', parents', and gifted underachieving students' personal perception of factors associated with student achievement. The SAAS-R (McCoach, 2002) was administered to 260 gifted students to analyze their perception of five factors that affect student achievement: environmental attitudes, goal-

valuation, motivation, and general academic self-perceptions. Two hundred and fifteen teachers and 128 parents were each administered different instruments to measure their perceptions of self-efficacy, goal valuation, motivation/self-regulation, and environmental perceptions as factors affecting student achievement.

Correlations were conducted between scores for all three groups across all subscale values. Significant correlations were reported between teachers' and students' perceptions of self-efficacy ($r = .464$, $p < .01$), environmental attitudes ($r = .321$, $p < .01$), self-regulation ($r = .401$, $p < .01$), and goal valuation ($r = .210$, $p < .01$). Significant correlations were also reported for students' and parents' perceptions of self-regulation ($r = .587$, $p < .01$), goal valuation ($r = .467$, $p < .01$), and environment attitudes ($r = .441$, $p < .01$). Lastly, significant correlations were reported between parents' and teachers' perceptions on environmental attitudes ($r = .325$, $p < .01$), self-regulation ($r = .357$, $p < .01$), and goal valuation ($r = .355$, $p < .01$).

Siegle et al. (2011) reported awareness by parents and teachers of gifted underachieving students' lack of self-efficacy. Parents and teachers were not accurate in their judgment about their students' beliefs in the meaningfulness of school and their goal valuation. Students' and parents' perceptions were more closely related than those of students and teachers implying that students and parents possess similar views of achievement than students and their teachers.

The Novice and Expert Teacher Experience: The Differences Within the Classroom

Research conducted on teacher experience has categorized teachers into two groupings, novice and expert teacher, which have been studied to determine if differences exist between classroom practices and experiences. Kukla-Acevedo (2009) defined teacher experience as the number of years an individual has been teaching. Criteria distinguishing a novice and expert teacher have varied amongst studies. Novice teachers have been identified as either a pre-service

teacher (Carter, 1990; Covino & Iwanicki, 1996; Hogan & Rabinowitz, 2009; Meyer, 2004), a teacher with less than one full year of teaching experience, or a teacher having no more than three years of classroom experience (Covino & Iwanicki, 1996; Meyer, 2004; Tschannen-Moran & Hoy, 2007). Expert teachers have been identified as having a minimum of four to 10 years of teaching experience (Carter, 1990; Covino & Iwanicki, 1996; Hogan & Rabinowitz, 2009; Hogan et al., 2003; Meyer, 2004; Tschannen-Moran & Hoy, 2007).

A review of the literature conducted by Carter (1990) and Hogan, Rabinowitz, and Craven (2003) found that novice and expert teachers varied in curricular and content knowledge, pedagogy, and instructional and organizational behaviors within the classroom which affect student achievement. "The influence of experience on teacher knowledge can only be determined by comparing experienced with non-experienced or novice teachers" (Beijaard, Verloop, & Vermunt, 2000, p. 753) to determine if changes in teachers' behaviors, attitudes, and practices change over time. Specifically, novice and expert teachers have been shown to vary in their abilities to plan the curriculum and provide its instruction; conduct classroom demonstrations frequently; interpret student feedback pertaining to instruction; manage the classroom and teaching routines; recall and reflect on classroom events; and maintain an effective classroom environment (Hogan et al., 2003).

Research on Teacher Experience: The Novice and Expert Teacher Experience

The studies selected for this literature review investigate differences in teacher beliefs, experiences, behaviors, and practices by categorizing teachers as novice and expert teachers. The results of each study include the differences found between novice and expert teachers' classroom experiences. The variations in teachers' beliefs, experiences, behaviors, and practices can affect students' academic achievement. The following findings will be used to support

emerging qualitative themes for causes of and resolutions of high school students' underachievement relating to teacher beliefs, experiences, behaviors, and classroom practices.

Covino and Iwanicki (1996) conducted a study to identify and validate the behaviors of effective experienced teachers. Beginning teachers (n = 310) were identified as having completed fewer than four years of teaching, while experienced teachers (n = 1345) were identified as having completed four or more years of teaching. The researchers created two surveys using a two-round modified Delphi panel to construct two survey questionnaires to determine the teaching behaviors associated with teaching effectiveness. The *Principal-Component Analysis with Varimax Rotation* was used to examine the factor structure of the instrument. It identified the constructs within the data to explain the variance amongst teaching behaviors. An analysis of Survey One data resulted in 10 teacher behaviors with reported alpha reliabilities ranging from .73 to .92 allowing for the establishment of construct validity. An analysis of Survey Two data resulted in 11 teacher behaviors with alpha reliabilities ranging from .70 to .87, establishing construct validity for teacher effectiveness.

Covino and Iwanicki (1996) determined 21 teaching behaviors that both beginning and experienced teachers believed to be of importance for effective teaching. The following behaviors were deemed important by both novice and expert teachers: monitors students' understanding during instruction; uses high-interest lessons; communicates to all students the expectation that they are to achieve their best; adapts teaching to students' learning styles; motivates students effectively; provides opportunities for problem solving; uses homework effectively; uses a variety of instructional materials and techniques; encourages students to take responsibility for their learning; and uses appropriate information to asses students' learning needs; shares and uses teaching knowledge and skills with colleagues; judges lesson

effectiveness by cuing on student performance and behavior; employs effective class-management techniques; analyzes and seeks to improve own teaching; employs knowledge of students and subject to facilitate student learning; maximizes instructional time; extends the subject matter; plans lesson parameters; plans content and activities for lesson; communicates with parents of students; and stresses student accountability.

Teacher experience was quantitatively analyzed by Tschannen-Moran & Hoy (2007) to determine if differences existed amongst the self-efficacy beliefs of novice and experienced teachers. The sample consisted of 255 novice teachers (n = 74), having three or fewer years of teaching experience, and experienced teachers (n = 181), having four or more years of teaching experience. Participants completed the *Teachers' Sense of Efficacy Scale* (TSES) (α = .93) which tested the following factors, perceptions of support and satisfaction with professional performance, demographics, and information about teaching context.

Correlations were conducted between novice and experienced teachers' self-efficacy and demographic data. Gender, race, teaching experience, age, teaching setting, and school level were not significantly related to the novice teachers' sense of self-efficacy. Novice teachers' self-efficacy was most strongly related ($p < .05$) to teaching resources (r = .32), while their satisfaction with professional performance was related ($p < .01$) to support from parents (r = .39) and community (r = .37), respectively. There was a statistical relationship (p = .01) between school level and experienced teachers (r = .21). The data resulted in a weak relationship ($p <$ .05) between experienced teachers' self-efficacy and the support and involvement of parents (r = .15), resources support (r = .17), and community support (r = .19). Experienced teachers reported strong relationships ($p < .01$) between satisfaction with professional performance and interpersonal support from administration (r = .35), colleagues (r = .33), parents (r = .25),

community (r = .38), while a weaker relationship (p < .05) existed for teaching resources (r = .17). Professional performance was moderately related (p < .01) to novice (r = .46) and experienced (r = .36) teachers and their self-efficacy.

T-tests were conducted to analyze the teacher self-efficacy data. Tschannen-Moran & Hoy (2007) reported experienced teachers scored significantly higher (p < .01) than novice teachers in their over-all self-efficacy, (M = 7.29, M = 6.87), respectively. Statistical differences (p < .05) between experienced (M = 7.58) and novice (M = 6.99) teachers were reported for the instructional strategies and the classroom management (experienced, M = 7.61; novice, M = 7.03) subscales. A statistical difference (p < .05) resulted between experienced teachers (M = 6.20) and novice teachers (M = 5.98) in having more teaching resources. Experienced teachers (M = 6.54) scored significantly higher (p < .05) in the reporting of interpersonal support from administration than did novice teachers (M = 5.97). Satisfaction with performance was significantly higher (p < .01) in experienced teachers (M =7.55) than for novice teachers (M = 6.94). There were no reported significant differences between experienced and novice teachers for the following variables: resource support subscales; perceptions of interpersonal support from colleagues, parents, and the community.

Tschannen-Moran and Hoy (2007) conducted a multiple regression procedure in which they reported that 31% of the variance in novice teachers' sense of efficacy was explained with the combination of demographic, context, and verbal persuasion variables and 49% of the variance for novice teachers was explained when mastery experiences were added. A significant variance in teachers' self-efficacy and the demographic variables was not reported. Novice teachers were found to have lower overall self-efficacy (M = 6.87) than experienced teachers (M = 7.29). Experienced teachers had a higher self-efficacy for instructional strategies and

classroom management. Race and gender had no effect on the self-efficacy of both novice and experienced teachers.

Findings relating to instructional, resource, parental, and community support will be compared to the teachers' qualitative responses.

Chapter Summary

This review of literature has grounded this study in motivation and attribution theories, underachievement, as well as the construct of teacher experience. Seminal works and research support the use of motivation and attribution theories within the present study. Underachievement literature concerning high and low achievers was used to ground this study which will include the comparison of Non-Honors/AP and Honors/AP students. Teacher experience was defined and categorized to highlight the differences that exist within the classroom between the novice and expert teacher.

Research Questions

The following four research questions will guide the methodology of this research study.

1. Is there a significant difference between high school students' academic program (Non-Honors/AP, Honors/AP level) and gender with respect to students' school attitudes about achievement that include academic self-perceptions, attitudes towards teacher and classes, attitudes toward school, goal valuation, and motivation/self-regulation?
2. To what degree and in what manner do students' gender, and school attitudes about achievement that include academic self-perceptions, attitudes towards teachers and classes, attitudes towards school, goal valuation, and motivation/self-regulation predict high school students' self-reported academic achievement?

3. Is there a significant difference between high school teachers' experience as educators (early, middle, and late career) with respect to their perceptions of factors associated with student achievement that include academic self-efficacy, environmental perception, goal valuation, and self-regulation?
4. What are high school teachers' and students' perceptions of the causes and solutions of underachievement?

CHAPTER THREE:

METHODOLOGY

This chapter was designed to discuss the methodology explored using this research study. A thorough and detailed description of the methodology has been provided to establish this study's reliability, validity, credibility, transferability, dependability, and confirmability. The following sections were included to describe the processes and procedures followed to conduct this study. The researcher's biography will provide background information on the researcher to reduce bias. The research questions and hypotheses guiding this study are then explicitly stated followed by the discussions of the participants, setting, and sampling procedures. The research design and a description of the analyses are described along with the instrumentation utilized in this study. Survey administration procedures, data collection procedures, and this study's timeline are then discussed. Finally, the limitations of the study are detailed and addressed. All of these sections were included for future replication of this study.

Researcher Biography

The researcher is a 13th-year science teacher in the district where the study was conducted. She began her teaching career at the same high school in which the study was conducted and taught students there in grades 10 – 12 for five years. She, then, transferred to the local junior high where she taught ninth grade for four years until this school was converted into a second campus of the original high school. She has been teaching ninth and twelfth graders at this second high school campus for three years. Throughout her years teaching high school students, she observed that students passed some classes, such as her science course, were not always passing their other courses. She found this to be very perplexing influencing her decision

to investigate factors affecting high school students' academic achievement as part of this research study.

Research Questions and Hypotheses

This study was exploratory in nature due to a lack of research about regular education high school students' and their teachers' perceptions of factors affecting academic achievement resulting in the selection of non-directional hypotheses. By using a systematic approach, this study addressed the following questions.

1. Is there a significant difference between high school students' academic program (Non-Honors/Non-AP, Honors/AP level) and gender with respect to students' school attitudes about achievement that include academic self-perceptions, attitudes towards teacher and classes, attitudes toward school, goal valuation, and motivation/self-regulation?

   Non-directional hypothesis: There will be a significant difference between high school students' academic program (Non-Honors/Non-AP, Honors/AP level) and gender with respect to students' school attitudes about achievement that include academic self-perceptions, attitudes towards teacher and classes, attitudes toward school, goal valuation, and motivation/self-regulation.
2. To what degree and in what manner do students' gender, and school attitudes about achievement that include academic self-perceptions, attitudes towards teachers and classes, attitudes towards school, goal valuation, and motivation/self-regulation predict high school students' self-reported academic achievement?

Non-directional hypothesis: Students' gender and school attitudes about achievement will be significant predictors of high school students' self-reported academic achievement (GPA).

3. Is there a significant difference between high school teachers' experience as educators (early, middle, and late career) with respect to their perceptions of factors associated with student achievement that include academic self-efficacy, environmental perception, goal valuation, and self-regulation?

   Non-directional hypothesis: There will be a significant difference between high school teachers' experience (early, middle, and late career) with respect to their perceptions of factors associated with student achievement that include academic self-efficacy, environmental perception, goal valuation, and self-regulation.

4. What are high school teachers' and students' perceptions of the causes and solutions of underachievement?

Participants

The proceeding sections seek to describe the setting, subjects, and sample procedures utilized in this study.

Setting

The study was conducted in a culturally and socioeconomically diverse suburban high school in the Northeast. The district serves approximately 11,644 students within grades PreK-12 and includes a total of 12 schools: six elementary schools, three K-8 schools, two middle schools, and one high school comprised of two separate campuses. The two high school campuses, an elementary school, a K-8 school, and a middle school all reside within the city municipality. All other schools reside in the three neighboring town municipalities. More than

100,000 residents live within the four municipalities served by this school district with 29,026 people residing within the city limits. The median household income for city residents is $37,671 while the median household income for residents in a neighboring town municipality is $74,753 (http://quickfacts.census.gov/qfd/states/36/3650034.html).

Description of the Participants

The accessible student population selected to participate in this study attended the high school campus in which the researcher was not a teacher on the faculty. Table 1 illustrates the percentage of students in each grade level for the accessible student population.

Table 1

Student Enrollment at Each Grade Level of the Accessible Population

Grade	Frequency	Percent
9	753	29.8
10	652	25.8
11	569	22.5
12	546	21.6
US	5	.2
Total	2525	100.0

Note. US = Unspecified grade level

The accessible student population was racially/ethnically diverse. The student racial/ethnicity demographics within the entire district are: 29.9% Caucasian, 42.1% Hispanic/Latino, 25.3% African American, 2.2% Asian, 0.2% American Indian or Alaskan Native, and 0.3% multiracial. The number of male and female students within the accessible

population is presented in Table 2 while the number of students receiving free or reduced lunch is presented in Table 3. The ages of this student population ranged from 13-21.

Table 2

Gender of Accessible Student Population

Gender	Frequency	Percent
F	1232	48.8
M	1293	51.2
Total	2525	100.0

Table 3

Accessible Student Population Receiving Free/Reduced Lunch

Lunch Program	Frequency	Percent
Free	1266	50.1
Reduced	279	11.0
Neither	980	38.8
Total	2525	100.0

Student participants were classified in three academic programs, Non-Honors/Non-AP, Honors/AP, and a Hybrid Academic Program for data analyses. Placement into each academic program was determined by the students' enrollment or lack of enrollment in Honors level and Advanced Placement courses as reported in the demographic data collected from the *High School Students' View on Doing Well in School*. A self-reported GPA of an 83% or higher was an additional criterion for classification into an Honors level program. Students' self-reported

their GPA by selecting an appropriate category of possible scores rather than recording their actual GPA as part of a continuous scoring system. The reporting of the GPA via a range of scores accounted for the 5-point curve allotted to students' enrolled in Honors and/or Advanced Placement courses, as per the school district's policy. This curve prevented students' cumulative GPA from declining as they completed difficult course work within the Honors and/or Advanced Placement courses. Tables 4 and 5 report the students' academic program by gender and race/ethnicity. These data were used to describe the sample and were not used for analysis purposes.

Table 4

Student Demographic Information for the Cleansed Sample with Respect to Gender and Academic Program

Gender	Non-Honors/ Non-AP[a]	Honors/ AP[b]	Hybrid Academic Program[c]	Total
Female	92	108	88	288
Male	71	54	62	187
Total	163	162	150	475

a. Non-Honors/Non-AP: Students were not enrolled in any Honors or Advance Placement level courses.
b. Honors/AP: Students met the established criterion for course enrollment and/or GPA for identification as an Honors and Advance Placement level student.
c. Hybrid Academic Program: Students were enrolled in Honors or Advanced Placement level courses but did not meet the established criterion, as per the key terms, for placement in the Honors or Advanced Placement academic program.

Table 5

Student Demographic Information for the Cleansed Sample with Respect to Race/Ethnicity and Academic Program

Race/Ethnicity	Non-Honors/Non-AP[a]	Honors/AP[b]	Hybrid Academic Program[c]	Total
Caucasian	30	91	23	144
African American	33	8	13	54
Hispanic/Latino	70	23	23	116
Multiracial	17	9	6	32
Other	6	19	3	28
Total	156	150	68	374

a. Non-Honors/Non-AP: Students were not enrolled in any Honors or Advance Placement level courses.
b. Honors/AP: Students met the established criterion for course enrollment and/or GPA for identification as an Honors and Advance Placement level student.
c. Hybrid Academic Program: Students were enrolled in Honors or Advanced Placement level courses but did not meet the established criterion, as per the key terms, for placement in the Honors or Advanced Placement academic program.

Teacher participants were selected from a sample of convenience of 209 high school teachers who provide instruction at the same high school campus the student participants attended for the 2012-2013 school year. The teacher population consisted of 115 female and 94 male teachers varying in content areas taught, grade levels taught, and years of teaching experience. The teacher racial/ethnicity demographics within the school are: 85.1% Caucasian, 7.7% Hispanic/Latino, 6.7% African American, and 0.5% Asian. The teacher racial/ethnicity demography are not representative of the student population. Tables 6 and 7 contain the demographic data for the accessible teacher population.

Table 6

Ethnicity and Gender of Accessible Teacher Population

Ethnicity	Female	Male	Total
Asian	-	1	1
Caucasian	98	80	178
Hispanic/Latino	11	5	16
African American	6	8	14
Grand Total	115	94	209

Table 7

Departmental Information of Accessible Teacher Population

Content Areas	Frequencies
Athletic Trainer	1
Attendance	2
Art/Music	16
Career and Technical Education	17
Clinic	4
Educational Technology	2
English	26
English as a Second Language	3
Guidance	9
Health/Physical Education	13
History/Social Studies	21
Library	2
Mathematics	27
Psychologist and Social Worker	2
ROTC	2
Science	27
Special Education	21
Teaching Assistants	4

(continued)

Table 7

Departmental Information of Accessible Teacher Population

Content Areas	Frequencies
World Languages	10
Total	209

Data collected about the teachers' number of years teaching from the *High School Teachers' Views on High School Students Doing Well in School* demographic questions was utilized to classify teachers into the three levels of teacher experience (early, middle, late). Teachers who taught for 10 years or less were classified as early experience teachers. Those who had between 11 and 20 years of teaching experience were identified as middle career teachers. Finally, teachers who had taught for 21 or more years were identified as late career teachers.

These three teacher experience groupings were created based on the typical length of a teaching career leading to retirement in the Northeastern state in which the study was conducted. The criterion for determining the number of years taught by early, middle, and late career teachers was also affected by the recent economic crisis of the district in which the study was conducted which resulted in a limited number of new teacher hirers at the high school, retired high school teacher positions lost to attrition, and teacher layoffs. In this Northeastern state, those with the least amount of seniority are laid off first. These conditions created an equal amount of novice and experienced teachers, when utilizing the criterion established in the review of the literature for teacher experience, would skew the data and its results. To avoid this occurrence, three teacher experience groups were created to distribute the number of teachers at each level across the typical length of a Northeastern teaching career.

Sampling Procedures for Teachers. During a faculty meeting, teachers were asked by the researcher to voluntarily participate in the teacher portion of the study. Guidance counselors, school nurses, librarians, the school psychologist, school social worker, educational technology teachers, in-school suspension teachers, the athletic trainer, teacher's assistants, and a special education coordinator were unable to volunteer their participation in the study because the instruments required that the teachers provide daily instruction to students; thus, reducing the accessible population to 181 high school teachers, of which 143 provided their consent to participate in the study and subsequently completed the surveys as seen in Table 8.

Table 8

Teacher Sampling Data

Accessible[a] Population	Eligible[b] to Participate	Sample[c] Population	Percentage of Accessible Population
209	181	143	68.4%

a. Accessible Population: Total number of faculty members excluding the administrators;
b. Eligible to Participate: Eligible teachers provided daily instruction to students;
c. Sample Population: Those teachers who attended the mandatory faculty meeting.

All social studies teachers who were present at the faculty meeting were asked to volunteer their time and classes to distribute letters to students and their parents describing the study. The 21 teachers within this department were asked to participate because they easily integrated the completion of the survey by students within one of their social studies lessons on civil responsibility and about the freedoms to participate in government and policy change. As a result, 12 social studies teachers volunteered their classes for participation in the study.

Teachers who could not participate in this research study because they did not teach students and were not in possession of a student roster were asked complete a non-participatory form explaining their lack of involvement (see Appendix C).

Sampling Procedures for Students. Student participants were selected from a sample of convenience of 2,525 high school students at a particular high school campus for the 2012-2013 school year. Two hundred and eighty-nine special education students who have an Individual Education Plan (IEP) were excluded from the sample population reducing the sample of convenience to 2,236 regular education students. Since the actual student accessible population was dependent on the number of social studies teachers who volunteered to facilitate the distribution of consent and assent forms, and the surveys, the accessible regular education high school student population was reduced to 1,306 students after, excluding the 17 IEP students who were enrolled in inclusion classes.

Social studies teachers who volunteered for the study were asked to read a prompt provided by the researcher to all of their classes explaining the study and asking for student participation. A DVD recording of the researcher explaining the study, asking for student participation, and reminding them to return consent and assent forms was played daily for a period of five days to encourage student participation. Consent to participate in the study was granted by 487 parents and assent was received from these students. Refer to Table 9 for a description of demographics for the population and sample with respect to grade level and gender.

Table 9

Student Demographic Information for the Accessible Population and the Sample with Respect to Grade Level and Gender

Grade Level	Gender	Accessible Population	Sample Population	Percentage of Students
9	Female	351	37	10.5%
	Male	402	18	4.5%
	Total	753	55	7.3%
10	Female	324	84	25.9%
	Male	328	59	18.0%
	Total	652	143	21.9%
11	Female	267	94	35.2%
	Male	302	68	22.5%
	Total	569	162	28.5%
12	Female	290	45	15.5%
	Male	256	25	9.8%
	Total	546	70	12.8%
US	Female	0	-	-
	Male	5	-	-
	Total			
Grand Total		2525	430	17.0%

Note. US = unspecified grade level.

Research Design

This research study used a convergent parallel mixed methods research design using causal comparative and correlational methods was utilized to simultaneously conduct a quantitative and qualitative analysis of factors affecting high school students' academic achievement (Creswell & Plano-Clark, 2011). Research question one required a causal comparative research design to compare students' academic program and gender with their quantitative data surveying their attitudes about achievement. Research question two required a correlational research design to predict the students' self-reported GPA using academic program, gender, and other quantitative data related to their school attitudes about achievement. Research question three required a causal comparative research design to assess if there were differences in teachers' years of experience based on their perceptions of the factors associated with student achievement. Research question four utilized a general qualitative study (Caelli, Ray, & Mill, 2003) and was based on qualitative data from teachers and their students about their perceptions of the causes of and resolutions for student underachievement.

The *Student Achievement Inventory: Teacher Form* (Siegle et al., 2011) and the SAAS-R (McCoach, 2002) were administered separately to collect quantitative data on high school students' and teachers' perceptions of the following factors: academic self-perceptions, attitudes towards teachers and classes, attitudes toward school, goal valuation, and motivation/self-regulation that affect academic achievement. The researcher designed parallel qualitative surveys, *High School Teachers' Views on High School Students Doing Well in School* (see Appendix A) and *High School Students' Views on Doing Well in School* (see Appendix B). These inventories were administered separately to collect qualitative data on the causes of high school student underachievement and possible solutions to resolve student underachievement.

Both surveys were administered to students and teachers who had volunteered their participation in the study.

Triangulation was sought between quantitative and qualitative methods used to collect data (Creswell & Plano-Clark, 2011; Gall, Gall, & Borg, 2007; Jick, 1979). Figure 1 demonstrates triangulation as sought through the usage of between methods to establish convergent validation amongst each of the qualitative studies (Jick, 1979).

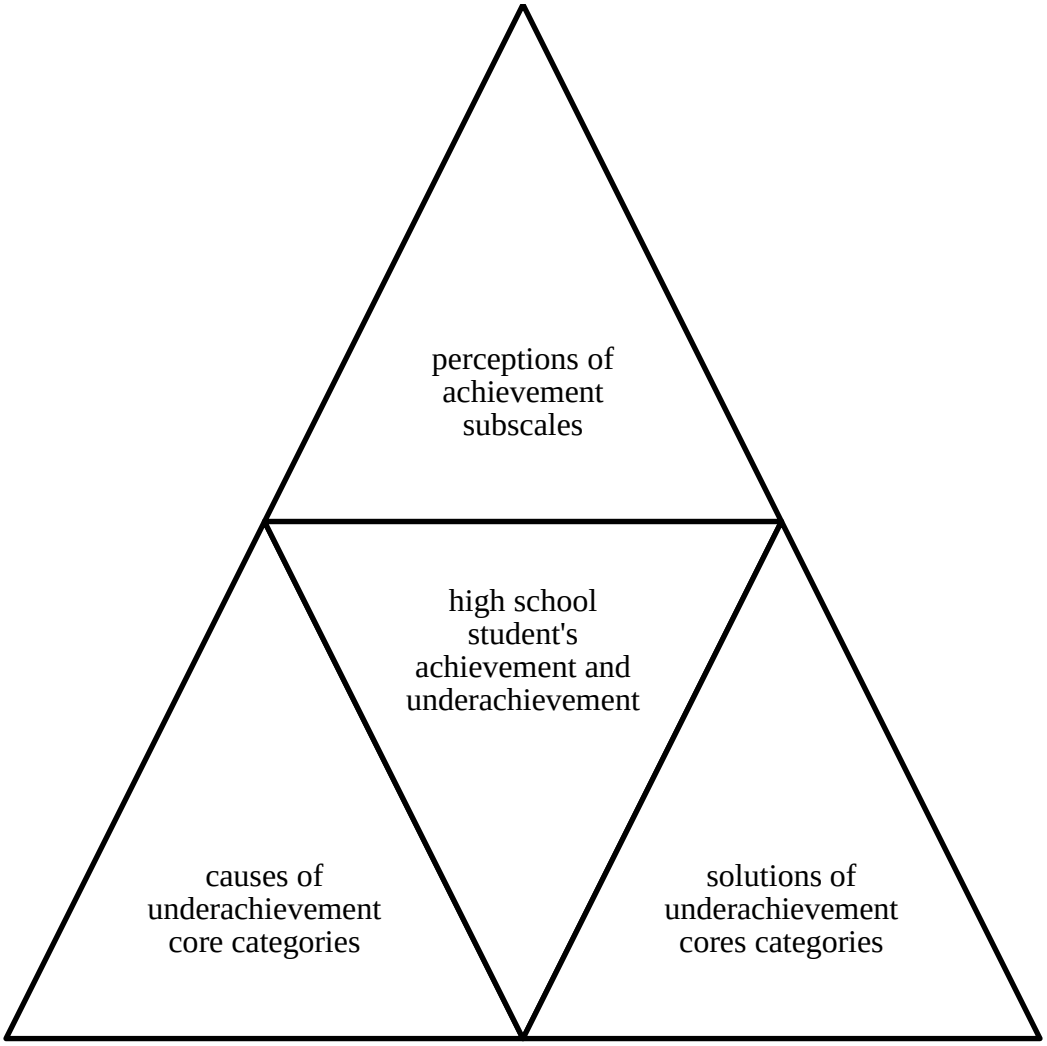

Figure 1

Triangulation of Data Findings

Description of the Analyses

A two-way MANOVA procedure was conducted to determine if the non-directional hypotheses for research question one was supported by the data. SPSS software (SPSS Statistics, 2012) was used to determine statistical significance between the independent variables, academic program (Non-Honors/Non-AP, Honors/AP) and gender, and the five dependent variables (academic self-perceptions, attitudes towards teachers and classes, attitudes toward school, goal valuation, and motivation/self-regulation) associated with student achievement. A Bonferroni adjustment (Huck, 2008) was made to the alpha level because the same dependent variables were used to address research questions one and two. The original alpha level (α = .05) was divided in two creating the newly adjusted alpha level (α = .025) used to determine statistical significance of Wilks's lambda for academic program and gender reducing the occurrence of Type I errors which falsely reject the null hypothesis (Huck, 2008).

A multi-linear regression using a stepwise procedure was conducted to determine if the non-directional hypothesis for research question two was supported by the data. SPSS (SPSS Statistics, Version 21) was used to determine the variance in the model of students' school attitude about achievement (academic self-perceptions, attitudes towards teachers and classes, attitudes towards school, goal valuation, and motivation/self-regulation) and gender as significant predictors of high school students' self-reported academic achievement (GPA).

A one-way MANOVA was conducted to determine if the non-directional hypothesis for research question three was supported by the data. SPSS software (SPSS Statistics, Version 21) was used to determine statistical significance between the independent variable, teacher experience (early, 1 - 10 years; middle, 11 -20 years; late, 20 - 30^{+} years) and the dependent variables, the four factors (academic self-perceptions, environmental perceptions, goal valuation, and self-regulation) associated with teachers' perceptions of student achievement.

A general qualitative study (Caelli et al., 2003) with two groups was enacted to answer qualitative research question four. High school teachers and students were each a respective group. Questions one and two of the qualitative instruments were coded to preserve the perspectives held by the subjects. The qualitative data collected to address research question four were organized into a spreadsheet for analysis and coding development. All data tables and spreadsheets were supplied to an external auditor for evaluation providing credibility to the study.

The auditor was provided with the purpose of the study, all research questions, the review of the literature, and methodology to understand the context of the study for which the data were collected to establish coherence of the findings (Caelli et al., 2003; Toma, 2006). A code book for all qualitative codes generated by the data explaining the meaning of each code was provided for use while auditing the data. Random clusters of data points would be selected by the external auditor to determine the appropriateness and consistency in the coding of the qualitative data. Inter-rater agreement for 65 segments of student data resulted in 100 % agreement for open codes. A review of the data analysis and its interpretation was conducted by the auditor to insure the credibility of all findings (Carcary, 2009; Shenton, 2004).

Overview of the Coding Process.

Theoretical comparisons (Corbin & Strauss, 2008) were made to determine the teachers' and students' perspectives (Miles & Huberman, 1994) on what causes high school students' underachievement and their possible solutions (Miles & Huberman, 1994) for resolving the students' academic underachievement. The comparison of responses allowed for the development of an understanding of teachers' views of their students' academic underachievement through the development of categorical codes.

All teacher responses were assigned codes for data analysis. The codes served as indicators of assigned meaning to the data (Miles & Huberman, 1994). Open codes (Corbin & Strauss, 2008), were assigned to each individual teacher and student response. These open codes broke apart the data into individual concepts (Corbin & Strauss, 2008). The open codes were generated by a line-by-line analysis of the teachers' and students' responses to each question. A total of 997 open codes were generated from 999 teacher responses while 1298 open codes were generated from the same number of student responses.

Axial codes were developed from the related concepts within the open codes. The axial codes unified the teachers' ideas by narrowing the conceptual framework present. These codes were then assigned attribution codes. The seven attribution codes of internal, external, internal: may be the result of a learning disability, internal affecting external, external: needs to be initiated by the student, and neither internal nor external were attribution concepts found in the teacher data. The presence of these attribution and axial codes allowed for the generation of thematic categories.

The thematic categories emerged from the grouping of axial codes based on contextual similarities and attribution codes. These categories were than analyzed for theoretical and conceptual likenesses allowing them to be further refined to generate core categories. Each core category unified the thematic, attribution, and axial codes developed from the data.

Instrumentation

The following sections discuss the quantitative and qualitative instruments administered to participants for data collection.

School attitude assessment survey-revised (SAAS-R). The SAAS-R (McCoach, 2002) was administered to collect quantitative data on high school students' perceptions. It provided a

valid and reliable measure for factors associated with high school student achievement and underachievement in general education, gifted education, and college preparatory programs (Suldo, Shaffer, & Shaunessy, 2008). McCoach and Siegle (2003b) reported the SAAS-R was designed to measure secondary students' academic self-perception, attitudes towards teachers and classes, attitude towards school, goal valuation, and motivation/self-regulation. It was also designed to measure factors which may separate high school achievers from underachievers (McCoach & Siegle, 2003b).

The SAAS-R consists of 35 statements to which students indicate their degree of agreement from 1 "strongly disagree" to 7 "strongly agree" (Suldo et al., 2008). The five subscales are organized in the following manner: seven statements measure academic self-perceptions, seven questions measure attitude toward teachers and classes, five statements measure attitudes toward school, six statements measure goal valuation, and 10 statements measure motivation/self-regulation. McCoach and Siegle (2003a, 2003b) conducted *t-tests* on each of the five subscales for underachievers and achievers reporting the following range of mean scores: academic self-perception, $M = 5.84 – 6.21$, attitudes towards teachers, $M = 4.58 - 5.41$, attitudes towards school, $M = 4.22 – 5.33$, goal valuation, $M = 5.26 – 6.56$, and motivation/self-regulation, $M = 3.88 – 5.48$.

School attitude achievement survey-revised validity and reliability. The SAAS-R has established validity and reliability. An independent study conducted by Suldo, Shaffer, & Shaunessy (2008) and a study conducted by the instrument creator McCoach and her associate Siegle (2003) determined its validity and reliability as an instrument to measure factors that affect student achievement and as a means of distinguishing underachieving and achieving gifted students. Both studies supported content validity with a reasonable fit for the SAAS-R, SRMR =

.057, CFI = .911 (McCoach & Siegle, 2003b) and SRMR = .04, CFI = .96 (Suldo et al., 2008). Criterion-related validity, convergent validity, and internal consistency reliability were all established for each of the five subscales of the SAAS-R as reported in McCoach and Siegle (2003b) and Suldo et al. (2008).

Student achievement inventory: teacher form. The *Student Achievement Inventory: Teacher Form* (Siegle et al., 2011) was administered to collect quantitative data on high school teachers' perceptions of four factors: teacher environmental perception (*n* = 11), teacher self-regulation (*n* = 11), teacher goal valuation (*n* = 11), and teacher self-perception *(n* = 11) which affect student academic achievement (see Appendix B). The purpose of administrating this instrument was to identify the factors that teachers' perceive influence student achievement within the sample population being studied.

The *Student Achievement Inventory: Teacher Form* (Siegle et al., 2011) was designed to collect teacher perceptional data of factors affecting student achievement. Teachers are asked to choose the 7th student from their student roster or first period class to reference allowing for a random selection of students to be referenced when completing the survey (Siegle et al., 2011). A maximum of 20 minutes was required for the administration of this survey.

The *Student Achievement Inventory: Teacher Form* uses of a Likert-type response scale ranging from 1 "strongly disagree" to 7 "strongly agree" in order for teachers to respond to 44 statements across the four subscales (Siegle et al., 2011). Students were given a maximum of 20 minutes to complete this survey.

Student achievement inventory: teacher form validity and reliability. Cronbach's alpha was reported for each of the four scales: teacher environmental perception (TEP) = .863, teacher self-regulation (TSR) = .941, teacher goal valuation (TGV) = .993, and teacher self-

efficacy (TSE) = .993, on the *Student Achievement Inventory: Teacher Form* indicating internal consistency reliability (Siegle et al., 2011). The authors of this instrument did not provide information establishing neither convergent nor criterion-related validity.

High school teachers' views on high school students doing well in school. The researcher designed the *High School Teachers' Views on High Students' Doing Well in School* survey instrument (see Appendix C). The survey contains four demographic questions and one question asking for a listing of courses currently taught by the teachers. The first open-ended question prompts teachers to identify causes of student underachievement. The second open-ended question prompts to teachers to identify possible solutions to resolve student underachievement. The survey was administered to those teachers who volunteered to participate in the study.

High School Teachers Views on High School Students Doing Well in School was piloted a year prior to conducting the present research study. It was piloted with 10 teachers within a high school science department that had a similar profile to the school where the present study was conducted. The purpose of the pilot study was to check for the teachers' comprehension of the questions asked of them. Suggestions for improvements and clarifications were noted and reflected in the version distributed for this research study.

High school students' views on doing well in school. The researcher designed the High *School Students' Views on Doing Well in School* survey instrument (see Appendix C). The survey contains four demographic questions and three questions used to identify the number of honors level or Advance Placement courses the student was enrolled in during its administration. The first open-ended question prompts students to identify causes of student underachievement. The second open-ended question prompts students to identify possible solutions to resolve

student underachievement. The survey was distributed for completion to those students who provided parental consent and student assent.

High School Students' Views on Doing Well in School was piloted with 60 high school students from a high school campus with similar demographics to those of the participants in this study. The purpose of the pilot study was to check for the students' comprehension of the questions asked of them as illustrated in their responses. Suggestions for improvements and clarifications were noted and reflected in the version distributed for this research study. The final version of the instrument removed foreign language as an Honors course option from the demographic questions because Honors level foreign language courses were offered at the school.

Procedures

The following data collection procedures governed the administration of all surveys.

Teacher survey administration. Two instructional days prior to the faculty meeting being held for data collection procedures, teachers were asked via email, written memo, and daily announcements to bring with them to the meeting their grade books containing their students' rosters with grades and/or access to this information via an electronic devise. Teachers were asked to sit by department at designated tables identified by departmental signs placing all of the social studies teachers directly in front of the researcher. This arrangement provided the researcher direct and easy access to all of the teachers within the social studies department for recruitment of their classes for the distribution of student surveys.

Teachers were given a brief synopsis of the study via a presentation (as seen in Appendix D) by the researcher prior to the distribution of consent letters. Social studies teachers were asked during the presentation to volunteer their classes for distribution of the student surveys.

These teachers were asked to volunteer because every student at every grade level must enroll in a social studies class.

Those teachers who volunteered their participation by completing the consent form were asked to complete the two teacher instruments: the yellow colored *Student Achievement Inventory: Teacher Form* and the goldenrod colored *High School Teachers' Views on Students Doing Well in School.* Both instruments were stapled together, numerically coded, and completed in approximately 35 minutes.

Student survey administration. Twelve social studies teachers volunteered their classes for participation in the study. These teachers were contacted via email explaining their responsibilities in obtaining parental consent, student assent, and survey distribution. The teachers were asked to provide the researcher with the number of courses taught, the course title, and the number of students enrolled in each of their classes. Teachers who taught inclusion classes were asked to provide the researcher with the number of students in possession of an IEP. This information was needed to coordinate the distribution of parental consent and student assent forms. Students in possession of an IEP were given the opportunity to obtain parental consent and assent their participation in the study. Their data were not included because this study sought to compare regular education students enrolled in different academic programs.

Ten days after the collection of all parental consent and student assent forms, the cream colored SAAS-R and the green colored *High School Students' Views on Doing Well in School* were administered by all the social studies teachers who had volunteered their time and classes for administration of the surveys. Both surveys were coded and stapled together for distribution. Non-instructional time was provided by the social studies teachers to administer the surveys. The completion of both instruments took the students approximately 20 minutes. Surveys were

collected by the researcher the next day to allow absent students who had provided parental consent and student assent the opportunity to complete the survey.

Data Collection Procedures and Timeline

The following procedures will be followed according to the proposed timeline.

1. Obtain Superintendent, Assistant Superintendent of School Improvement, and Principal interest, September 2012
2. Submit application to Institutional Review Board (IRB), December 1, 2012
3. Obtain approval from the Institutional Review Board (IRB) meeting date, December 12, 2012
4. Obtain Superintendent, Assistant Superintendent of School Improvement, and Principal consent (see Appendix F-H), December 17, 2012
5. Distribute and collect teacher consent forms (see Appendix I) at a faculty meeting, January 7, 2013
6. Distribute and collect teacher surveys at the same faculty meeting as above, January 7, 2013
7. Determine teacher volunteers to distribute student surveys, January 7, 2013
8. Distribute parent consent (see Appendix J) and student assent forms (see Appendix K) to teachers for distribution to and collection from the students, February 25-March 1, 2013
9. Collect parent consent and student assent forms, March 1, 2013.
10. Distribute student surveys, March 11, 2013. All surveys were collected by March 18, 2013
11. Analyze data and complete report

Limitations of the Study

Threats to this study existed because of the causal comparative and correlational designs. Neither designs resulted in causality.

Internal Validity

Creswell and Plano-Clark (2011) define internal validity as "the extent to which the investigator can conclude that there is a cause and effect relationship among variables" (p. 211) which can only occur when other "extraneous variables" (Gall et al., 2007, p. 383) are controlled for with the study (Gall et al., 2007). Internal validity must be addressed within a quantitative research study to account for the validity of all conclusions drawn from all research findings (Creswell & Plano-Clark, 2011). The two internal threats to the validity of this study were instrumentation and differential selection (Gall et al., 2007).

Instrumentation. The instrumentation utilized in a study can affect the results of the study by acting as "an extraneous variable" (Gall et al., 2007, p. 383) by providing inaccuracies in the reported scores generated by the participants (Onwuegbuzie, 2000). Two researcher designed instruments, *High School Teachers' Views on High School Students Doing Well in School* and *High School Students' Views on Doing Well in School* were impending threats to the internal validity of the study because they were newly developed instruments that could have had limited validity and reliability. Both instruments were piloted and revised based on the teachers' and students' comments, lending to their applicability for this study. Inter-rater agreement was sought for each of the researcher designed instruments. An external audit was performed on the data findings of each instrument supporting the reliability for coding all responses. The students' self-reporting of their GPA on the *School Attitude Assessment Survey-Revised* was an impending threat to the internal validity of the study because a student could have inaccurately reported his

or her grade point average. Students were asked to bring a copy of their second quarter report card to accurately report their GPA on the survey reducing the level of the threat to internal validity.

The researcher provided training, explicit directions, and created a script to be read by all teachers who volunteered to distribute the survey in their classes. This process reduced improper survey administration and data collection from the student population, which could have affected the results of this study.

Differential selection. The differences which exist between sampled groups in the study resulting from their selection process could pose a threat to the internal validity of the study as the result of differential selection (Onwuegbuzie, 2000). The non-randomization of sampled populations would not provide an equal chance of participation in the study affecting the outcomes of the dependent variables (Gall et al., 2007; Onwuegbuzie, 2000). A sample of convenience was used as opposed to the random sampling of subjects for this study increasing the chances that group differences did occur affecting the results (Onwuegbuzie, 2000).

Teacher participants were asked to volunteer for the study because data were sought to find differences in teachers' views based on their level of teaching experiences. Non-participatory forms were made available to those teachers who did not want to participate in the study. All eligible teachers in attendance at the mandatory faculty meeting consented their participation in this study. Those who were ineligible to complete the survey were provided non-participatory forms for completion. Teachers who were not in attendance at the faculty meeting, for reasons unknown, were not provided an opportunity to consent their participation within this study.

Student participants were also selected from a sample of convenience of students whose social studies teacher volunteered to distribute student surveys. Their participation in the study resulted from parental consent and their assent posing a threat to the internal validity of the study. Those students were not assessed to determine if they exhibited group similarities which could affect the results. Student survey distribution occurred on a Thursday to provide absent assented students the opportunity to complete the survey upon their return to class the next day.

External Validity

External validity refers to the degree in which the experimental results can be applied to other external settings and populations (Creswell & Plano-Clark, 2011; Gall et al., 2007; Locke, Silverman, & Spirduso, 2010; Onwuegbuzie, 2000). The two external threats to this study were population validity and the Hawthorne effect.

Population validity. Population validity threatens the "extent to which the results can be generalized from the sample that was studied to a specified, larger group" (Gall et al., 2007, p. 389). A thorough and detailed description of both the student and teacher populations was provided to allow for future researchers to assess whether or not the results of this study could be transferred to other populations.

Hawthorne effect. The awareness of the purpose of the research study and participation within it could affect the sample populations' performance in the study creating the Hawthorne effect which poses a threat to external validity (Gall et al., 2007). Student surveys were administered, as part of a social studies lesson on citizens' rights to participate in government, to reduce the Hawthorne effect amongst the student population.

Trustworthiness

Qualitative studies seek to establish trustworthiness as a means of establishing validity and reliability for the data findings (Seale, 1999; Shenton, 2004; Toma, 2006). Qualitative findings could be questioned by readers of the research if credibility, dependability, transferability, and confirmabililty are not addressed with the study (Rolfe, 2006; Shenton, 2004). Trustworthiness of a qualitative study could further be supported through the triangulation of the data by methods (Jicks, 1979; Seale, 1999; Shenton, 2004).

Triangulation was established through the use of a mixed methods research study grounded in motivation and attribution theory. Student and teacher quantitative data on factors affecting academic achievement were collected through the use of Likert-type surveys, SAAS-R and the *Student Achievement Inventory: Teacher Form*. Student and teacher qualitative data were collected through researcher created instruments, *High School Students' Views on Doing Well in School* and *High School Teachers' Views on High School Students Doing Well in School*, containing two open-ended questions focusing on student underachievement. The usage of these instruments allowed for triangulation between methods to support the results of the qualitative findings.

Credibility. A qualitative research study must be grounded in the believability of the study and its results which work to establish the study's credibility (Shenton, 2004; Toma, 2006). Credibility of this study was established through multiple methods. An auditor was utilized to evaluate the coding of all qualitative data. All research was conducted in a high school which was a site of prior employment to the researcher as established in the researcher biography making her familiar with the culture of the students, teachers, and school.

Transferability. Qualitative research findings must be analyzed for their ability to be transferred to other contexts and replicated by other researchers establishing their transferability (Shenton, 2004; Toma, 2006). A detailed description of the subjects and sampling procedures was provided in the methodology allowing for transferability

Dependability. Dependability within a qualitative study must be illustrated through the detailed reporting of all research procedures to illustrate its reliability (Seale, 1999; Shenton, 2004; Toma, 2006). Qualitative data responses were kept confidential through the assignment of codes to each participant. The quantitative surveys were also coded and separated from the consent and assent forms before data entry and analysis. The coding of the participants and their surveys sought to establish the dependability of the study. Two different instruments were administered to each participant for data collection. The quantitative instruments contained Likert-type statements while the qualitative surveys utilized open-ended questions. The use of multiple data collection methods further established dependability. A detailed and thorough description of the research design, implementation, and data collection was also provided in the methodology to further support the dependability of this study.

Confirmability. Qualitative findings must be supported by the data for the establishment of confirmability (Shenton, 2004; Toma, 2006). Detailed methodological descriptions were provided to demonstrate that the qualitative findings emerged from the data and not from researcher bias. An audit of the data was performed by an external auditor to maintain that the findings emerged from the data.

Statement of Ethics

Permission to participate in this research was sought from the superintendent, assistant superintendent of school improvement, school principal, participating teachers and students.

Parental consent was sought for those students participating in the study. Coded identification numbers were assigned to all teacher and parental consent forms, student assent forms, and surveys to insure confidentiality. All of the social studies teachers who volunteered their classes for participation in the study were assigned letter codes to insure confidentiality. Results will be reported in aggregate form and made available to the participating principal upon request.

Chapter Summary

The methodology of the study was detailed to explain the processes and procedures followed to conduct this study. The research biography established the researcher's credibility by explaining her familiarity with the setting and sample populations. The four research questions, their hypotheses, and the data analysis for each question were detailed to provide for the transferability of this study. Subjects, sampling procedures, instrumentation, testing procedures, and limitations were described to aid in the triangulation of the data in chapter 4.

CHAPTER FOUR:

ANALYSIS OF THE DATA AND AN EXPLANATION OF THE FINDINGS

Four research questions were addressed and analyzed in this chapter. A quantitative analysis has been conducted for research questions one to three to determine if the data has supported or refuted the selected non-directional hypotheses. A qualitative analysis has been conducted for research question four to determine emerging themes present in the data. The chapter concludes with the triangulation of the quantitative and qualitative findings.

Overview of the Study

This section provides a complete and thorough analysis of all data collected for this survey research study that used a parallel convergent mixed methods research design. Non-directional hypotheses have been selected for research questions one, two, and three. A general qualitative study (Caelli et al., 2003) using open-ended questions was used to gather all qualitative data to address research question four.

Research Questions and Hypotheses

Research question one. The following quantitative research question was addressed using a two-way MANOVA: Is there a significant difference between high school students' academic program (Non-Honors/Non-AP, Honors/AP) and gender with respect to students' school attitudes about achievement that include academic self-perceptions, attitudes towards teacher and classes, attitudes toward school, goal valuation, and motivation/self-regulation? A non-directional hypothesis was selected in response to research question one and is supported by the review of the literature. The following non-directional hypothesis was developed: There will be a significant difference between high school students' academic program (Non-Honors/Non-AP, Honors/AP) and gender with respect to students' school attitudes about

achievement that include academic self-perceptions, attitudes towards teacher and classes, attitudes toward school, goal valuation, and motivation/self-regulation.

Students were asked to complete the SAAS-R to determine their levels of academic self-perception, attitude towards teachers and classes, attitude towards school, goal valuation, and motivation/self-regulation as factors affecting academic achievement. Demographic data collected from the *High School Students' Views on Doing Well in School* survey was used to determine the students' gender and their academic program.

Research question two. A multiple regression procedure was conducted to examine the relationship between the variables in the following question: To what degree and in what manner do students' gender, and school attitudes about achievement that include academic self-perceptions, attitudes towards teachers and classes, attitudes towards school, goal valuation, and motivation/self-regulation predict high school students' self-reported academic achievement? A non-directional hypothesis was selected for research question two and is supported by the review of the literature. The following is the non-directional hypotheses for research question two: Students' gender, and school attitudes about achievement will be significant predictors of high school students' self-reported academic achievement (GPA).

A multiple linear regression (Meyers, Gamst, & Guarino, 2006) with stepwise analysis was used to determine if the students' academic program, gender, and school attitudes about achievement were predictors of their academic achievement.

Research question three. A MANOVA was used to examine the variables in the following research question: Is there a significant difference between high school teachers' experience as educators (early, 1-10 years; middle, 11-20 years; and late career, 20-30^{+} years) with respect to their perceptions of factors associated with student achievement that include

academic self-efficacy, environmental perception, goal valuation, and self-regulation? A non-directional hypothesis was selected to address research question three and is supported by the review of the literature. The following non-directional hypothesis was selected for research question three: There will be a significant difference between high school teachers' experience (early, middle, and late career) with respect to their perceptions of factors associated with student achievement that include academic self-efficacy, environmental perception, goal valuation, and self-regulation.

Teachers were administered the *Student Achievement Inventory: Teacher Form* to gather data on the four subscales while the *High School Teachers' Views on High School Students Doing Well in School* survey was utilized to gather all demographic data needed for data analysis.

Research question four. The following qualitative research question was asked: What are high school teachers' and students' perceptions of the causes and solutions of underachievement? *High School Students' Views on Doing Well in School* and *High School Teachers' Views on High School Students Doing Well in School* were the researcher-created qualitative instruments used to gather the data for research question four. The same two open-ended questions were asked of both sample populations and then analyzed for emerging themes.

Data Preparation for Research Question One

Data Screening Process. Data screening was initially conducted to cleanse the data for accurate data analysis. Code cleaning was executed "to determine, for every case, whether each variable contains only legitimate numerical codes or values and, secondarily, whether these legitimate codes seem reasonable" (Meyers et al., 2006, p. 44). All demographic data collected was screened for the legitimacy of codes and against the researcher generated codebook after

data entry into SPSS (Green & Salkind, 2008). Code and value cleaning occurred to refine the data collected based on the student sample population.

Visual inspections of the data revealed the selection of two responses to a particular prompt on the SAAS-R, which was based on a range from 1-7 on a Likert-type scale, by the students. When students selected two responses from the Likert-type scale these values were averaged. The inspections also revealed missing student data. A decision was made to remove all students with missing gender (n = 12), academic program (n = 53), grade point average (n = 7), and SAAS-R survey data from the study. The listwise deletion (Meyers et al., 2006) of students with missing data was conducted to cleanse the data. Students (n = 87) who provided missing data for any of the prompts from the SAAS-R were removed from the study. The demographic data collected for the students' course enrollments and self-reported grade point was cleansed. A total of 151 students were removed from the study because they did not meet the criterion for enrollment into the Non-Honors/Non-AP and Honors/AP academic programs. The Honors/AP group was the result of combining the data for those students who were identified as either enrolled in an Honors or AP program. This resulted in similar sample sizes for both academic programs. The listwise deletion did not affect the sample size of students identified in a particular academic program, as seen in Table 10, limiting its effect on the multivariate data analyses.

Table 10

Student Academic Program Information for the Cleansed Sample with Respect to Gender

Gender	Non-Honors/ Non-AP[a]	Honors/AP[b]	Hybrid Academic Program[c]	Total
Female	92	108	88	288
Male	71	54	62	187
Total	163	162	150	475

a. Non-Honors/Non-AP: Students were not enrolled in any Honors or Advance Placement level courses.
b. Honors/AP: Students met the established criterion for course enrollment and/or GPA for identification as an Honors and Advance Placement level student.
c. Hybrid Academic Program: Students were enrolled in Honors or Advanced Placement level courses but did not meet the established criterion, as per the key terms, for placement in the Honors or Advanced Placement academic program.

Bivariate scatter plots (Meyers et al., 2006) were conducted for both academic program and gender with respect to the five dependent variables. An analysis of the academic program plots revealed 22 outliers amongst the subscales of academic self-perception, attitude towards teachers and classes, goal valuation, and motivation/self-regulation while five outliers were reported for gender and all subscales. All 27 outliers possessed a mean greater than two standard deviations (Miller, 1991) for their respective subscale resulting in their deletion from the study.

Multivariate Statistical Assumptions for a MANOVA

Normality, linearity, spherecity, independence, correlations of the dependent variables (Meyer et al., 2006), and homogeneity of variance (Huck, 2008; Meyers et al., 2006) were six multivariate statistical assumptions analyzed to determine the existence of data violations before proceeding with the analysis. Violations to any of these assumptions would result in further data

cleansing with the removal of all outliers, possible data transformation, or the removal of a subscale.

Normality. The assumption of normality asserts that a normal distribution of all sampled means exists across a selected independent variable as illustrated by a bell-shaped curve (Meyers, et al., 2006). It was used to determine the distribution of the data for all variables (Huck, 2008; Meyers et al., 2006). Skewness is defined as "a measure of the symmetry of a distribution" while kurtosis is defined as a "measure of the general peakedness of a distribution" (Meyers et al., 2006, p. 68). Acceptable skewness and kurtosis values for normality would result in values being not greater than -1.0 to +1.0 (Huck, 2008). A violation of skewness and kurtosis would result in the usage of a Kolmogorov-Smirnov test (Meyers et al., 2006) to further determine the normality of the data.

Normality for academic program. The tests for normality required skewness and kurtosis to be determined for each academic program level, Non-Honors/Non-AP and Honors/AP, as the independent variable for the five dependent variables, academic self-perception, attitudes towards teachers and students, attitudes towards school, goal valuation, and motivation/self-regulation as factors affecting academic achievement. The skewness and kurtosis values for academic program are recorded in Table 11.

Table 11

Descriptive Statistics for the Academic Program

Dependent Variable	Academic Program	*Mean*	*Standard Deviation*	*Variance*	*Skewness*	*Kurtosis*
ASP	NHAP	5.26	.804	.647	-.098	-.669
	HAP	5.77	.690	.477	-.383	.022
ATT	NHAP	4.82	1.110	1.230	-.467	-.214
	HAP	4.96	.849	.720	-.075	-.393
ATS	NHAP	4.60	1.500	2.260	-.565	-.389
	HAP	4.54	1.350	1.830	-.427	-.188
GV	NHAP	6.64	.462	.213	-1.130	.316
	HAP	6.79	.325	.106	-1.150	1.100
MSR	NHAP	5.17	.936	.875	-.333	-.260
	HAP	5.57	.854	.730	-.330	-.491

Note. ASP = academic self-perception; ATT = attitudes towards teachers; ATS = attitudes towards school; MSR = motivation/self-regulation. NHAP = Non-Honors/Non-AP academic program; HAP = Honors/AP academic program.

Normality was violated for goal valuation with skewness and kurtosis values above -1.0 to + 1.0 for those students enrolled in the Honors/AP academic program. A skewness value above -1.0 to + 1.0 for goal valuation was reported for students enrolled in the Non-Honors/Non-AP academic program violating normality.

The Shapiro-Wilk test was then conducted, at the recommendation of Meyers et al. (2006) to further determine a violation to normality. A stringent alpha level of $p < .001$ was set

to determine violations to normality (Meyers et al., 2006). Table 12 contains the Shapiro-Wilk test results for normality.

Table 12

Shapiro-Wilk Test Results for Normality for the Academic Program

Dependent Variable	Academic Program	*Shapiro-Wilk*		
		Statistic	*df*	Sig.
ASP	NHAP	.984	124	.142
	HAP	.977	125	.030
ATT	NHAP	.970	124	.007
	HAP	.990	125	.539
ATS	NHAP	.957	124	.001
	HAP	.974	125	.015
GV	NHAP	.783	124	.000
	HAP	.700	125	.000
MSR	NHAP	.984	124	.158
	HAP	.974	125	.018

Note. ASP = academic self-perception; ATT = attitudes towards teachers; ATS = attitudes towards school; MSR = motivation/self-regulation. NHAP = Non-Honors/Non-AP academic program; HAP = Honors/AP academic program

Goal valuation for both academic programs was in violation of normality ($p = .000$) with "a stringent alpha level of $p < .001$ indicating a normality violation" (Meyers et al, 2006, p. 68). The decision was made to postpone the rectification of the goal valuation violation until after the analysis of gender.

Normality for gender. The tests for normality required the skewness and kurtosis to be determined for each level of gender, male or female, as the independent variable for each of the five dependent variables which are the subscales of the SAAS-R. Acceptable skewness and kurtosis values for normality would result in values being not greater than -1.0 to +1.0 (Huck, 2008). The skewness and kurtosis values for academic gender are recorded in Table 13.

Table 13

Descriptive Statistics for Gender

Dependent Variable	Gender	*Mean*	*Standard Deviation*	*Variance*	*Skewness*	*Kurtosis*
ASP	Males	5.50	.843	.710	-.416	-.140
	Females	5.57	.753	.566	-.399	-.351
ATT	Males	4.90	.995	.990	-.404	-.204
	Females	4.85	1.040	1.090	-.504	.092
ATS	Males	4.86	1.300	1.690	-.488	-.082
	Females	4.41	1.540	2.390	-.427	-.576
GV	Males	6.61	.515	.266	-1.450	1.910
	Females	6.78	.388	.150	-2.180	5.210
MSR	Males	5.12	1.030	1.050	-.628	.292
	Females	5.57	.902	.813	-.467	-.147

Note. ASP = academic self-perception; ATT = attitudes towards teachers; ATS = attitudes towards school; MSR = motivation/self-regulation.

Normality was violated for goal valuation with skewness and kurtosis values greater than the absolute value of 1.

The Shapiro-Wilk test was then conducted, at the recommendation of Meyers et al. (2006) to further determine a violation to normality. An alpha level of $p < .001$ was set to determine violations to normality (Meyers et al., 2006). Table 14 contains the Shapiro-Wilk test results for normality.

Table 14

Shapiro-Wilk Test Results for Normality for Gender

Dependent Variable	Gender	*Shapiro-Wilk*		
		Statistic	*df*	Sig.
ASP	Males	.075	142	.034
	Females	.072	202	.002
ATT	Males	.090	142	.015
	Females	.080	202	.003
ATS	Males	.072	142	.014
	Females	.088	202	.000
GV	Males	.235	142	.000
	Females	.343	202	.000
MSR	Males	.086	142	.023
	Females	.060	202	.001

Note. ASP = academic self-perception; ATT = attitudes toward teachers and classes; ATS = attitudes toward school; GV = goal valuation; MSR = motivation/self-regulation.

Goal valuation for both academic programs and gender was in violation of normality (p = .000) with "a stringent alpha level of p < .001 indicating a normality violation" (Meyers et al, 2006, p. 68). Attitudes towards school for males was also in violation of normality (p = .000).

Remediation of the violation to normality. Rectifications of the violations for the assumptions of normality had to be made before data analysis could begin. Goal valuation, as a dependent variable, was in violation of normality for both academic program and gender. An examination of the date revealed that students in the Non-Honors/Non-AP (M = 6.64, SD = .462) and Honors/AP (M = 6.79, SD = .325) shared means which were on the high end of a 7-point Likert-scale. This was also true when a comparison was conducted between males (M = 6.61, SD = .515) and females (M = 6.78, SD = .389) and their levels of goal valuation. A lack of variability in the scores for this variable is further revealed by a series of histograms representing these constructs as seen in Figures 2-3.

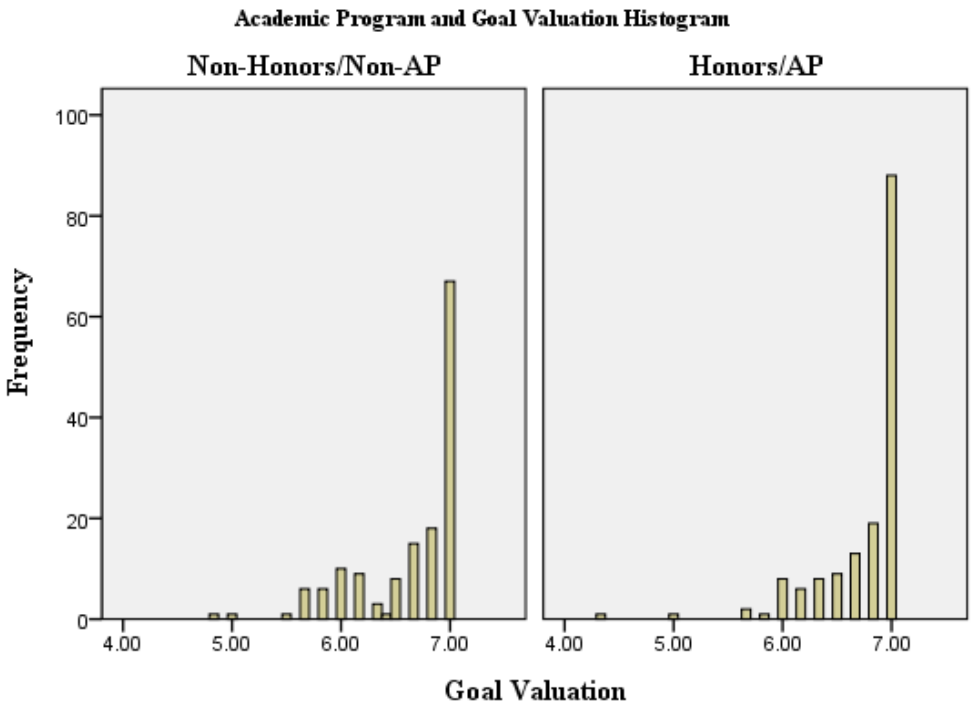

Figure 2. Histograms Comparing Academic Program and Goal Valuation

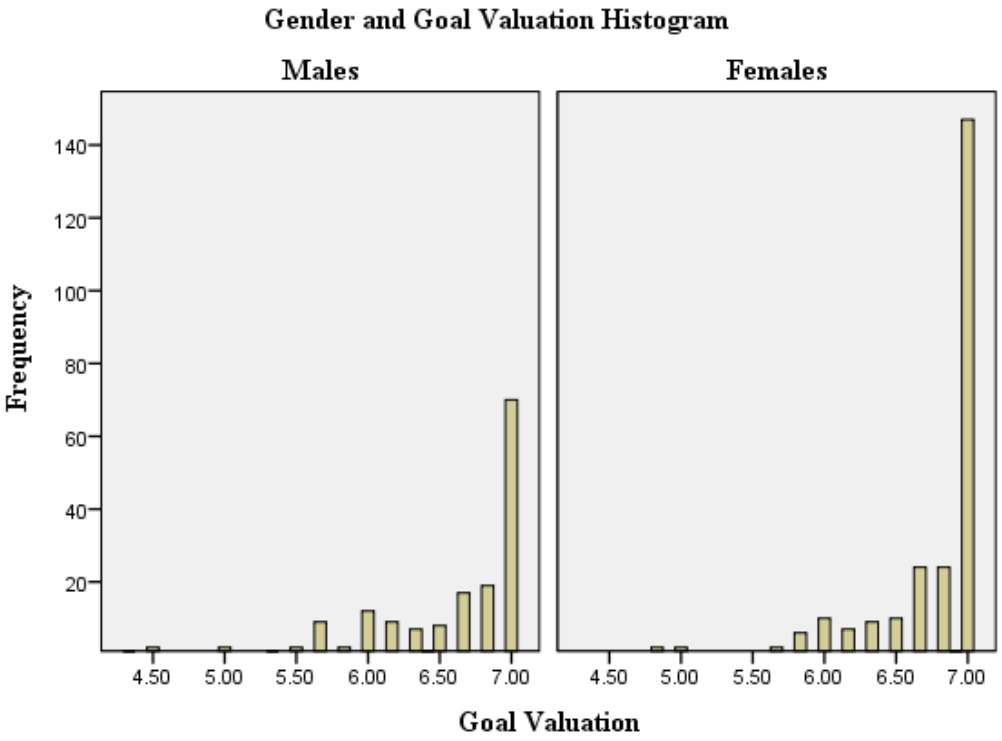

Figure 3. Histograms Comparing Gender and Goal Valuation

The similarity in means for both male and female students in both academic programs reveals they perceived themselves as possessing high levels of goal of valuation. Because of the similarities in mean scores and the violations to normality, as indicated by the skewness, kurtosis, and Shapiro-Wilk test values for goal valuation with respect to both independent variables, it was decided to remove goal valuation as a dependent variable from all statistical analyses. All future data analyses, the two-way MANOVA and the multilinear regression, do not contain goal valuation as a dependent variable.

The Shapiro-Wilk test revealed a violation of normality for males' attitudes toward school. A reevaluation of Table 9 revealed neither skewness nor kurtosis violations for females' attitudes towards school. Both values were within the acceptable skewness and

kurtosis range of -1.0 to +1.0 (Huck, 2008). Because skewness and kurtosis were not violated despite a violation being revealed in the Shapiro-Wilk test (Meyers et al., 2006), the subscale for males' attitudes towards class was not removed from the study allowing data analyses to continue.

Linearity. Linearity was used to determine the linear relationships between the variables as illustrated by a "straight line in a scatterplot" (Meyers et al., 2006). Visual inspection of the bivariate scatterplots for linearity for academic programs and gender and each dependent variable revealed no violations. Because linear relationships existed between the variables, data transformations was not needed (Meyers et al., 2006)

Bartlett's Test of Sphericity. The Bartlett's Test for Sphericity was conducted to determine if a "sufficient correlation between the dependent variables" (Meyers et al., 2006, p. 397) existed so that a MANOVA can be used for data analysis (Meyers et al., 2006). A significant correlation (approximate *chi square* = 374.347, $p < .001$) was found between the dependent variables allowing for the continuation of data analysis.

Independence. An analysis of the means for gender and academic program and the four dependent variables was conducted to determine the existence of a violation to the assumption of independence (Green & Sulkind, 2008). Differences amongst the means for both independent variables were revealed.

Correlation of the dependent variables. Correlations were obtained between the four dependent variables. Statistical correlations can be found between all four of the dependent variables which is indicative of strong relationships between the dependent variables as seen in Table 15.

Table 15

Pearson Product-Moment Correlations between Dependent Variables (n = 263)

	ASP	ATT	ATS	MSR	Gender	Academic Program
ASP	-					
ATT	.384**	-				
ATS	.278**	.591**	-			
MSR	.487**	.483**	.300**			
Gender	.036	-.069	-.143**	.194**	-	
Academic Program	.353**	.119*	.009	.262**	.105	-

Note. ASP = academic self-perception; ATT = attitudes toward teachers and classes; ATS = attitudes toward school; MSR = motivation/self-regulation. * $p < .05$, two-tailed. ** $p < .01$, two-tailed.

Homoscedasticity. Homogeneity of variance was used to determine the variability between the dependent variables when observed for each independent variable (Huck, 2008; Meyers et al., 2006). An analysis for the homogeneity of variance was conducted through an analysis of the Box's M Test of Equality of Covariance Measures for academic program and gender as the independent variables. Table 16 did not reveal a violation in homoscedasticity ($p < .001$) allowing for the use of Wilks's lambda to assess the multivariate effects (Meyers, et al., 2006).

Table 16

Box's Test of Equality of Covariance Measures for Academic Program and Gender

Statistic	Value
Box's M	46.472
F	1.503
df1	30.000
df2	120511.388
P	.038

Two-Way MANOVA Analyses

A Two-way MANOVA was conducted to determine if significant differences existed between the independent variables of academic programs, Non-Honors/Non-AP and Honors/AP, and gender and the four dependent. This analysis was conducted after all multivariate statistical assumptions were met.

Means and standard deviations. Table 17 illustrates the mean scores, standard deviation, and sample size for each dependent variable based on the type of academic program and gender.

Table 17

Descriptive Statistics for Research Question One: A Two-way MANOVA (*n* = 263)

Dependent Variable	Gender	Academic Program	*Mean*	*Standard Deviation*
ASP	Males	NHAP	5.20	.791
		HAP	5.82	.845
	Total		5.46	.821
	Females	NHAP	5.25	.848
		HAP	5.69	.676
	Total		5.49	.788
Grand Mean			5.49	.048
ATT	Males	NHAP	4.84	1.03
		HAP	5.12	.893
	Total		4.96	.982
	Females	NHAP	4.74	1.19
		HAP	4.82	.830
	Total		4.79	1.01
Grand Mean			4.88	.063
ATS	Males	NHAP	4.77	1.27
		HAP	4.76	1.08
	Total		4.77	1.19

(continued)

Table 17

Descriptive Statistics for Research Question One: A Two-way MANOVA (*n* = 263)

Dependent Variable	Gender	Academic Program	*Mean*	*Standard Deviation*
	Females	NHAP	4.42	1.71
		HAP	4.39	1.43
	Total		4.55	1.43
Grand Mean			4.59	.091
MSR	Males	NHAP	4.86	.928
		HAP	5.48	.838
	Total		5.12	.939
	Females	NHAP	5.32	.905
		HAP	5.50	.923
	Total		5.42	.916
Grand Mean			5.29	.058

Note. ASP = academic self-perception; ATT = attitudes towards teachers; ATS = attitudes towards school; MSR = motivation/self-regulation. NHAP = Non-Honors/Non-AP academic program; HAP = Honors/Advanced Placement academic program
NHAP males (*n* = 61); NHAP females (*n* = 72); HAP males (*n* = 44); HAP females (*n* = 86).

An analysis of the *F* statistic using the reported Wilks's lambda values was conducted to determine the existence of a significant main effect for academic program and gender (Meyers, 2006). The Wilks's lambda test which utilized an adjusted alpha (α = .025) was selected to evaluate the variance which is not explained by the two independent variables for this model (Meyers, 2006). Significant main effects were found for both academic program and gender

while no statistical interaction was reported between the two independent variables as seen in Table 18.

Table 18

Wilks' Lambda for the Multivariate Test Comparing Academic Program and Gender

Effect		Value	*F*	*Hypothesis df*	*Error df*	*p*	*Partial Eta Squared*
Intercept	*Wilks's Lambda*	.017	3756.525[b]	4	256	.000	.983
Academic Program	*Wilks's Lambda*	.880	8.755[b]	4	256	.000	.120
Gender	*Wilks's Lambda*	.939	4.153[b]	4	256	.003	.061
Academic Program*Gender	*Wilks's Lambda*	.984	1.048[b]	4	256	.383	.016

Note. [b]Exact statistic.

Follow up analyses. The significant multivariate effects for academic program and gender indicates their impact on the four dependent variables. An analysis of the Box's Test of Equality of Covariance Matrices reported a Box's *M* value of 46.472 which was not significant (p = .038) indicating there were no significant differences between areas in the covariance matrices (Meyers, et al., 2006).

A final analysis was required to analyze each dependent variable b for its effect on the respective groups of the two independent variables. The Test of Between-Subjects Effects was used to determine statistical significance between academic program and gender and each of the four dependent variables. Table 19 reports the findings utilized for the final analysis.

Table 19

A Comparison of Academic Program and Gender Across Four Dependent Variables

Source	Dependent Variable	*Type III Sum of Squares*	*df*	*Mean Square*	*F*	*p*	*Partial Eta Squared*
Academic Program	ASP	17.548	1	17.548	30.279	.000*	.105
	ATT	1.939	1	1.939	1.946	.164	.007
	ATS	.022	1	.022	.011	.917	.000
	MSR	9.704	1	9.704	11.837	.001*	.044
Gender	ASP	.114	1	.114	.196	.658	.001
	ATT	2.422	1	2.422	2.431	.120	.009
	ATS	7.956	1	7.956	3.896	.049*	.015
	MSR	3.668	1	3.668	4.475	.035*	.017

Note. ASP = academic self-perception; ATT = attitudes towards teachers; ATS = attitudes towards school; MSR = motivation/self-regulation. *$p < .05$

There were statistically significant main effects ($p < .05$) for the students' academic program and the students' views of their ASP ($p < .001$) and MSR ($p = .001$). Students in an Honors/AP academic program ($M = 5.77$, $SD = .690$) reported higher scores of their views of academic self-perception than those students in the Non-Honors/Non-AP academic program ($M = 5.26$, $SD = .804$). Students in an Honors/AP academic program ($M = 5.57$, $SD = .854$) had a higher view of their motivation/self-regulation than those students in the Non-Honors/Non-AP academic program ($M = 5.17$, $SD = .936$). No statistical main effects were reported for the

students' academic program and their attitudes towards teachers and classes and attitudes towards school.

There were statistical main effects ($p < .05$) for gender and the students' ATS ($p = .049$) and MSR ($p = 035$). Male students ($M = 4.86$, $SD = 1.30$) had higher attitudes regarding school than female students ($M = 4.41$, $SD = 1.54$). Females ($M = 5.57$, $SD = .902$) reported higher motivation/self-regulation scores than males ($M = 5.12$, $SD = 1.03$). No statistical main effects were reported for gender and the students' views of academic self-perception, attitudes towards teachers and classes, and attitudes towards school.

Data Preparation and Analyses for Research Question Two

A multilinear regression was selected to analyze research question two because it was used to determine if gender, and school attitudes about achievement: academic self-perceptions; attitudes towards teachers and classes; attitudes towards school; goal valuation; and motivation/self-regulation are predictors of the criterion variable, students' self-reported academic achievement, as identified by their self-reported GPA.

The initial dataset used for these analyses was the same dataset used to conduct the Two-way MANOVA for research question number one.

Step-wise Multilinear Regression

A step-wise multilinear regression was selected for the analysis of research question two. In a step-wise multilinear regression model, the order of entry for each predictor variable into a model was determined by their integration within the regression equation (Huck, 2008). The goal of this type of analysis was to determine which combination of variables best predicted the established criterion (Meyers, et al., 2006). SPSS (Green & Salkind, 2008) was used to build a model in which each predictor variable, gender, and school attitudes about achievement:

academic self-perceptions; attitudes towards teachers and classes; attitudes towards school; goal valuation; and motivation/self-regulation, is added one at a time to determine the order (Huck, 2008) and importance (Meyers et al., 2006) of those predictors at determining the students' self-reported academic achievement as identified by their self-reported GPA. The model was be built by adding the predicator variables in a step-by-step manner retaining those variables which showed significance (p = .025) adding to the predictive variance of the dependent variable (Meyers et al, 2006).

Initial Screening Process. Data screening was initially conducted to cleanse the data for accurate data analysis. Code cleaning was executed "to determine, for every case, whether each variable contains only legitimate numerical codes or values and, secondarily, whether these legitimate codes seem reasonable (Meyers et al., 2006, p. 44). All demographic data collected were screened for the legitimacy of codes and compared to the researcher generated codebook after data entry into SPSS (Green & Salkind, 2008). Code and value cleaning occurred to refine the data collected for the student sample population.

The demographic data collected for the students' self-reported grade point averages were cleansed so that each student's self-reported GPA was within acceptable bounds. As a result, one student was removed from the study because his or her GPA exceeded this boundary. Visual inspections of all inputted data revealed missing student data. An analysis of the missing data revealed that the information was missing at random and were dispersed across all other variables (Meyers et al., 2006). The decision was made to remove all students with missing gender, academic program, GPA, and SAAS-R survey data from the study. The listwise deletion (Meyers et al., 2006) of students with missing data resulted in the removal of 116 students from the study revealing a greater participation of females (n = 158) than males (n = 105) in the study.

The deletion of these students posed not posed no threat to the data analysis procedures because a pattern of for data omission did not exist.

Multilinear Regression Assumptions

An analysis of the multilinear regression assumptions was conducted to determine the presence of violations which would negatively affect the results of this data analysis. Data analyses were conducted to determine violations of normality, linearity, homoscedasticity, multivariate outliers, multicollinearity, and the presence of suppressor variables (Meyers et al., 2006).

Data analysis. SPSS software (Green & Salkind, 2008) was used to conduct an analysis of the data guiding further analytical procedures. Analysis for violations to the four multivariate statistical assumptions was first conducted to determine the validity of the samples' data as it applies to the population (Huck, 2008).

Normality. The tests for normality required the skewness and kurtosis to be determined for each of five predictor variables, gender, academic self-perception, attitudes towards teachers and students, attitudes towards school, and motivation/self-regulation, and the criterion variable of students' self-reported academic achievement as identified by their self-reported GPA. The skewness and kurtosis values for all variables were recorded in Table 20.

Table 20

Descriptive Statistics for Research Question Two Variables (n = 431)

Variable	*Mean*	*Standard Deviation*	*Variance*	*Skewness*	*Kurtosis*
GPA	3.87	2.020	4.06	.188	-.916
Gender	0.60	.490	.240	-.424	-1.83
ASP	5.50	.820	.672	-.364	-.352
ATT	4.76	1.070	1.140	-.466	-.061
ATS	4.41	1.460	2.120	-.414	-.483
MSR	5.32	.980	.960	-.395	.363

Note. GPA = self-reported GPA; ASP = academic self-perception; ATT = attitudes towards teachers; ATS = attitudes towards school; MSR = motivation/self-regulation

Skewness values for all values were acceptable. The kurtosis value for gender was above the acceptable value for kurtosis. A Shapiro-Wilk test was conducted to determine any further violations to normality for gender. Gender was in violation of normality as seen in Table 21.

Table 21

Shapiro-Wilk Test Results for Normality for Gender in a Multilinear Regression

Dependent Variable	Gender	*Shapiro-Wilk*		
		Statistic	*df*	Sig.
GPA	Males	.939	141	.000
	Females	.935	211	.000

Note. ASP = academic self-perception; ATT = attitudes toward teachers and classes; ATS = attitudes toward school; GV = goal valuation; MSR = motivation/self-regulation.

Remediation of the violation to normality. Rectification of the violation to normality for gender needed to occur before data analysis could continue. Because the kurtosis value for gender exceeded the limit of absolute one and it yielded significant Shapiro-Wilk's values for both male and females, gender was removed as a predictor variable from further data analyses.

Linearity. Bivariate scatterplots were conducted and analyzed for the existence of linear relationships between each remaining predictor variable and the criterion. A visual inspection revealed no violations to linearity.

Homoscedasticity. A Box's *M* test was conducted to determine the existence of violations to homoscedasticity which would be indicative of a lack of variability between the criterion variable and the predictor variable academic-self-perception, attitude towards teachers and classes, attitude towards school, and motivation/self-regulation (Meyers et al., 2006). The Box's *M* test was not significant, as seen in Table 22, revealing no violations to homoscedasticity.

Table 22

Box's Test of Equality of Covariance Measures for the Four Predictor Variables

Statistic	Value
Box's M	55.410
F	.888
df1	60.000
df2	72716.179
p	.718

Multivariate Outliers. The Mahalanobis distance test was conducted to determine each case's Mahalanobis distance for the detection of multivariate outliers (Meyers et al., 2006). The critical value of chi-square distribution (20.515) with an alpha level of $p < .001$ for five degrees of freedom ($df = 5$) was used to evaluate each case (Meyers, et al., 2006). No multivariate outliers were revealed because none of the Mahalanobis distance values equaled or exceeded the established chi-square criterion as seen in Table 23.

Table 23

Extreme Values Test for Research Question Two (n =377)

			Case Number	Value
Mahalanobis Distance	Highest	1	100	18.20831
		2	400	17.69834
		3	313	16.22674
		4	124	15.19763
		5	46	14.60218
	Lowest	1	163	1.06566
		2	28	1.36277
		3	134	1.43394
		4	204	1.43875
		5	316	1.45287

Multicollinearity. Multicollinearity occurs "when two or more of the predictor variables correlate strongly" (Meyers, 2006, p. 180) negatively affecting the interpretation of a multilinear regression analysis. Meyers et al. (2006) recommends removing any variables whose correlation results meets or exceeds a value of 0.7 from the regression analysis.

Table 24

Pearson Product-Moment Correlations between Dependent Variables (n = 359)

	GPA	ASP	ATT	ATS	MSR
GPA	-				
ASP	-.480***	-			
ATT	-.165***	.383***	-		
ATS	-.090*	.293***	.603***	-	
MSR	-.369***	.477***	.468***	.307***	-

Note. GPA = self-reported grade point average; ASP = academic self-perception; ATT = attitudes toward teachers and classes; ATS = attitudes toward school; MSR = motivation/self-regulation. *$p < 0.05$, one-tailed. **$p < 0.01$, one-tailed. ***$p < .001$, one-tailed.

Multicollinearity was not exhibited between any of the predictor variables and the dependent variable, students' self-reported academic achievement as indicated by their self-reported GPA as seen in Table 24.

Suppressor variables. The presence of suppressor variables in a regression analysis increases the R^2 (Meyers et al., 2006) leading to their removal from the analysis because of its contribution as a source of error to other predictor variables (Meyers et al., 2006). Indication of a suppressor variable would result in the appearance of different signs amongst the Pearson correlations and the beta weights for each variable with each model. An analyses of both the Pearson correlations with the criterion of self-reported GPA in Table 24 and the beta weights of the regression coefficients in Table 25 was conducted to determine the existence of differing signs indicating a suppressor variable (Meyers et al., 2006).

Table 25

Step-wise Multilinear Regression Coefficients

Model		Unstandardized Coefficients		Standardized Coefficient
		B	Std. Error	*Beta*
1	(Constant)	10.236	.629	
	ASP	-1.168	.113	-.480
2	(Constant)	11.065	.664	
	ASP	-.958	.127	-.394
	MSR	-.370	.106	-.181

No suppressor variables were found in the data. Different signs did not exist between any of the variables' Pearson correlations with the criterion and their beta weights as reported in Tables 24 and 25, respectively (Meyers et al., 2006).

Assumption of normality. A visual analysis of the scatterplot of residuals as seen in Figure 4 was analyzed for violations in the assumption of normality. A visual inspection of the scatterplot resulted in "rectangularity" (Meyers et al., 2006, p. 202) illustrating a normal distribution of the residuals. No residual outliers were reported in a Casewise Diagnostic data table.

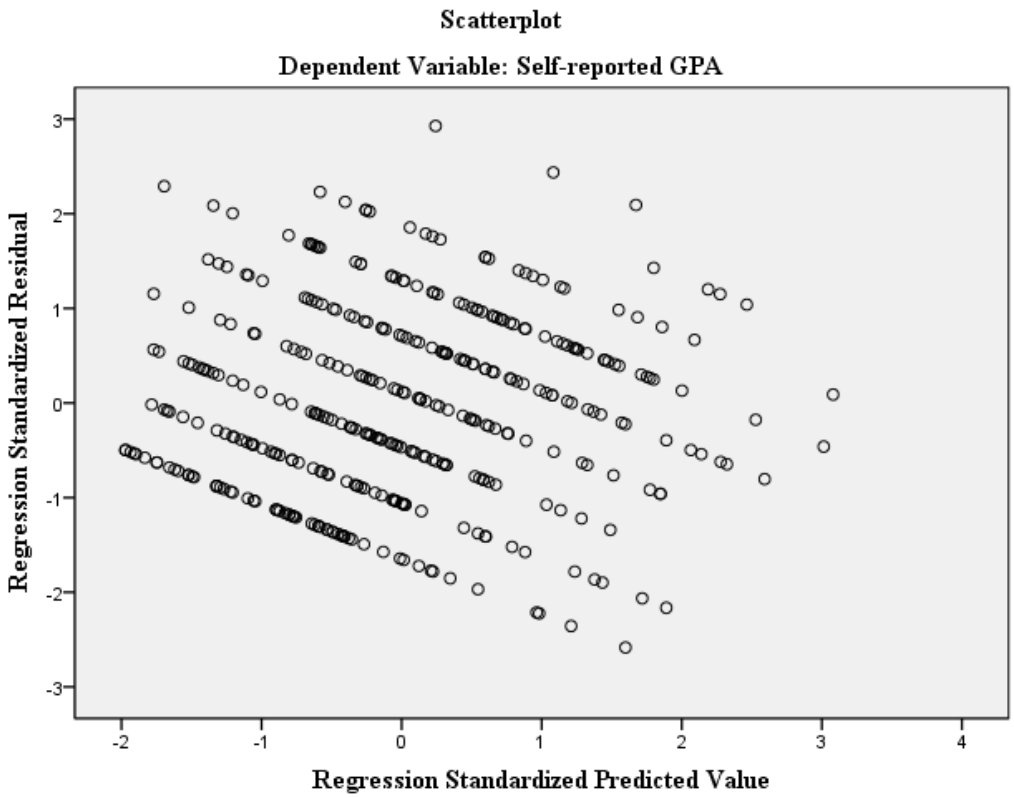

Figure 4. Multilinear Regression Scatterplot of Residuals

Assumption of linearity. Visual inspection for linearity for academic self-perception, attitudes towards teachers and classes, attitudes toward school, and motivation/self-regulation as predictor variables revealed no violation indicating the existence of a linear relationship between the variables.

Assumption of homoscedasticity. An analysis of the scatterplot illustrated no violation to the assumption of homoscedasticity because it retained a rectangular shape centering around the zero value of the residuals (Meyers et al., 2006). "Rectangularity" (Meyers et al., 2006, p. 202) was achieved between the residuals confirming normal distribution amongst the dependent variable of students' self-reported academic achievement as identified by their self-reported GPA.

Research Question Two Data Analyses

Data analysis was able to continue for the following reasons: gender was removed from the analysis to resolve the violation to normality; no multivariate outliers and suppressor variables were present in the data; multicollinearity was not violated; and the assumptions to normality, linearity, and homoscedasticity were not violated.

Means, standard deviations, and intercorrelations. Descriptive statistics were calculated for academic self-perception, attitudes towards teachers and classes, attitudes towards school, and motivation/self-regulation as predictor variables and for students' self-reported academic achievement as indicated by their self-reported GPA as the criterion variable as reported into Table 26.

Table 26

Descriptive Statistics for Research Question Two Variables (n = 359)

Variable	*Mean*	*Standard Deviation*
GPA	3.80	1.960
ASP	5.51	.805
ATT	4.86	1.040
ATS	4.53	1.430
MSR	5.37	.958

Note. GPA = self-reported GPA; ASP = academic self-perception; ATT = attitudes towards teachers; ATS = attitudes towards school; MSR = motivation/self-regulation

Intercorrelations were reported for each of the variables using a *Pearson Product-Moment Correlations* test. Three predictor variables, students' views on academic self-

perception, attitudes towards teacher and classes, and motivation/self-regulation were significantly correlated ($p < .001$) with the students' self-reported GPA as indicated in Table 21. The predictor variable of students' attitudes toward school was significantly correlated ($p < .05$) with the students' self-reported GPA as indicated in Table 27.

Table 27

Pearson Product-Moment Correlations between Dependent Variables (n = 359)

	GPA	ASP	ATT	ATS	MSR
GPA	-				
ASP	-.480***	-			
ATT	-.165***	.383***	-		
ATS	-.090*	.293***	.603***	-	
MSR	-.369***	.477***	.468***	.307***	-

Note. GPA = self-reported grade point average; ASP = academic self-perception; ATT = attitudes toward teachers and classes; ATS = attitudes toward school; MSR = motivation/self-regulation. *$p < 0.05$, one-tailed. **$p < 0.01$ level, one-tailed. *** $p < .001$ level, one-tailed.

All four predictor variables, academic self-perception, attitudes towards teachers and classes, attitudes towards school, and motivation/self-regulations, negatively correlated with GPA indicating that as the students' GPA increased as revealed in the Pearson Product-Moment Correlations between Dependent Variables. As high school students' GPA increased, their levels of academic self-perception, attitudes towards teachers and classes, attitudes towards school, and motivation/self-regulations decreased.

Standards stepwise regression analysis. SPSS (Green & Salkind, 2008) was used to construct two separate stepwise multilinear regression analyses. A different independent variable was added to each model to be used as the criterion for each regression equation (Huck, 2008; Meyers et al., 2006). Those predictor variables selected to enter the model significantly contributed to the predication of variance for the criterion variable (Meyers et al., 2006).

A preliminary multicollinearity assessment was conducted by analyzing the tolerance values of all the predictors in each model (Meyers et al., 2006). The Variance Inflation Factor (VIF) was analyzed for each predictor variable in each model for values "greater than 10" (Meyers, et al., 2006, p. 212). Table 28 displays the Tolerance and Variance of Inflation Factor (VIF) for each model indicating a lack of multicollinearity.

Table 28

Coefficients for the Stepwise Multilinear Regression

			Correlations			Collinearity	Statistics
	T	Sig.	Zero-Order	Partial	Part	Tolerance	VIF
ASP	-10.280	.000	-.479	-.479	-.479	1.00	1.000
(Constant)	16.830	.000					
ASP	-7.532	.000	-.479	-.372	-.345	.786	1.273
MSR	-3.775	.000	-.375	.197	-.173	.786	1.273

The Condition Index was then analyzed to determine the dependence of each predictor variable on the other predictor variables (Meyers et al., 2006) to further investigate the presence of multicollinearity. Table 29 displays Condition Index values that are less than 30 and variance

proportions less than 50 (Meyers et al., 2006) indicating that multicollinearity was not present in this stepwise multilinear regression analysis.

Table 29

Collinearity Diagnostics for Research Question Two

Model	Dimension	*Eigen*value	Condition Index	Variance Proportions (Constant)	ASP	MSR
1	1	1.99	1.00	.010	.010	
	2	.010	13.8	.990	.990	
2	1	2.97	1.00	.000	.000	.000
	2	.016	13.6	.310	.080	.950
	3	.010	17.0	.690	.920	.050

Stepwise multilinear regression analysis. An analysis of model one revealed that the students' views of their academic self-perception was a significant predictor, $F(1, 357) = 106.903$, $p < .001$, $R^2 = .230$, of their self-reported grade point average accounting for 23.0% of the variation in GPA. An analysis of model two revealed that when motivation/self-regulation, $F(2, 354) = 61.150$, $p < .001$, $R^2 = .256$, was added to the model an additional 2.6% of the variance of self-reported GPA was explained as seen in R^2 values in Table 30. Students' views of their attitudes towards teachers and classes and their attitudes towards school were not significant contributors to the multilinear regression model and were excluded from the stepwise multilinear regression model.

Table 30

Model Summary[a] for Research Question Two

Model	*R*	*R Square*	Adjusted *R Square*	Std. Error of the Estimate
1	.479a	.230	.228	1.72
2	.509b	.256	.252	1.70

a. Dependent Variable: Self-Reported GPA
b. Predictors: (Constant), Academic Self-Perception
c. Predictors: (Constant), Academic Self-Perception, Motivation/Self-Regulation,

The model summary of the analysis of variance for this stepwise multilinear regression is reported in Table 31.

Table 31

ANOVA[a] for Research Question Two

Model		Sum of Squares	*df*	Mean Square	*F*	Sig.
1	Regression	316.664	1	316.664	106.903	.000[b]
	Residual	1057.492	357	2.962		
	Total	1374.156	358			
2	Regression	351.369	2	175.685	61.150	.000[c]
	Residual	1022.787	356	2.873		
	Total	1374.156	358			

a. Dependent Variable: Self-Reported GPA
b. Predictors: (Constant), Academic Self-Perception
c. Predictors: (Constant), Academic Self-Perception, Motivation/Self-Regulation

Research Question Three Data Analyses

Research question three will be analyzed using a One-way MANOVA because the researcher is determining if there is a statistical difference in levels of the independent variable, teachers' years of experiences (early, 1-10 years; middle, 11-20 years; and late career, 20-30^{+} years) regarding their attitudes about students' academic self-efficacy, environmental perceptions, goal valuation, and self-regulation. The findings from this One-way MANOVA were used to test the non-directional hypothesis which states: Significant differences will exist for teachers' perceptions of students' academic self-efficacy, environmental perception, goal valuation, and self-regulation as factors affecting achievement and their teaching experience (early, middle, and late career).

Data Screening Process

Data screening was initially conducted to cleanse the data for accurate data analysis. Code cleaning was executed as part of the data screening process (Meyers et al., 2006). All demographic data collected were checked for the legitimacy of codes when compared to the researcher generated codebook after data entry into SPSS (Green & Salkind, 2008).

Teachers' responses to prompts on the *Student Achievement Survey: Teacher Form* were based on their selection of a range from 1-7 on a Likert-type scale. When teachers selected two responses from the Likert-type scale for the same item, these values were averaged. The demographic data collected for the teachers' years of experience were cleansed to develop three levels of teaching experience, early career (1 – 10 years), middle career (11 – 20 years), and late career ($20 – 30^{+}$ years) as result of teachers' reporting their exact number of years teaching.

Visual inspections of all data revealed missing teacher data. A decision was made to remove all participants with missing years of teaching experience and *Student Achievement Survey: Teacher Form* survey data from the study. The listwise deletion (Meyers et al., 2006) of teachers with missing data resulted in the removal of 16 teachers from the study resulting in the following sample size of 126, resulting in the following subgroups: early career (n = 42), middle career (n = 54), and late career (n = 30).

Frequencies were produced for teaching experience and the four teacher subscales of views on students' academic self-efficacy (TSE), environmental perception (TEP), goal valuation (TGV), and self-regulation (TSR) as factors affecting academic achievement to determine if responses exceeded the highest value of seven on the Likert-type scale. An analysis of the stem-and-leaf diagrams revealed the presence of four outliers with the three subscales of teacher self-efficacy (n = 1), teacher goal valuation (n = 2), and teacher environmental perceptions (n = 1). All outliers were deleted from the study.

Normality. Normality was used to determine the norm distribution of the data for all independent variables (Huck, 2008; Meyers et al., 2006). The skewness and kurtosis values for teachers' academic self-efficacy, goal valuation, self-regulation, and environmental perceptions were analyzed to determine the existence of normality. A violation of skewness would result in the usage of a Shapiro-Wilk test (Meyers et al., 2006) to further determine the normality of the data. Acceptable skewness and kurtosis values for normality would result in values being nor higher than -1.0 to +1.0 (Huck, 2008). The skewness and kurtosis values for teacher experience are recorded in Table 32.

Table 32

Descriptive Statistics for the Teacher Experience (n = 126)

Dependent Variable	Teacher Experience	*Mean*	*Standard Deviation*	*Variance*	*Skewness*	*Kurtosis*
TSP	Early	4.30	.900	.810	-.534	.674
	Middle	4.42	1.110	1.230	.097	.108
	Late	4.59	.769	.591	-.067	-.470
TGV	Early	4.37	.807	.651	-.516	.009
	Middle	4.53	1.040	1.070	-.687	-.089
	Late	4.63	.809	.809	-1.080	1.060
TSR	Early	4.21	1.670	2.780	-.174	-.635
	Middle	4.25	1.700	2.890	-.442	-1.070
	Late	4.67	1.600	2.560	-.852	-.299
TEP	Early	3.73	.356	.126	.471	.405
	Middle	3.74	.433	.187	.471	-.217
	Late	3.68	.384	.147	.230	-.451

Note. TSE = teacher self-efficacy; TGV = teacher goal valuation; TSR = teacher self-regulation; TEP = teacher environmental perception.

Normality was violated for skewness and kurtosis of teacher goal valuation and for the kurtosis of teacher self-regulation. The Shapiro-Wilk test was then conducted, at the recommendation of

Meyers et al. (2006) to further determine a violation to normality. Table 33 contains the Shapiro-Wilk test results for normality. A criterion of $p < .001$ was used. Note that normality was not violated for any of the four dependent variables.

Table 33

Shapiro-Wilk Test Results for Normality for Teacher Experience (n = 126)

Dependent Variable	Teacher Experience	*Shapiro-Wilks*		
		Statistic	*df*	Sig.
TSE	Early	.975	42	.472
	Middle	.988	54	.844
	Late	.978	30	.774
TGV	Early	.961	42	.161
	Middle	.944	54	.014
	Late	.916	30	.021
TSR	Early	.978	42	.581
	Middle	.924	54	.002
	Late	.899	30	.008
TEP	Early	.958	42	.122
	Middle	.968	54	.160
	Late	.976	30	.719

Note. TSE = teacher self-efficacy; TGV = teacher goal valuation; TSR = teacher self-regulation; TEP = teacher environmental perception.

The decision was made to retain teacher goal valuation and teacher self-regulation as subscales within the analyses (Meyers et al., 2006).

Linearity. Linearity was used to determine the linear relationships between the variables as illustrated by a "straight line in a scatterplot" (Meyers et al., 2006). Visual inspection for linearity for the three levels of teacher experience and self-efficacy, goal valuation, self-regulation, and environmental perceptions as dependent variables affecting students' academic achievement revealed no violations.

Independence. An analysis of all of the means for each dependent variable was conducted to determine the existence of independence. A difference in means existed indicating independence.

Homoscedasticity. The homogeneity of variance was used to determine the variability between the dependent variables when observed for each independent variable (Huck, 2008; Meyers et al., 2006). A Box's *M* test with an alpha level of $p < .001$ was used to determine the normal distribution for the dependent variables (Meyers et al., 2006).

Table 34 revealed a violation in homoscedasticity indicating that the teachers' perception of the students' self-efficacy, goal valuation, self-regulation, and environmental perceptions as dependent variables were not normally distributed and that their covariances were significantly different causing the null hypothesis to be accepted (Meyers et al., 2006) for the three levels of teacher experience, early career, middle career, and late career. The Box *M* Test of Equality of Covariance Measures revealed a violation of homoscedasticity resulting in heteroscedasticity.

Table 34

Box's Test of Equality of Covariance Measures for Teacher Experience (n =126)

Statistic	Value
Box's M	53.742
F	2.552
df1	20.000
df2	35371.048
p	.000

Rectification of the homoscedasticity. Another review of all skewness, kurtosis, and Shapiro-Wilk values was conducted yielding the same reported results. The homogeneity of variance for teacher experience was violated causing the researcher to randomly remove teacher participants to equalize the sample size (n = 30) for all three levels of teacher experience as a possible resolution to the violation of homogeneity reducing the sample size (n = 90) as seen in Table 35.

Table 35

Changes to Teacher Sample Size

Levels of Teacher Experience	Original Sample Size	Equalized Sample Size
Early	42	30
Middle	54	30
Late	30	30

Data Preparation and Analyses for Research Question Three

A One-way MANOVA was conducted for the three levels of teacher experience, early career (n = 30), middle career (n = 30), and late career (n = 30), as the independent variable to determine if statistical differences were present between the groups for each of the four dependent variables, the academic self-efficacy, goal valuation, self-regulation, and environmental perception as factors affecting high school students' academic achievement.

Multivariate Statistical Assumptions

Normality (Huck, 2008; Meyers et al., 2006), linearity (Meyers et al., 2006), spherecity (Meyers et al., 2006), correlations of the dependent variables (Meyers et al., 2006), and homogeneity of variance (Huck, 2008; Meyers et al., 2006) were five multivariate statistical assumptions analyzed using SPSS software (Green & Salkind, 2008) to determine the existence of data violations before proceeding with the data analysis. The following multivariate statistical assumptions for the newly reduced sample were conducted for the One-way MANOVA which utilized teacher experience as the independent variable and the teachers' views of academic self-efficacy (TSE), goal valuation (TGV), self-regulation (TSR), and environmental perceptions (TEP) as the four dependent variables affecting high school students' academic achievement.

Assumption of normality. A violation to the assumption of normality resulted for late career teachers and goal valuation with both skewness and kurtosis levels exceeding $\pm$ 1. The kurtosis level greater than $\pm$ 1 for early career teachers and self-efficacy also violated the assumption to normality as seen in Table 36.

Table 36

Descriptive Statistics for the Teacher Experience (n = 90)

Dependent Variable	Teacher Experience	*Mean*	*Standard Deviation*	*Variance*	*Skewness*	*Kurtosis*
TSP	Early	4.23	.923	.852	-.564	1.150
	Middle	4.53	1.250	1.550	-.009	-.043
	Late	4.59	.769	.591	-.067	-.470
TGV	Early	4.22	.752	.567	-.471	.051
	Middle	4.61	.958	.918	-.535	-.262
	Late	4.63	.809	.809	-1.080	1.060
TSR	Early	3.85	1.590	2.540	-.157	.993
	Middle	4.35	1.670	2.780	-.451	-.861
	Late	4.67	1.600	2.560	-.852	-.299
TEP	Early	3.71	.316	.100	.081	.868
	Middle	3.74	.472	.223	.471	-.217
	Late	3.68	.384	.147	.230	-.451

Note. TSE = teacher self-efficacy; TGV = teacher goal valuation; TSR = teacher self-regulation; TEP = teacher environmental perception; Early (1 – 10 years, $n = 30$); Middle (11 – 20 years, $n = 30$); Late ($20 – 30^{+}$ years, $n = 30$)

A *Shapiro-Wilk* test ($p < .001$) was then conducted to further determine violations to normality for this small sample size (Meyers et al., 2006). Note that there were no violations to the assumption of normality in Table 37 causing the researcher to keep all dependent variables and precede with data analyses (Meyers et al., 2006).

Table 37

Shapiro-Wilk Test Results for Normality for Teacher Experience (n = 90)

Dependent Variable	Teacher Experience	*Shapiro-Wilk*		
		Statistic	*df*	Sig.
TSE	Early	.972	30	.606
	Middle	.983	30	.908
	Late	.978	30	.774
TGV	Early	.978	30	.774
	Middle	.961	30	.331
	Late	.916	30	.021
TSR	Early	.964	30	.390
	Middle	.937	30	.074
	Late	.899	30	.008
TEP	Early	.966	30	.432
	Middle	.960	30	.312
	Late	.976	30	.719

Note. TSE = teacher self-efficacy; TGV = teacher goal valuation; TSR = teacher self-regulation; TEP = teacher environmental perception; Early (1 – 10 years); Middle (11 – 20 years); Late (20 - 30^{+} years)

Assumption of linearity. Linearity was used to determine the linear relationships between the variables (Meyers et al., 2006). Visual inspection of the bivariate scatterplots for linearity for teacher experience (n = 90) and academic self-perception, attitudes towards teachers

and classes, attitudes toward school, goal valuation, and motivation/self-regulation as dependent variables revealed no violations to the assumption of linearity (Meyers et al., 2006).

Assumption of sphericity. The Bartlett's Test for Sphericity was conducted to determine the equality of the differences of variance (Meyers et al., 2006). A significant correlation (approximate *chi square* = 491.103, $p < .001$) was found between the dependent variables indicating that they are different allowing for the continuation of data analysis.

Assumption of independence. An analysis of the means for the reduced sample size revealed difference between them indicating no violations to the assumption of independence.

Assumptions of the homoscedasticity. A Box *M* Test of Equality with an alpha level of $p < .001$ was conducted to determine if the norm distribution exist between the dependent variables (Meyers et al., 2006) of teacher experience. The assumption of equal dependent variables covariance matrices has been not violated as seen in Table 38 allowing for the continuation of the data analyses.

Table 38

Box's Test of Equality of Covariance Measures for Research Question Three Data

Statistic	Value
Box's M	24.600
F	1.942
df1	12.000
df2	32779.957
p	.025

Assumptions of the correlations of the dependent variables. Correlations were obtained between the four dependent variables of the teachers' views students' academic self-efficacy (TSE), goal valuation (TGV), self-regulation (TSR), and environmental perceptions (TEP). The criterion for evaluating the correlations of the dependent variables was set at 0.7 (Meyers et al., 2006). Statistical correlations can be found in Table 39 between all four of the dependent variables indicating the existence of strong relationships between the dependent variables.

Table 39

Pearson Product-Moment Correlations between Dependent Variables (n = 90)

	TSE	TGV	TSR	TEP	Teacher Experience
TSE	-				
TGV	.723**	-			
TSR	.761**	.880**	-		
TEP	.205	.082	.105	-	
Teacher Experience	.114	.220*	.206	-.006	-

Note. TSE = teacher self-efficacy; TGV = teacher goal valuation; TSR = teacher self-regulation; TEP = Teacher environmental perceptions. * $p < .05$, two-tailed. ** $p < .01$, two-tailed.

Violations to the assumption of correlations of the dependent variables existed for teacher self-efficacy, teacher goal valuation, and teacher self-regulation. Each exceeded the criterion of 0.7.

Rectification for the violation of the assumption of correlations of the dependent variables. Values above a .7 for the dependents variable self-efficacy, goal valuation, and self-

regulation indicated that are strongly correlated with one another. The decision was made by the researcher to remove three subscales from this study as a remediation to the assumption of correlations of the dependent variables (Meyers et al., 2006).

Research Question Three

The analysis for research question three was able to be conducted because the multivariate statistical assumptions were not violated.

One-Way ANOVA Analyses

A One-way ANOVA was conducted to determine if significant differences existed between the independent variable of teacher experience and the dependent variable of teacher environmental perceptions as teachers' views of factors affecting high school students' academic achievement.

Means and standard deviations. Table 40 illustrates the mean scores, standard deviation, and sample size for each independent and dependent variable.

Table 40

Descriptive Statistics for Research Question Three: A One-way MANOVA (*n = 89)*

Dependent Variable	Teacher Experience	*Mean*	*Standard Deviation*
TEP	Early	3.68	.279
	Middle	3.74	.472
	Late	3.68	.384

Note. Early (1 – 10 years); Middle (11 – 20 years); Late (20 – 30^{+} years)

An analysis of the *F* statistic was conducted to assess the existence of differences in variances between each group (Meyers et al., 2006) using the Tests of Between-Subjects Effects

values as seen in Table 41. No statistical significance was reported for teacher experience, $F(2, 86) = .250$, $p = .779$, and the teachers' views of environmental perceptions as a factor affecting high school students' academic achievement as seen in the table below.

Table 41

Multivariate Test for Teacher Experience Using Tests of Between-Subjects Effects

Source	Type III Sum of Squares	*df*	Mean Square	*F*	Sig.	*Partial Eta Squared*
Corrected Model	.075[a]	2	.038	.250	.779	.006
Intercept	1219.108	1	1219.108	8117.119	.000	.990
Teacher Experience	.075	2	.038	.250	.779	.006
Error	12.916	86	.150			
Total	1232.545	89				
Corrected Total	12.992	88				

a. $R^2 = .006$ (Adjusted $R^2 = -.017$).

High school teachers' views of environmental perceptions as a factor affecting high school students' academic achievement were the same for teachers' level of experience, early career, middle career, and late career. Therefore, no further statistical analysis was needed as a follow-up to these results.

Research Question Four

What are high school teachers' and students' perceptions of the causes and solutions of underachievement? This question was answered through the use of two individual groups. A qualitative research analysis occurred to determine emerging themes from both teachers and

students who were asked to state the causes of high school students' underachievement and solutions to resolve their underachievement. Triangulation was sought between the emergent qualitative themes and the quantitative data.

Brief Overview of the Open-ended Responses

A general qualitative research design (Caelli et al., 2003) was selected to analyze both the high school teachers' and students' open-ended responses to provide as analysis of their thoughts on academic underachievement, for participation at one site, the same high school (Bogdan & Biklen, 2007; Locke et al., 2010). The teachers' and students' views on factors influencing underachievement were assessed. The student and teacher participants were asked the same two questions on their respective surveys,: "What are some reasons why students do not do as well as they could (underachieve) in their classes?" and "Can you suggest possible solutions to help those students who are struggling in some of their classes but are doing well in other classes?" (Refer to *Appendices* A and B) to view the surveys.

Group one: Teachers. The sample of teachers selected for this study taught at the same high school that the student participants attended. The teacher group (n = 143) consisted of only those teachers who had students enrolled in courses at the time of the study and had completed the *High School Teachers' Views on High School Students Doing Well in School* survey. Table 42 reveals that teachers who were sampled varied in gender, ethnicity, and their number of years teaching. Variations in the content areas taught by the sampled group are shown in Table 43.

Table 42

Teacher Demographic Data: Gender, Race/Ethnicity, and Years Teaching

Demographic Data		Teacher Frequency
Gender	Males	62
	Females	77
	Total	139
Race/Ethnicity	Caucasian	111
	African American	7
	Hispanic/Latino	6
	Other	9
	Multiracial	3
	Total	136
Years Teaching	0 – 10	47
	11 – 20	59
	21 – 30	22
	31 – 40	13
	Total	141

Table 43

Teacher Demographic Data: Content Areas Taught

Content Areas	Frequencies
Art/Music	14
Career and Technical Education	14
English	22
English as a Second Language	2
Health/Physical Education	9
History/Social Studies	20
Mathematics	21
Science	22
Special Education	10
World Languages	6
Total	146

Group two: Students. The student group (n = 430) consisted of those students who reported their grade level and gender in the *High School Students' Views on Doing Well in School* survey. A representative sample (n = 172) of the entire student sample population was selected by grade level and gender for qualitative analysis. Baker and Edwards (2012) and Mason (2010) suggested that the sample size for qualitative doctoral work range from 40 – 50 persons. Because the sample population was large, it was decided to utilize 40% of the sample population for each grade level for the analysis of emerging themes as reported in Table 44.

Table 44

Frequencies of Student Sample (n =172) for Research Question Four

Grade Level	Gender	*n*	Qualitative *n*	Percentage
9	Female	37	15	40.5%
	Male	18	7	38.9%
10	Female	84	33	39.3%
	Male	59	24	40.7%
11	Female	94	38	40.4%
	Male	68	27	39.7%
12	Female	45	18	40.0%
	Male	25	10	40.0%
Total		430	172	40.0%

Researcher Reflexivity

Research reflexivity is a "validity procedure whereby researchers report on personal beliefs, values, and biases that may shape their inquiry" (Creswell & Miller, 2000, p. 127) acknowledging "the influence the researcher brings to the research process" (Kuper, Lingard & Levinson, 2008, p. 698). Researchers must be objective when analyzing data (Corbin & Strauss, 2008) to prevent their assumptions, beliefs, and biases (Corbin & Strauss, 2008; Creswell & Miller, 2000) from impacting the analysis of qualitative data. The researcher reflected on her assumptions, beliefs, and biases (Corbin & Strauss, 2008; Creswell & Miller, 2000; Gall et al., 2007) about the anticipated high school students' and teachers' responses to the two qualitative survey questions prior to the transcription and coding of each group's data.

It was the researcher's belief and assumption that the student population would repeatedly state that the teachers were the primary cause of their underachievement. This belief biased my assumption that the students would indicate the removal of teachers as a predominant solution to resolving high school students' underachievement. It was the researcher's belief and assumption that the teachers would indicate that the students' actions and behaviors were the causes of their underachievement. This belief biased my assumption that the teachers would report changes to the students' behaviors as possible solutions to resolving high school students' underachievement.

The researcher was well aware of these beliefs and assumptions throughout the qualitative data analysis. Therefore, when a survey response was unclear or incomplete, the researcher did not try to interpret its meaning. All teacher and student responses which required the researcher to question the meaning of the response were provided with the code of vague response (n = 81) and were not privy to further analysis. This reduced the number of responses for data analyses in each case study while maintaining the "credibility, transferability, dependability, and confirmability" (Gall et al., 2007, p. 473) ensuring the quality and rigor of the study (Gall et al., 2007).

Audit Process

An external audit of the qualitative data was conducted to ensure the validity of the research findings. The purpose of the audit was to determine the accuracy of the coding process for all responses (Creswell & Plano-Clark, 2011). A peer examination (Gall et al., 2007) was conducted by the auditor to determine if the emergent themes and core categories were grounded in the data and not the result of research bias. The reliability of the qualitative findings was to be exhibited through the establishment of intercoder agreement (Creswell & Plano-Clark, 2011) between the researcher and the auditor for the qualitative findings.

The researcher provided the auditor with all qualitative data. The researcher's bias was reported to the auditor prior to the analysis of data. A codebook was constructed to explain the coding process as conducted by the researcher and define all codes used in the data analyses providing an audit trail (Gall et al., 2007). The auditor randomly selected portions of the qualitative data and coded them using the codes defined by the researcher to determine the existence of intercoder agreement. The initial examination of teacher data resulted in 100% intercoder agreement. The initial examination of the student data resulted in 89% intercoder agreement. These initial results were discussed between the researcher and the auditor causing changes to be made improving the intercoder agreement to 92% between the researcher and the auditor (See *Appendix* K) for the student data. The auditor did confirm the coding process used by the researcher and did not offer any suggestions for modification.

Generation of Core Categories for Group One. Thematic codes share certain similarities which are inclusive of the higher-level concepts (Corbin & Strauss, 2008) found within the data. These thematic codes are grounded in motivation and attribution theories allowing for the combination of data resulting in data reduction (Corbin & Strauss, 2008). Ten thematic codes: academic support attendance; causal attribution; factors affecting motivation; family impact on student underachievement; pre-requisite skills; school impact on student underachievement; self-regulatory skills; societal impact on student underachievement; and valuing education resulted from the analyses of the axial codes assigned to each response. Forty-nine responses, which accounted for 4.9% of the teachers' qualitative data, consisted typically of one word making it difficult to thematically code and categorize them into the core categories.

The integration (Corbin & Strauss, 2008) of these 10 thematic codes allowed for the creation of five core categories. The core categories of environmental factors affecting student

underachievement, motivation, student attendance, students' behaviors and skills, and support skills and strategies represent the main ideas generated from within the teachers' responses (Corbin & Strauss, 2008). The core categories of student attendance, environmental factors affecting student underachievement, motivation, and students' behaviors and skills reflected the teachers' perspectives of the causes of high school students' underachievement while the core category of support skills and strategies developed from the teachers' solutions for resolving high students' underachievement.

Emergent Core Categories for Teacher Data

The following core categories emerged from an interpretational analysis (Gall et al., 2007) of all qualitative data for the construct of underachievement as a result of analysis of the teachers' responses to the two survey questions on the *High School Teachers' Views on High School Students Doing Well in School* survey as seen in Table 45.

Table 45

Percentage of Axial Codes Generated for Each Core Category of Teacher Data

Question	Core Category	Total Axial Codes	Percentage
Causes	Environmental Factors Affecting Student Underachievement	222	35.1%
	Motivation	222	35.1%
	Student Attendance	56	8.9%
	Students' Behaviors and Skills	126	19.9%
	Support Services and Strategies	6	1.0%
Grand Total		632	100.0%
Solutions	Environmental Factors Affecting Student Underachievement	100	31.0%
	Motivation	39	12.0%
	Student Attendance	11	3.4%
	Students' Behaviors and Skills	17	5.3%
	Support Services and Strategies	156	48.3%
Grand Total		323	100.0%

Environmental Factors Affecting Student Underachievement. Environmental factors affecting student underachievement emerged as a core category from the teachers' responses to both survey questions on the *High School Teachers' Views on High School Students Doing Well in School* survey. It is composed of three thematic codes, family, school, and societal impact of underachievement. Teacher responses which related to students' family or household were grouped together within theme of family impact of student underachievement. The influential role of the school and its teachers within the data generated the thematic code of school impact on student underachievement. Societal impact of students' underachievement emerged from teachers' responses which identified the role and influence of society and its beliefs as factors affecting academic achievement. Current trends in technology and its usage, social media and networking, and educational policies at the federal and state levels were factored into the creation of the societal impact code. All of these causes and solutions with this core category were externally attributed as seen in Table 46.

Table 46

Core Categories, Coding Levels, and Frequencies to Underachievement for Environmental Factors Affecting Student Underachievement

Core category	Question	Thematic Code	Attribute Code	Axial Codes	Frequency
Environmental	Causes	Family Impact	External	Basic needs not met	29
Factors Affecting			External	Familial distractions	25
Student			External	Lack of parental involvement/support	66
Underachievement			External	Lack of role models	9
		School Impact	External	School controlled causes	21
			External	Teacher controlled causes	12
		Societal Impact	External	Educational policies	10
			External	Societal attitudes	31
			External	Technological distractions	19
Total					222

(continued)

Table 46

Core Categories, Coding Levels, and Frequencies to Underachievement for Environmental Factors Affecting Student Underachievement

Core category	Question	Thematic Code	Attribute Code	Axial Codes	Frequency
Environmental	Solutions	Family Impact	External	Meet basic needs	3
Factors Affecting			External	More parental involvement/support	10
Student		School Impact	External	School controlled solutions	45
Underachievement			External	Teacher controlled solutions	35
		Societal Impact	External	Reform educational policies	3
			External	Changes to societal attitudes	1
			External	Discontinue technological distractions	3
Total					100

Causes of underachievement. The environmental factors affecting student underachievement were derived from teachers' responses speaking to family, school, and society as factors causing the underachievement of high school students.

Family impact on student underachievement. Teachers reported that high school students' were deficient in the familial areas of parental involvement and support and the availability of role models at home. For example, one teacher reported that the cause of high school students' underachievement was the lack of having their basic needs of "sleep, food, money, and shelter" met at home. Various family dynamics were viewed by the teachers as causes of students' underachievement in that they caused distractions for the students. Distractions such as "large families to provide for, drug addiction, and other unspecified family issues" were viewed to be causes of the students' underachievement.

School impact on student underachievement. For this thematic code, the causes to students' underachievement were either impacted by the school, school policies, school dynamics, and school leadership or by the teachers and the occurrences in their classrooms. Teachers identified scheduling, student placements in classes, large class sizes, and a lack of communication between teachers and students, parents, fellow teachers, and guidance counselors as school-based causes for students' underachievement. Those same teachers identified educators as having "low student expectations" and ineffective teaching styles and strategies as causes for student underachievement.

Societal impact on student underachievement. Teachers reported that testing and other non-specified educational policies as causes for students' underachievement. Similarly, societal attitudes of student complacency and mediocrity were also reported. Technological

advancements such as “cell phones, computers, video games, and iPods” and “social media” were viewed as distractions for the students which led to low academic performance.

Possible solutions for resolving underachievement. Solutions, dependent upon changes to the students’ family, school, and society, were externally attributed as possible solution for resolving high school students’ underachievement.

Family impact on student underachievement. The suggested solutions were grounded in the family’s impact on the students. Teachers suggested that the students’ “basic needs be met” and called for “more parental involvement and support” as resolutions for student underachievement.

School impact on student underachievement. The school and its teachers were also viewed as external attributes to resolve students’ underachievement. The establishments of “effective student scheduling, smaller class sizes, discipline-based school policies, and a safer school environment” were suggested by a teacher as solutions governed by the school. It was recommended that the school provide “more teacher prep time and trainings” to help address student underachievement. Creating stricter classroom rules and responsibilities, establishing relevancy between the content and the students, becoming more effective communicators with the students, and implementing effective teacher practices were some teacher controlled solutions which could remedy underachievement.

Societal impact on student underachievement. Externally attributed solutions calling for the reformation of educational policies and societal attitudes towards students, such as their expectancy towards receiving answers, as well as the discontinued use of technological tools for nonacademic purposes were reported by the teachers as possible resolutions to academic underachievement.

Motivation. The core category of motivation focused on causal attribution, factors affecting motivation, and valuing education as three factors contributing to high school students' underachievement. Axial codes which included ability, effort, chance or luck, and task difficulty were combined to form the causal attribution thematic code. The thematic code of factors affecting motivation was generated to include the following axial codes: goal setting, self-efficacy, peer pressure, intrinsic motivation, and environmental perceptions. Causal attribution and factors affecting motivation as thematic codes exhibited aspects of attribution and or motivation theory. Codes contained within the theme of valuing education were inclusive of responses indicating a lack of value or importance placed on education. Data for each thematic code are reported in Table 47.

Table 47

Core Categories, Coding Levels, and Frequencies to Underachievement for Motivation

Core Category	Question	Thematic Code	Attribute Code	Axial Codes	Frequency
Motivation	Causes	Causal Attribution	Internal	Ability	1
			Internal	Effort	24
			External	Task difficulty	2
			Internal	Task difficulty	1
		Factors Affection Motivation	Internal	Goal setting	11
			Internal	Self-efficacy	21
			External	Peer pressure	7
			Internal	Intrinsic motivation	31
			External	Environmental perceptions	6
			Internal	Environmental perceptions	47
			Total		151

(continued)

Table 47

Core Categories, Coding Levels, and Frequencies to Underachievement for Motivation

Core Category	Question	Thematic Code	Attribute Code	Axial Codes	Frequency
Motivation	Causes	Valuing Education	External	Lack of valuing education	14
			Internal	Lack of valuing education	57
			Total		71

(continued)

Table 47

Core Categories, Coding Levels, and Frequencies to Underachievement for Motivation

Core Category	Question	Thematic Code	Attribute Code	Axial Codes	Frequency
Motivation	Solution	Causal Attribution	Internal	Effort	3
			Internal	Ability	1
		Factors Affecting Motivation	Internal	Goal setting	3
			External	Self-efficacy	2
			Internal	Self-efficacy	1
			Internal	Intrinsic Motivation	4
			External	Environmental perceptions	1
			Internal	Environmental perceptions	4
		Valuing Education	External	Value education	2
			Internal	Value education	18
			Total		39

Causes of underachievement. The thematic codes of causal attributions, motivational factors, and valuing education emerged from the data in response to the survey question which asked for causes of high school students' underachievement.

Causal attribution. The causal attributions of ability and effort were attributed to the internal causes of high school students' underachievement while task difficulty was externally attributed to their underachievement. Teachers' reported that the students' "lack of effort" for completing assignments, "not wanting to work, a lack of work ethic, and variations in difficulty of tasks" as causes of their underachievement.

Factors affecting motivation. Teachers reported that students' "lack dreams and goals for the self, have neither long-term goal setting nor a desire to achieve at a higher level, are not seeing the connection to their goal, and have no clear goals for the future" as causes of underachievement. They also blamed the students' lack of self-efficacy as exhibited in the following response, "lack confidence, give up on themselves, and have low self-esteems." Teachers externally attributed "peer pressure" as another cause for high school students' underachievement while intrinsic motivation was internally attributed. For example, teachers expressed that the students' "lack of self-motivation, care, and passion" were the causes inhibiting their abilities to academically achieve.

Responses discussing environmental perceptions generated the highest number of causes for high school students' underachievement. These responses were labeled as internally or externally oriented. One teacher stated that the "students' attitudes towards and interest in their classes, school, and teachers" were causes of underachievement. The responses identified as internal attributes of environmental perceptions were generated from teachers' responses addressed students' interest and attitude towards their classes, school, and teacher. The external

attributes focused of the class, school, and/or teacher affecting the attitudes and interests of the students.

Valuing education. Teachers identified factors which internally and externally attributed to high school students' underachievement. They reported that the students' "lack of caring for school and their education" and "apathy" towards schooling resulted in their underachievement. External attitudes from parents and teachers, and the culture of the school were also reported as causes for students' underachievement, implying that an external attribute can influence the students' internal attribution towards underachievement.

Possible solutions for resolving underachievement. The suggested solutions offered by teachers to possibly resolve underachievement were also attributed to the thematic codes of causal attributions, factors affecting motivation, and valuing education.

Causal attribution. Four teachers' identified ability and effort as possible solutions to resolve high school students' underachievement. These teachers reported that an increase in the students' effort and the successful use of their abilities should resolve their underachievement.

Factors affecting motivation. Some teachers expressed the internal need for high school students "to believe and want it" while others cited the use of external sources as a means of providing students with "encouragement and incentives" to "help them improve their confidence" to resolve their underachievement. Teachers suggested that students should "relate the content to their lives" and should, also, be motivated to study as a way of resolving underachievement.

It was further suggested that students' attitudes towards the school, teachers, and classes should be determined to potentially resolve their underachievement. Changes to the high school students' perceptions of their classes, school, and teachers were viewed as possible internal

solutions to resolving their underachievement. Teachers expressed that changes could also be made to the school, its classes, and its teachers which can positively affect the students' attitudes and interests.

Valuing education. Teachers believed that if "students were to care more" or "see the value in education" then their underachievement could possibly be resolved. These two types of responses provided 18 possible internal solutions to resolve high school students' underachievement. Two teachers provided external solutions that recommended changes to the family's and society's attitudes towards the importance of an education as possible solutions to resolve underachievement.

Student Attendance. The core category of student attendance was generated from 6.7% of the teachers' responses to the two questions on the *High School Teachers' Views on High School Students Doing Well in School* survey. Responses categorized under the thematic code of attendance were neither internally nor externally attributed to the causes of underachievement because of their ambiguity and lack of details. Attendance also emerged as thematic code when determining the solutions for high school students' underachievement as seen Table 48.

Table 48

Core Categories, Coding Levels, and Frequencies to Underachievement for Student Attendance

Core Category	Question	Thematic Code	Attribute Code	Axial Codes	Frequency
Student Attendance	Cause	Attendance	Neither Interval Nor External	Attendance	35
			Neither Interval Nor External	Poor attendance	12
			Neither Interval Nor External	Tardiness	5
			Neither Internal Nor External	Truancy	4
Total					56
	Solutions		External	Absenteeism prevention program	3
			External	Better attendance	5
			External	Consequences for attendance	2
			External	Offer incentives for attendance	1
Total					11

Causes of underachievement. Some teachers believed that students' attendance was a factor which could result in the academic underachievement of high school students. They reported students' "lateness, excessive absenteeism, and cutting of class" as contributing factors to "poor attendance" at school. All of which were responsible for their underachievement.

Possible solutions for resolving underachievement. As possible solutions, teachers reported that students should "[attend] class daily, stop cutting class, and arrive on time." Teachers suggested improving attendance, implementing an absenteeism prevention program, enforcing consequences for negative attendance behaviors, and offering incentives to combat absenteeism form school.

Students' Behaviors and Skills. The core category of students' behaviors and skills was generated from the combination of the findings within the thematic codes of pre-requisite skills and self-regulatory behaviors as seen in Table 46. The thematic code of pre-requisite skills addressed the role students' pre-requisite knowledge and academic skills needed by students to succeed in high school courses while self-regulatory behaviors was inclusive of the students' responsibilities, the choices they make, and their actions and behaviors conducted in the academic setting.

Table 49

Core Categories, Coding Levels, and Frequencies to Underachievement for Students' Behavior and Skills

Question	Core category	Thematic Code	Attribute Code	Teacher Responses	Frequency
Causes	Students'	Pre-Requisite Skills	Internal	Lack content pre-requisite foundations	24
	Behaviors		Internal	Lack study skills and strategies	6
	and Skills		Internal	Poor literacy skills	11
		Self-Regulatory	Internal	Do not compete work	26
		Behaviors	Internal	Do not study	12
			Internal	Possible learning disability	23
			Internal	Lack class participation	4
			Internal	Lack organization and preparation	16
Total					122

(continued)

Table 49

Core Categories, Coding Levels, and Frequencies to Underachievement for Students' Behavior and Skills

Question	Core category	Thematic Code	Attribute Code	Teacher Responses	Frequency
Causes	Students' Behaviors and Skills	Self-Regulatory Behaviors	Internal	Lack self-discipline	3
			Internal	Never overcame failure	1
Total					4

(continued)

Table 49

Core Categories, Coding Levels, and Frequencies to Underachievement for Students' Behavior and Skills

Question	Core category	Thematic Code	Attribute Code	Teacher Responses	Frequency
Solutions	Students' Behaviors	Pre-Requisite	External	Build pre-requisite skills	2
	and Skills	Skills	External	Improve literacy skills	2
			External	Improve study skills	1
		Self-Regulatory	Internal	Complete homework	4
		Behaviors	Internal	Get organized	2
			Internal	Pay attention	1
			Internal	Study	4
			Internal	Take personal responsibility	1
Total					17

Causes of underachievement. Teachers' generated responses which discussed high school students lack of pre-requisite skills and self-regulatory behaviors as causes for their underachievement.

Pre-requisite skills. Teachers 'attributed the lack of students' content knowledge of pre-requisite skills as a cause of high school students' underachievement. Teachers' expressed this belief by providing examples of how students' lack of knowing "their multiplication tables" or not having "mastered basic arithmetic" for a high school mathematics class as causes of underachievement. They also noted that when high school students "lack a strong background in basic skills" or are "not properly prepared from previous courses," they may underachieve in school. Teachers also identified high school students' "low level reading skills, low reading comprehension, and "poor writing" as causes of their underachievement. Teachers also reported that high school students' are lacking in study skills or have been poorly prepared in the area of study skills.

Self-regulatory behaviors. Factors identified by teachers as causes for high school students' underachievement were: failure to complete classwork and homework assignments, poor organization skills, inadequate preparation for class, low class participation, problems studying for quizzes and tests, low self-discipline, possible learning disabilities, a lack of focus and attention which may be the result of a learning disability. All of these factors labelled as were internal causes of high school students' underachievement.

Possible solutions for resolving underachievement. The axial codes generated by the teachers' suggested solutions to resolving underachievement addressed students' pre-requisite skills and self-regulatory behaviors.

Pre-requisite skills. Five teachers stated that improving high school students' pre-requisite skills would be a possible solution to underachievement. One teacher provided the following response when asked to suggest ways to resolve this problem, "improve reading and writing skills, teach literacy skills, and build strong foundations early."

Self-regulatory behaviors. Teachers attributed changes to high school students' self-regulatory behaviors as a possible solution to their underachievement. They suggested that students do the following: become organized, "stay organized with class materials, complete their homework, pay attention in class, review class work daily, and take personal responsibility of their education" as possible internally orientated solutions for resolving high school students' underachievement.

Support Services and Strategies. The thematic code of academic support was generated from teachers' responses which discussed the impact of offering support services and strategies to students has on their underachievement can be seen in Tables 50.

Table 50

Core Categories, Coding Levels, and Frequencies to Underachievement for Support Services and Strategies

Question	Core Category	Thematic Code	Attribute Code	Axial Codes	Frequency
Causes	Support Services and Strategies	Academic Support	Internal	Lack of studying knowledge	1
			Internal	Do not attend available help	2
			External	Lack of good external supports	2
			External	Lack of available technology	1
Total					6

(continued)

Table 50

Core Categories, Coding Levels, and Frequencies to Underachievement for Support Services and Strategies

Question	Core Category	Thematic Code	Attribute Code	Axial Codes	Frequency
Solutions	Support Services and Strategies Solutions	Academic Support	Internal	Utilize self-regulation strategies	9
			External	Student conferences	12
			External	Study strategies	7
			External	Teaching strategies in class	7
			External	Enrichment/Skills classes	15
			External	Extra help/tutorials	58
			External	Mentoring	6
			External	Provide parental support	5
			External	Provide school support	13
			External	Reward systems	6
			External	Tutoring	18
Total					156

Causes of underachievement. A lack of external support being offered to students and the limited availability of technological resources were externally attributed by teachers as causes of underachievement. Two teachers internally attributed students' failure to attend available help provided by teachers as a cause for underachievement. Another teacher expressed the belief that "many [students] have never been taught to study" impacting their ability to achieve.

Possible solutions for resolving underachievement. The teachers suggested that high school students should be provided with enrichment and skills courses which can provide support to improve the students' study, organizational, and academic skills. Teachers offered the implementation of "after school help, tutorials, extra help sessions, extra help rooms, peer mentoring, peer tutoring, and "private tutoring" as possible solutions to resolving high school students' underachievement. Another possible solution was to offer rewards to the students in the form of "movie tickets, ice cream sundaes, and gift certificates" as incentives to increase achievement. It was also suggested that teachers should communicate with parents to help "get parents on the teacher's side." Teachers believed that an increase in the availability of school media services to high school students was a way the school could help to improve their underachievement.

Thirty-five teachers provided their solutions for resolving high school students' underachievement. They reported that conferences with students should be held to determine "how they feel about the subject matter and the teacher" and "why this [underachievement is] happening." It was suggested that teachers "teach and reinforce strategies in all." They also reported that students' should be taught how to study and be provided with test taking strategies which could be applied to all of their classes. Teachers recommended that high school students

"get organized, ask questions, use a calendar for due dates of homework, tests, and projects, keep a chart of [their] grades, and spend "more time at home studying and spend more time after school with teachers" as self-regulatory strategies for resolving their underachievement.

Summary of Findings for Teachers

High school teachers provided a greater number of causes (n = 632) for high school students' underachievement than possible solutions (n = 323) to resolving their underachievement as evidenced in the number of subordinate codes. The data revealed that teachers' responses could be coded as originating from an internal, external, and neither internal nor external causes. Internally attributed factors accounted for 50.9% of the teachers' responses while externally attributed factors accounted for 40.2 % of the axial codes. Student attendance was neither an internal nor external factor accounting for 8.9% of the teachers' perceived causes of high school students' underachievement because teachers provided one word responses, such as "attendance, tardy, and truancy" which were not able to be classified as internal or external causes. Externally attributed solutions accounted for 83.97 % of the teachers' responses to survey question two while 17.03% of the teachers' responses to question two were internally attributed solutions.

The core category of motivation (n = 193) contained the greatest number of internally attributed student factors as causes of high school students' underachievement as compared to the core category of environmental factors (n = 222), which contained the greatest number of externally attributed causes. The largest number of externally attributed solutions to possibly resolving students' underachievement were reported in the core categories of support services and strategies (n = 147).

Overview of Student Coding

Theoretical comparisons (Corbin & Strauss, 2008) were made after conducting the analyses determining the students' perspectives (Miles & Huberman, 1994) on what causes high school students' underachievement and their suggested strategies (Miles & Huberman, 1994) for resolving their academic underachievement.

Students, responses were divided into 1298 segments. Each was assigned an open code for data analysis. Axial codes were generated from concepts (Corbin & Strauss, 2008) derived from the data. Forty students' responses which would require interpretation to thematically code and categorize them into the core categories were assigned an axial code of vague response and were not thematically coded. Twenty-seven students chose not to respond to the two survey questions. Ten students provided answers that did not address the questions. These participants were deleted from this analysis. These deleted students' responses accounted for 5.9 % of the total responses generated by the *High School Students' Views on Doing Well in School* survey.

Data saturation was encountered after entering and coding 40% of the students' qualitative entries. No new concepts were being generated from the analysis of students' responses to the survey questions (Corbin & Strauss, 2008; Morse, Barrett, Mayan, Olson, & Spiers, 2002). To confirm that data saturation had been met, 10 surveys were randomly selected to determine the existence of new concepts with the student data. This yielded no new codes supporting that data saturation had been met for the student data discontinuing the further analysis of other student surveys.

Sixty-five axial codes were generated from the consolidation of related concepts that were identified in the 1298 open codes. The students' responses possessed internal and external attributes which were revealed during the open coding of the data. Attribution codes were also

assigned to each segment of the data in addition to the open codes. The six attribution codes of internal, external, internal: may be the result of a learning disability, external affecting internal, external: needs to be initiated by the student, and neither internal nor external were attribution concepts found in the student data.

Generation of Core Categories for Group Two

Analyses of the axial and attribution codes resulted in the development of the following thematic codes (Corbin & Strauss, 2008): family, school, and societal impact on underachievement; causal attribution; factors affecting motivation; valuing education; attendance; self-regulatory behaviors; and academic support. These codes were generated because the shared certain similarities which are inclusive of the higher-level concepts (Corbin & Strauss, 2008) found within the data. These thematic codes are grounded in motivation and attribution theories allowing for the combination of data resulting in data reduction (Corbin & Strauss, 2008). All thematic codes were further refined to form core categories.

The integration (Corbin & Strauss, 2008) of the 10 thematic codes allowed for the creation of five core categories. The core categories found within the data were inclusive of theoretical and or conceptual similarities (Corbin & Strauss, 2008; Thomas, 2006). These core categories are grounded in motivation and attribution theories which allowed for the combination and consolidation of the data (Corbin & Strauss, 2008) summarizing the themes which emerged from the data (Thomas, 2006). Five core categories: environmental factors affecting student underachievement; motivation; student attendance; students' behaviors; and support service and strategies emerged from the student data in response to the two questions, each asking for causes of high school students' underachievement and resolutions for high school underachievement, respectively.

Emergent Core Categories for Student Data

The following core categories emerged from an interpretational analysis (Gall et al., 2007) of all qualitative data for student responses to the two open ended questions about the causes and possible solutions for resolving their underachievement. Table 51 reports the percentage of axial codes generated for each of the five core categories: environmental factors affecting student underachievement; motivation; student attendance; student behaviors and skills; and support services and strategies.

Table 51

Percentage of Axial Codes Generated for Each Core Category of Student Data

Question	Core Category	Total Axial Codes	Percentage
Causes	Environmental Factors Affecting Student Underachievement	267	37.6%
	Motivation	320	45.1%
	Student Attendance	20	2.8%
	Students' Behaviors and Skills	99	13.9%
	Support Services and Strategies	4	0.6%
Grand Total		710	100.0%
Solutions	Environmental Factors Affecting Student Underachievement	119	23.3%
	Motivation	74	14.5%
	Student Attendance	3	0.6%
	Students' Behaviors and Skills	33	6.5%
	Support Services and Strategies	281	55.1%
Grand Total		510	100.0%

Environmental Factors Affecting Student Underachievement. The environmental factors affecting student underachievement were derived from students' responses about family, school, and society as factors causing and possibly resolving the underachievement of high school students. The students' indicated that parental involvement in students' lives, family dynamics, and household conditions and circumstances were factors in both causes and resolutions for academic underachievement. School and teacher controlled factors are the axial codes related to school impact. Societal factors were both causes and possible solutions related to underachievement. The data for this core category were reported in Table 52.

Table 52

Students' Core Categories, Coding Levels, and Frequencies to Underachievement for Environmental Factors Affecting Student Underachievement

Question	Core category	Thematic Code	Attribute Code	Axial Codes	Frequency
Causes	Environmental	Family Impact	External	Basic needs not met	12
	Factors Affecting		External	Familial responsibilities	15
	Student		External	Family troubles	20
	Underachievement		External	Lack of parental involvement/support	22
			External	Parental attitudes	3
		School Impact	External	School controlled causes	22
			External	Teacher controlled causes	125
		Societal Impact	External	Neighborhood affiliations	11
			External	Societal attitudes	12
			External	Technological distractions	23
Total					267

(continued)

Table 52

Students' Core Categories, Coding Levels, and Frequencies to Underachievement for Environmental Factors Affecting Student Underachievement

Question	Core category	Thematic Code	Attribute Code	Axial Codes	Frequency
Solutions	Environmental	Family Impact	External	Meet basic needs	1
	Factors Affecting		External	More parental involvement/support	8
	Student	School Impact	External	School controlled solutions	25
	Underachievement		External	Teacher controlled solutions	78
		Societal Impact	External	Reform educational policies	3
			External	Neighborhood affiliations	3
			External	Discontinue technological distractions	1
Total			Total		119

Causes of underachievement. High school students' externally attributed all causes of underachievement for the three thematic codes within the core category of environmental factors affecting student underachievement.

Family impact on student underachievement. Students reported a lack of parental involvement and support and the lack of basic needs as family controlled factors causing high school students to underachieve. They stated that, "students are not motivated by their parents, parents need to help, lack of support at home, and lack [of] resources, [such as] money, food, technology, and a stable home life" were all reasons why students did not achieve in school. They also reported that "some [students] have jobs, little brothers and sisters they have to take care of, or they might be having troubles at home."

School impact on student underachievement. For this students' reported that underachievement was impacted by the school, school policies, school dynamics, or by the teachers and their teaching. The students identified that the lack of help offered to them, low student standards, school academic policies and rules, or the school environment leading them to "feel unsafe" were causes of underachievement. The students' attributed the teachers' attitude towards the students and their teaching practices, the amount of work given to the students, and the lack of help offered to students as causes of underachievement. One student stated that "teachers under-estimate their students, teachers don't trust students and give them little responsibility" and another stated that classes were "not engaging."

Societal impact on student underachievement. Students reported that the availability of drugs and gangs in their neighborhoods, societal attitudes towards students and education, and the use of "cell phones, internet, social networking sites, video games, electronics, and TV" were causes of students' underachievement. It was stated that, "the [communities] in which students

live [do] not foster good education habits and on a societal level, our citizens tend to praise athletic prowess over intelligence, with millions [of dollars] put into football fields and basketball courts rather than classrooms and textbooks."

Possible solutions for resolving underachievement. The following externally attributed solutions were generated by students for the resolution of underachievement.

Family impact on student underachievement. Students reported that "someone needs to check up on them, and [that] parents should talk to their kids" as possible solutions resolving. They also suggested that families should meet the students' basic needs by "living in better conditions" and provide more support and help to their children as resolutions for underachievement.

School impact on student underachievement. The students suggested that there should be changes to the school's rules, academic policies, class size, environment, and teacher evaluations. They also mentioned that an increase in student responsibilities, parental communication, and the school's ability to motivate them as possible solutions to underachievement. These were coded as internal solutions. Possible solutions centered on the teacher were: changes to the teachers' attitudes about the students, changes to classroom instruction, changes to teaching strategies, a reduction in the amount of work given to the students, the establishment of a rapport with students, and an increase in teacher availability to help students. One suggested that teachers "give more of their time [to students] to learn something they're having difficulty learning, provide more group work in any class because some students aren't capable of learning enough [by] studying alone" and another recommended that "more teachers need to reach out in a better way" to the students.

Societal impact on student underachievement. Solutions called for the socioeconomic changes to the local neighborhoods, the reformation of educational policies, and a reduction in the use of technology. Unfortunately, none of the students suggested how these results could be achieved.

Motivation. The core category of motivation was generated from the thematic codes of causal attributions, factors affecting motivation, and valuing education. Casual attributions contained students' responses which discussed ability, effort and task difficulty. The following motivational factors were exhibited in the data: goal setting, self-efficacy, peer pressure, extrinsic and intrinsic motivation, and environmental perceptions. The thematic code of valuing education exhibited factors grounded in goal setting and motivation causing it to be grouped in the core category of motivation. Each thematic code is supported by students' responses to the causes of and possible solutions to resolve for high school students' underachievement as seen in Table 53.

Table 53

Students' Core Categories, Coding Levels, and Frequencies to Underachievement for Motivation

Questions	Core Category	Thematic Code	Attribute Code	Axial Codes	Frequency
Causes	Motivation	Causal Attribution	Internal	Ability	17
			Internal	Effort	76
			External	Task difficulty	4
		Factors Affecting Motivation	Internal	Goal setting	8
			Internal	Self-efficacy	11
			External	Peer pressure	34
			External	Extrinsic motivation	12
			Internal	Intrinsic motivation	92
			External	Environmental perceptions	27
Total					281

(continued)

Table 53

Students' Core Categories, Coding Levels, and Frequencies to Underachievement for Motivation

Question	Core category	Thematic Code	Attribute Code	Axial Codes	Frequency
Causes	Motivation	Valuing Education	External	Lack of valuing education	11
			Internal	Lack of valuing education	28
			Total		39

(continued)

Table 53

Students' Core Categories, Coding Levels, and Frequencies to Underachievement for Motivation

Question	Core category	Thematic Code	Attribute Code	Axial Codes	Frequency
Solutions	Motivation	Causal Attribution	Internal	Ability	1
			Internal	Effort	30
		Factors Affecting Motivation	Internal	Goal setting	5
			Internal	Self-efficacy	1
			External	Peer selection	6
			External	Extrinsic motivation	7
			Internal	Intrinsic motivation	10
			External	Environmental perceptions	2
		Valuing Education	External	Value education	4
			Internal	Value education	8
Total					74

Causes of underachievement. The following causes for underachievement were generated from axial codes used to generate the thematic codes of causal attribution, motivational factors, and valuing education.

Causal attribution. Ability and effort were coded as internal factors related to the causes of high school students' underachievement while task difficulty was coded as an external attribute of their underachievement. The sampled students expressed that high school students have difficulties "focusing" which may be due to "learning or emotional disabilities" and acknowledged that high school students have differences in their academic abilities. Students also reported that their peers "don't try" and that "laziness is another big [reason] why students do not do as well as they could."

Factors affecting motivation. Students' inabilities to set goals and possess realistic academic goals were reported causes of underachievement. Some students stated that their peers lack self-efficacy and the belief that they can learn which were responsible for them giving up. Others believed that students' self-efficacy levels were derived from not caring about others. Peer distractions, peer pressure, bullying and achieving popularity amongst their peers all influenced underachievement. A lack of external motivation imploring achievement and the completion of work, as well as, the students' lack of interest in school, apathy towards school, lack of self-motivation, and self-directed stress were all reported causes underachievement. Students' attitudes towards their classes, school, and teachers were noted to affect underachievement.

Valuing education. The sampled students reported an existence of apathy towards the importance of education as seen in the lack of value to receiving an education. They recounted

that the community and society had negative views on receiving an education and that parents did not teach their children about the importance of education.

Possible solutions for resolving underachievement. The following suggested solutions for resolving underachievement were either internally or externally attributed to high school students.

Causal attribution. Increasing ability and effort was a possible solution to resolve underachievement. One participant also said that students "should try a little bit harder [to] focus, dedicate more time to the material that is harder for you, and don't give up when it becomes difficult."

Factors affecting motivation. Students suggested that their peers should think about their future, set goals, and "get [their] priorities together, know [what you] would like to accomplish, and strive for your success." One student suggested that by "[making students] feel like they can do anything, that they are smart, and that they're [are] not alone" underachievement can be resolved. The students' recommended that their fellow schoolmates should "kick people out of [their] life that aren't a good influence, possibly change their friends" and reduce the number of peer distractions as ways of combatting underachievement. They also implored students to "look for a motivation that would help them as they go on, and find things [they] can relate to in the subject, and [not] try to fit with something [they are] not." Changes also need to be made to students' attitudes towards their classes, school, and teachers as possible solutions to resolving underachievement.

Valuing education. One student reported, "I have realized that in order to be successful I must get an education to further myself in the social ladder." Others suggested that classmates

understand that receiving an education is important. It was suggested that students be spoken to and that the value of an education be stressed in their classes.

Student Attendance. Responses categorized under thematic code of attendance were neither designated as an internal nor and external attribute because of the ambiguity and lack of details in the students' responses. These data are reported in Table 54.

Table 54

Students' Core Categories, Coding Levels, and Frequencies to Underachievement for Student Attendance

Question	Core category	Thematic Code	Attribute Code	Axial Codes	Frequency
Causes	Student Attendance	Attendance	Neither Internal Nor External	Truancy	20
			Total		
Solutions			External	Attendance intervention	2
			External	Truancy prevention program	1
			Total		
Grand Total					23

Causes of underachievement. The students' reported truancy from class as a cause of underachievement. They stated that "it is easy to skip class, some students just do not go to their classes, and one huge reason why kids do badly is because they skip school; it's their own choice, but it's a huge reason why kids do badly in school."

Possible solutions for resolving underachievement. The development of a truancy prevention program, and interventions where students are made aware of the effects of absenteeism or made to attend class were suggested solutions to resolving high school students' underachievement.

Students' behaviors and skills. The thematic code of self-regulatory behaviors was generated from students' responses which illustrated behaviors that students should possess to academically achieve. These responses included self-regulatory behaviors both inside and outside of an academic setting which affect their ability to achieve. All self-regulatory behaviors were coded internally attributed to the student as seen in Table 55.

Table 55

Students' Core Categories, Coding Levels, and Frequencies to Underachievement for Students' Behaviors and Skills

Question	Core Category	Thematic Code	Attribute Code	Axial Codes	Frequency
Causes	Students' Behaviors	Self-Regulatory	Internal	Do not accept responsibility of failure	1
	and Skills	Behaviors	Internal	Do not complete work	16
			Internal	Do not pay attention/possible LD	38
			Internal	Do not study	18
			Internal	Lack class participation	6
			Internal	Lack organization and preparation	9
			Internal	Participate in nonacademic behaviors	11
Total					115

(continued)

Table 55

Students' Core Categories, Coding Levels, and Frequencies to Underachievement for Students' Behaviors

Question	Core category	Thematic Code	Attribute Code	Axial Codes	Frequency
Solutions	Students' Behaviors and Skills	Self-Regulatory Behaviors	Internal	Be organized	3
				Conduct appropriate academic behaviors	13
				Do work	5
				Pay attention	12
Total					33

Causes of underachievement. The students reported low levels of the following self-regulatory behaviors as causes for underachievement: accepting responsibility for their failure, completing their homework and classwork, studying, asking questions, seeking help in class, taking notes, actively participating in class, exhibiting organizational skills, being prepared for class, and paying attention. Students easily distracted and they participate in nonacademic behaviors, such as "fighting, disrespecting the teachers, and [refusing to] listen to the teachers." It was suggested that high school students' lack of or difficulties paying attention maybe due to possible diagnosed or undiagnosed "learning disabilities, ADHD, or emotional issues."

Possible solutions for resolving underachievement. It was suggested that high school students "be organized, pay attention, and don't talk," attend to appropriate school behaviors, "do [their] work," and complete all homework and classwork as possible solutions for resolving their underachievement.

Support Services and Strategies. The thematic code of academic support, as seen in Table 56, was generated from students' responses which discussed the services and strategies high school students needed so they could academically achieve.

Table 56

Students Core Categories, Coding Levels, and Frequencies to Underachievement for Support Services and Strategies

Question	Core category	Thematic Code	Attribute Code	Axial Codes	Frequency
Causes	Support Services and Strategies	Academic Support	External	No available help	4
Solutions			External	Course option strategies	4
			External	Intervention strategies	3
			External	Note and testing strategies	9
			External	Study strategies	63
			External	Teacher support strategies	11
			Internal	Ask for help	16
			Internal	Ask questions	3
			Total		113

(continued)

Table 56

Students' Core Categories, Coding Levels, and Frequencies to Underachievement for Support Services and Strategies

Question	Core category	Thematic Code	Attribute Code	Axial Codes	Frequency
Solutions	Support Services and Strategies	Academic Support	Internal	Student initiative strategies	14
			Internal	Use of other resources	7
			External	Extra help services	87
			External	Interventional programs	8
			External	Rewards	7
			External	Tutoring	49
			Total		172

Causes of underachievement. Four students attributed a lack of available help as a cause of underachievement. Two students reported the "need for one-on-one help and the need for extra help in mathematics and Spanish" as causes for their own underachievement.

Possible solutions for resolving underachievement. The sample participants suggested high school students should: ask for help; ask questions; speak to teachers; utilize studying, testing and note taking strategies; and apply successful academic behaviors in classes in which they are struggling. The students wanted additional support services and suggested "the hiring of a tutor, free tutoring, peer tutoring," and tutoring conducted by the teachers, "after school help," help from the teachers. They also thought that students could be offered rewards and interventional services at the middle school and high school levels to possibly resolve underachievement.

Summary of Findings for Students

High school students provided a greater number of causes (n = 710) to high school students' underachievement than possible solutions (n = 510) for resolving their underachievement. The data revealed that students attributed internal, external, and neither internal nor external factors as causes of high school students' underachievement. The students' attributed more of the causes of underachievement to internal factors rather than external ones. The core category of motivation contained the greatest number of internally attributed student factors as causes of underachievement while the core category of environmental factors affecting student achievement contained the greatest number of externally attributed factors.

Triangulation of the Data

Creswell and Miller (2000) describe triangulation as "a validity procedure where researchers search for convergence among multiple and different sources of information to form

themes or categories in a study" (p. 126). This study utilized qualitative and quantitative instruments for the purpose of determining the existence of common emergent themes and categories (Creswell & Miller, 2000) to "enhance the validity of the findings" (Gall et al., 2007) on high school students' academic achievement.

The use of multiple instruments allowed for the triangulation of data by methods (Golafshani, 2003; Guion, Diehl, & McDonald, 2011; Jick, 1979; Krefting, 1991). The comparison of data findings conducted through a triangulation of methods allowed for the reduction of researcher bias (Golafshani, 2003; Krefting, 1991) increasing the credibility of this study's findings (Golafshani, 2003; Guion, et al., 2011; Krefting, 1991).

For this research study, the qualitative data was triangulated by conducting an analyses of the responses generated from the two survey questions on the teacher and student qualitative instruments and the SAAS-R subscales' findings about the perceptions of factors affecting academic achievement. A comparison analysis of the qualitative data findings and the perceptions of achievement subscales were represented in the triangulation design as seen in Figure 1.

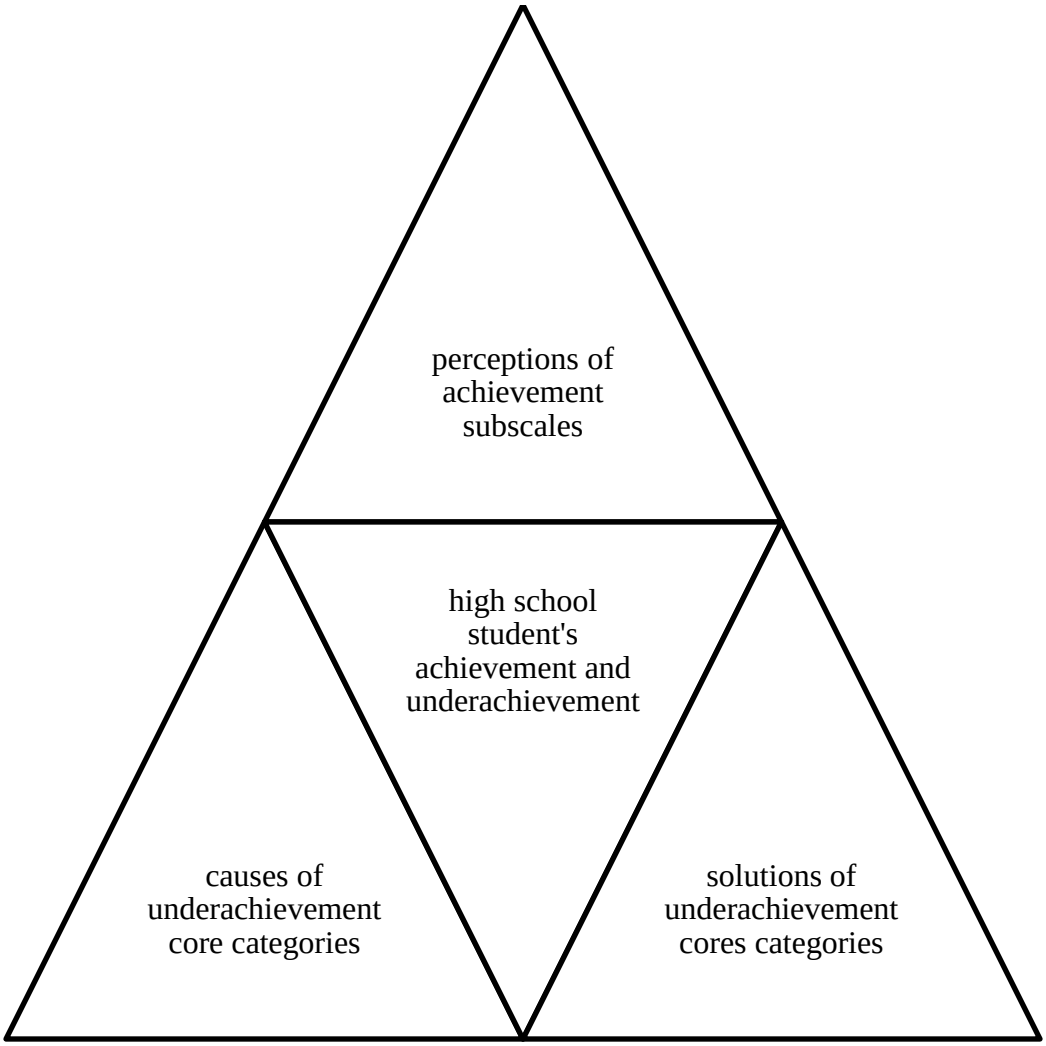

Figure 1

Triangulation of Data Findings

Triangulation could not be sought for the qualitative findings of environmental factors affecting underachievement, student attendance, and support services and strategies as core categories because the SAAS-R neither contained prompts nor revealed supportive evidence as to their involvement in students' academic achievement.

Triangulation of Academic Self-Perception

The *Student Achievement Inventory: Teacher Form* and the SAAS-R were utilized to collect all quantitative data about academic self-perception. The *High School Teachers' Views*

on High School Students Doing Well in School and *High School Students' Views on Doing Well in School* surveys were used to collect all of the qualitative data from the responses to two surveys questions.

The analyses of the qualitative findings also revealed academic self-perception to be an influential factor of achievement. Teachers and students reported students' self-efficacy as a possible cause of high school students' underachievement. Changes to their self-efficacy were suggested solutions made by both teachers and students for resolving underachievement. Analyses of the SAAS-R revealed that students' academic self-perception was a significant predictor of their academic achievement as indicated by their self-reported GPA. In other words, the triangulation of both the qualitative and quantitative findings support academic self-perception as a factor affecting high school students' achievement and underachievement in school.

Triangulation of Motivation/Self-Regulation

Motivation/self-regulation was also supported by the qualitative and quantitative data as a factor affecting high school students' academic achievement. The teachers' core category of motivation contained responses which identified intrinsic motivation as a cause and solution to underachievement. Students' reported that both intrinsic and extrinsic motivations are factors which affect academic achievement. Teachers and students mentioned specific self-regulatory behaviors undertaken by students as factors affecting achievement, as exhibited by the axial codes within the core category of students' behaviors and skills. An analysis of the SAAS-R data found motivation/self-regulation to be a significant predictor of achievement as indicated by the students' self-reported GPA. The triangulation of all qualitative and quantitative data findings supported motivation/self-regulation as a contributing factor to high school students' academic achievement and underachievement.

Chapter Conclusion

This survey research study used a convergent parallel mixed methods design (Creswell & Plano-Clark, 2011) to address four research questions. The three quantitative research questions were assigned non-directional hypotheses. For research question one, the non-directional hypothesis indicating that there would be significant differences in the dependent variable with respect to academic program and gender was supported by the data. The non-directional hypothesis for research question two, which stated that significant predictors would exist for the criterion variable of students' academic achievement, was also supported by the data. The non-directional hypothesis for research question three was refuted by the data because no statistical differences existed between teachers' years of experience and their views of factors affecting high school students' achievement. An interpretational analysis (Gall et al., 2007) for responses for high school teachers and their students was conducted to determine their perceptions of factors affecting academic achievement. The same five core categories emerged from the responses of teachers and students data in response to research question four. A triangulation amongst methods was utilized to demonstrate the merging of the demographic information with the quantitative and qualitative data findings.

CHAPTER FIVE:

SUMMARY AND CONCLUSIONS

This chapter begins with a synopsis of this study followed by the results for each research. Next, the data findings are discussed and supported by the research and studies found in the review of literature. These findings ground the implications for education as they apply to high school students' academic achievement. The study's results are then substantiated by an assessment of the threats to internal and external validity and the establishment of trustworthiness. Lastly, suggestions for future research are discussed concluding the chapter.

Synopsis of the Study

The purpose of this research study was to investigate high school students' and teachers' perceptions of factors affecting high school students' academic achievement and underachievement. This study sought to compare Non-Honors/Non-AP and Honors/AP high school students' perceptions of academic self-perception, goal valuation, attitudes towards teachers and classes, attitudes towards school, and motivation/self-regulation as know factors affecting academic achievement. The perceptions of the high school teachers and their students were sought to compare their perceptions of self-efficacy, goal valuation, environmental perceptions, and self-regulation as student factors affecting students' academic achievement. An analysis of the high school teachers' and students' responses to the possible causes of underachievement and possible solutions resolving student underachievement was conducted to determine the existence of similarities and differences in both populations' responses.

Survey research using a convergent parallel mixed methods design (Creswell & Plano-Clark, 2011) was selected to determine student and teacher quantitative findings of their attitudes towards known factors affecting academic achievement (Creswell & Plano-Clark, 2011) and

their responses pertaining to the causes and possible resolutions to academic underachievement. Four research questions were developed to address the purpose of this study.

1. Is there a significant difference between high school students' academic program (Non-Honors/Non-AP, Honors/AP level) and gender with respect to students' school attitudes about achievement which include academic self-perception, attitude towards teachers, attitude towards classes, attitudes towards school, goal valuation, and motivation/self-regulation?
2. To what degree and in what manner do students' gender, and school attitudes about achievement that include academic self-perceptions, attitudes towards teachers and classes, attitudes towards school, goal valuation, and motivation/self-regulation predict high school students' self-reported academic achievement?
3. Is there a significant difference between high school teachers' experience as educators (early, middle, and late career) with respect to their perceptions of factors associated with student achievement that include academic self-efficacy, environmental perception, goal valuation, and self-regulation?
4. What are high school teachers' and students' perceptions of the causes and solutions of underachievement?

A sample of convenience was used to gather both the quantitative and qualitative data. Research questions one and two sought to obtain quantitative data from the high school participants (n = 277) while research question three sought to obtain quantitative data from the high school teacher participants (n = 126). The final research question sought qualitative data from both the high school students and teachers using two forms of a parallel researcher-created

survey. The quantitative and qualitative student data were collected concurrently and analyzed independently.

A two-way MANOVA was used to analyze research question one to determine if the students' views of their attitudes toward academics varied by their academic program in Non-Honors/Non-AP and Honors/AP courses and their gender. A step-wise multilinear regression was used to analyze research question two to determine the students' degree and manner in which gender and views of their academic self-perception, goal valuation, attitudes towards teachers and classes, attitudes towards school, and motivation/self-regulation were predictors of their academic achievement as indicated by their self-reported GPA. The SAAS-R (McCoach, 2002) was used to collect all quantitative data on the high students' perceptions using the instruments' five subscales as factors affecting their academic achievement and their self-reported GPA.

A One-way MANOVA was used to analyze research question three to determine if the teachers' level of experience, early, middle, and late career, affected their views of self-efficacy, goal valuation, environmental perceptions, and self-regulation as factors affecting high school students' academic achievement. The *Student Achievement Inventory: Teacher Form* (Siegle et al., 2011) was used to collect all quantitative data on the high school teachers' perceptions of the instruments' four subscales.

Research question four used a general qualitative model to analyze the responses of the sampled high school teachers and their students. The *High School Teachers' Views on High School Students Doing Well in School* and the *High School Students' Views on Doing Well in School* and surveys were administered to participants, respectively. Data saturation occurred for the student data after the analysis of 40% of the samples' responses. Open codes were assigned

to all high school students' and teachers responses. Axial and attribution codes were assigned to the open codes which were collapsed into emergent themes. The emergent themes were collapsed into five thematic core categories. The researcher kept notes journaling the processes of data collection and analysis.

Results

This study's research findings were the result of thorough data analyses which identified and attempted to resolve all data violations. The findings are grounded in the data. The following research results are supported by the other literature, and were used to guide the implications of this research study and suggestions for future research.

Research Question One. A Two-way MANOVA was conducted to determine if significant differences existed between high school students' academic program, Non-Honors/Non-AP and Honors/AP, and gender and the four dependent variables of ASP, ATT, ATS, and MSR as factors affecting academic achievement. A Bonferroni adjustment was made (α = .025) to control for type I errors. The four dependent variables of were statistically (α = .025) affected by both academic program, (*Wilks's* Λ , $F(4, 256) = 8.755$, $p < .001$, *partial* η^2 = .120) and gender, (*Wilks's* Λ , $F(4, 256) = 4.153$, $p = .003$, *partial* $\eta^2 = .061$).

There was a statistical main effect for high school students' academic program and their levels of ASP and MSR. Students in an Honors/AP academic program ($M = 5.73$, $SD = .712$) reported higher levels of academic self-perception than those students in the Non-Honors/Non-AP program ($M = 5.09$, $SD = .972$). Students in an Honors/AP academic program ($M = 5.48$, $SD = .9034$) reported higher levels of motivation/self-regulation, $F(1, 259) = 11.837$, $p < .001$, *partial* $\eta^2 = .044$ (medium), than those students in the Non-Honors/Non-AP program ($M = 5.02$,

SD = 1.01). No statistical main effects were reported for the students' academic program and their attitudes towards teachers and classes and attitudes towards school.

A statistical main effect was also found for gender and high school students' views of their MSR and ATS. Females (*M* = 5.37, *SD* = .964) reported higher motivation/self-regulation scores, $F(1, 259) = 4.475$, $p = .035$, *partial* $\eta^2 = .017$ (small), than males (*M* = 5.05, *SD* = .994). There was as statistical main effect, $F(1, 259) = 3.896$, $p = .049$, *partial* $\eta^2 = .015$ (small), for gender and high school students' attitudes towards their school. Males (*M* = 4.87, *SD* = 1.30) reported higher scores for their attitudes towards school than females (*M* = 4.41, *SD* = 1.54). No statistical main effects were reported for gender and the students' views of ASP and ATT. No statistical interactions were reported between academic program and gender regarding the subscales of the SAAS-R.

The non-directional hypothesis selected to answer this researcher question was partially supported by the data. The data revealed that significant differences did exist between high school students' academic program and gender and their specific attitudes towards academics.

Research Question Two. A stepwise multilinear regression procedure was selected to determine if high school students' gender, and school attitudes about achievement: academic self-perceptions, attitudes towards teachers and classes, attitudes towards school, and motivation/self-regulation were predictors of high school students' self-reported academic achievement as identified by their self-reported GPA. Model one revealed high school students' views of their academic self-perception was a significant predictor, $F(1, 357) = 106.903$, $p < .001$, $R^2 = .230$, of their academic achievement as indicated by their self-reported GPA. Motivation/self-regulation, in model two, was a significant predictor, $F(2, 354) = 61.150$, $p < .001$, $R^2 = .256$, of students' academic achievement as indicated by their self-reported GPA. A

total of 25.6% of the shared variance, for this stepwise model, was explained by the two predictors of self-reported achievement.

The non-directional hypothesis for researcher question two was partially supported by the data. Academic self-perception and motivation/self-regulation were significant predictors of student achievement as indicated by their self-reported GPA. A negative correlation existed between the students' school attitudes about achievement: academic self-perceptions, attitudes towards teachers and classes, attitudes towards school, and motivation/self-regulation and their academic achievement, as indicated by their self-reported GPA.

Research Question Three. A One-way MANOVA was conducted to determine if statistical differences existed between the three levels of teacher experience, early career, middle career, and late career, and the four dependent variables, the academic self-efficacy, goal valuation, self-regulation, and environmental perception as factors affecting high school students' academic achievement. No statistical significance was reported for high school teachers' level of experience, (*Wilks's Λ* , $F(6, 162) = .773$, $p = .593$), and their views of these four factors.

The non-directional hypothesis selected to answer this researcher question investigating teacher experience, as defined by the categories of teaching experience, and their perceptions of their students' self-efficacy, goal valuation, environmental perceptions, and self-regulations as factors affecting high school students' academic achievement was not supported by the data.

Research Question Four. A general qualitative study was conducted for each of the two sampled populations, high school teachers and high school students. Five thematic core categories: environmental factors affecting student underachievement, motivation, student attendance, students' behaviors and skills, and support service and strategies emerged from the

high school teachers' and students' data in response to the two questions asking for causes of high school students' underachievement and resolutions for high school underachievement, respectively.

Both high school teachers and students provided more causes (teachers' axial codes = 632; students' axial codes = 710) to high school students' underachievement than possible solutions (teachers' axial codes = 323; students' axial codes = 510) resolving high school students' underachievement. Both sample populations externally attributed the core category of environmental factors affecting student achievement (teachers' axial codes = 222; students' axial codes = 267), which is comprised of the factors, family, school, and society, and internally attributed the core category of motivation (teachers' axial codes = 222; students' axial codes = 320), which is comprised of causal attribution, factors affecting motivation, and valuing education, were the main causes of high school students' underachievement. The core categories of support services and strategies (teachers' axial codes = 156; students' axial codes = 281), which is comprised of support strategies and support services, and environmental factors affecting student achievement (teachers' axial codes = 100; students' axial codes = 119), which is comprised of the factors, family, school, and society, the largest provided possible solutions for resolving high school students' underachievement.

Different proportions of axial codes were generated by teachers and their students but the same core categories were generated. This indicated that high school teachers and their students had similar perceptions of the factors causing and resolving underachievement.

Triangulation between the qualitative and quantitative data findings occurred for the core categories of motivation, students' behaviors, and skills and the academic self-perception and motivation/self-regulation subscales as perceptions of achievements. Axial and thematic codes

generated for the core category of motivation exhibited aspects of the students' academic self-perception and motivation/self-regulation while the thematic code of self-regulatory behaviors with the core category of students' behaviors and skills was generated from axial codes for both the causes and solutions of underachievement.

Discussion

The theoretical foundation provided within the review of literature in chapter two of this research study addressed motivation theory, attribution theory, underachievement, and teacher experience. Motivation theory was constructed from Bandura's (1982, 1991, 1994) seminal work which identified self-efficacy, goal valuation, motivation to learn, self-regulation, and environmental perceptions as factors affecting students' academic achievement. Murphy and Alexander (2000) helped to further identify these various constructs of motivation theory. Weiner's (1972, 1985) work on attribution theory discussed the internal factors of ability and effort and external factors of task difficulty and luck as causal attributions affecting students' academic achievement. The construct of underachievement was defined, explained, and supported by research conducted on gifted underachieving high school students because limited research was found on the underachievement pertaining to the general high school student population. Lastly, the construct of teacher experience was reviewed and supported by studies which identified and explained the difference between novice and experienced teachers. These studies supported the existence of difference in the perceptions and instruction of these teachers.

A thorough and rich review of the literature was provided to support the purpose and results of this research study. The following findings for each research question are related to the literature and studies analyzed in chapter two of this study.

Research Question One. Research question one investigated high school students' levels of their academic self-perception, goal valuation, attitudes towards teachers and classes, attitudes towards school, and motivation/self-regulation as factors affecting their academic achievement using the SAAS-R. Self-efficacy, goal valuation, environmental perceptions, motivation to learn, and self-regulation, as constructs of motivation theory, were assessed for high school students utilizing the five subscales (ASP, GV, ATT, ATS, MSR) of this instrument.

McCoach and Siegle (2001) conducted a study revealing that high and low achieving students' subscale scores differed with respect to their attitudes towards teachers and classes, attitudes towards school, academic self-perceptions, goal valuation, and motivation/self-regulation based on the SAAS-R. High achieving high school students reported higher mean scores with large effect sizes for each subscale when compared to low achieving high school students. These findings support the subsequent research by McCoach and Siegle (2003a) revealed that high-achieving and underachieving gifted high school students differed in their attitudes towards teachers and classes, attitudes towards school, goal valuation, and motivation/self-regulation with reported large effect sizes. These results support the findings of this study which reported Honors/AP students' perceptions of their academic self-perception and motivation/self-regulation were significantly higher than their Non-Honors/Non-AP peers.

Siegle et al. (2011) later reported the existence of gender differences amongst high school students when comparing their levels of self-efficacy and self-regulation as determined by the SAAS-R. Male students possessed higher levels of self-efficacy than female students. Female students possessed higher levels of self-regulation than male students. These findings support the gender difference reported in this research study for motivation/self-regulation in which female students reported higher levels of motivation/self-regulation than their male counterparts.

High school students' levels of goal valuation were not measured in the MANOVA and stepwise multilinear regression utilized in this study because of normality violations for the Goal Valuation subscale. McCoach and Siegle (2001, 2003a) reported a violation to the logistical regression analysis assumptions which resulted in multicollinearity for all five subscales of the SAAS-R. Ward's test then conducted to determine which variables were predictors of high school students' achievement status. Academic self-perceptions and motivation/self-regulation (McCoach & Siegle, 2001) and motivation/self-regulation and goal valuation (McCoach & Siegle, 2003a) were significant predictors of the students' status as high and low achievers. McCoach and Siegle (2001, 2003a) reported no violations to normality for the univariate t-tests conducted on each subscale were reported. Siegle et al. (2011) utilized the SAAS-R to determine relationships between high school students' views of each of the five subscales with no reported violations to the regression analysis assumptions. A MANOVA was conducted (Siegle et al., 2011) to determine the existence of gender differences amongst underachieving gifted students for each subscale. No violations to the MANOVA assumptions were reported for this study.

Research Question Two. Research question two investigated the SAAS-R's subscales of academic self-perception, goal valuation, attitudes towards teachers and classes, attitudes towards school, and motivation/self-regulation, predictors of high school students' academic achievement. These five predictor variables were grounded in the constructs of motivation theory as factors affecting students' motivation; thereby, influencing their achievement.

McCoach and Siegle (2001) reported that academic self-perception and motivation/self-regulation were predictors of high school students' achievement status as a high or low achiever as indicated by their self-reported GPA on the SAAS-R. These findings supported the results of

this research study in which academic self-perception and motivation/self-regulation were also predictors of students' academic achievement as indicated by their self-reported GPA accounting for 25.6% of the shared variance within the model.

The four predictor variables of academic self-perception, attitudes towards teachers and classes, attitudes towards school, and motivation/self-regulation as attitudes towards school which affect achievement were all negatively correlated the achievement as indicated by the students' self-reported GPA. McCoach and Siegle (2001, 2003a) and Siegle et al. (2011) reported no notable correlations between the five subscales of the SAAS-R and achievement.

Research Question Three.

Hogan, Rabinowitz, and Craven (2003) found that expert teachers, those with between and four and 10 years of teaching experience (Carter, 1990; Covino & Iwanicki, 1996; Hogan, Rabinowitz, 2009; Hogan et al, 2003; Meyer, 2004; Tschannen-Moran & Hoy, 2007) were more student centered than novice teachers. This could account for the similar views held by the teachers in this research study because 135 out of 141 teacher participants reported having five or more years of teaching experience. Six teacher participants reported having three years or less of teaching experience classifying them as novice teachers (Covino & Iwanicki, 1996; Meyer, 2004; Tschannen-Moran & Hoy, 2007).

This study revealed that teachers with varying levels of teaching experience possessed similar views of self-efficacy, goal valuation, environmental perceptions, and self-regulation as factors affecting their students' achievement. Covino and Iwanicki, (1996) reported 21 teaching behaviors that novice and experienced teachers agreed to be essential for effective teaching. Ten out of 21 of these behaviors explicitly dealt with students. Those teaching behaviors are: monitors students' understanding during instruction; communicates to all students the

expectation that they are to achieve their best; adapts teaching to students' learning styles; motivates students effectively; encourages students to take responsibility for their learning; judges lesson effectiveness by cuing on student performance and behavior; employs knowledge of students and subject to facilitate student learning; uses appropriate information to asses students' learning; extends the subject matter; and stresses student accountability. The shared view of these essential teaching behaviors by novice and experienced teachers support the shared views of the teacher participants within this study.

Research Question Four. The present research study yielded multiple causes of high school students' underachievement as viewed by high school teachers and their students. High school teachers and their students either internally, externally, or neither internally nor eternally attributed all of their causes and solutions for underachievement. The causal attributes of effort, ability, and task difficulty, as components of attribution theory, were axial codes generated by both the teachers and students for the causes and solutions of high school students' underachievement. These findings answering the causes and solutions of underachievement were supported by attribution theory.

The literature in support of the research findings was conducted on gifted underachievers but resulted in similar findings. Some reported causes high school students' underachievement which were supported by this study and the literature were: students with identified or non-identified disabilities (Baum et al., 1994; Perry, 2008; Seeley, 2004), emotional issues (Baum et al., 1994), student attendance, tardiness, and delinquency from school (Peterson & Colangelo, 1996; Reis & McCoach, 2000; Seeley, 2004).

The environmental factors affecting students' underachievement within this study encompassed the family, school, and society. The reported research also supports the family

environmental factors (Perry, 2008; Seeley, 2004), such as poverty (Reis & McCoach, 2000; Perry, 2008; Seeley, 2004), low parental expectations of children (Berube & Siegle, 1995; Seeley, 2004), low educational level of family members (Seeley, 2004), poor nutrition (Seeley, 2004), the disorganization of the family structure (Perry, 2008), cultural diversity of the family (Reis & McCoach, 2000; Seeley, 2004), and family problems (Reis & McCoach, 2000) as causes of high school students' underachievement.

The school and its teachers reported causes of high school students' underachievement as viewed by both the teachers and their students. These causes were rooted in school policies and teacher practices governing the students and their classes affecting the students' attitudes towards environmental factors (McCoach & Siegle, 2001, 2003a; Perry, 2008; Siegle et al., 2011), which included the teachers, the classes, and the school. The literature supported the teachers' and students' reporting of the following school risk factors (Seeley, 2004) pertaining to teachers and their classes as influences causing underachievement: their perceptions of the academic work (Seeley, 2004), conflicts with teachers (Seeley, 2004), teachers' and guidance counselors' attitudes towards students' underachievement (Seeley, 2004), teacher indifference and hostility towards students (Berube & Siegle, 1995; Perry 2008; Seeley, 2004), and the lack of engaging and unchallenging assignments (Baum et al., 1994; Berube & Siegle, 1995; Perry 2008; Seeley, 2004; Siegle & McCoach, 2009). Factors within the school such as the size of the school (Seeley, 2004), student schedules lacking flexibility (Seeley, 2004), students' wanting respect and responsibility from school personnel (Seeley, 2004), and the structure of the school (Perry, 2008) were also identified and supported school-controlled factors which influence student underachievement.

The literature also supported the following motivational factors causing students' underachievement as reported by the teacher and student participants of this study: a lack of goal setting (McCoach & Siegle, 2001, 2003a; Seeley, 2004; Siegle et al., 2011), low self-efficacy (Berube & Siegle, 1995; McCoach & Siegle, 2001, 2003a; Siegle et al., 2011), decrease in intrinsic motivation (McCoach & Siegle, 2001, 2003; Perry, 2008; Seeley, 2004; Siegle et al., 2011), negative peer interactions (Baum et al., 1994; Berube & Siegle, 1995; Perry, 2008; Reis & McCoach, 2000), poor self-regulation strategies and behaviors (Baum et al., 1994; McCoach & Siegle, 2001, 2003a; Reis & McCoach, 2000; Siegle et al., 2011), and a lack of value for academic excellence (Berube & Siegle, 1995; McCoach & Siegle, 2001, 2003a; Siegle et al., 2011).

High school teachers and their students within this study suggested the need for various support services and specific strategies as possible resolutions to high school students' underachievement. Most of the literature related to this concept includes gifted underachievers. The research suggesting solutions for the resolution of underachievement amongst gifted students supported this study's findings for regular education students. Several researchers have suggested: providing challenging work to the students (Berube & Siegle, 1995; Brophy, 1987; Emerick, 1992); teaching goal setting (Berube & Siegle, 1995; Brophy, 1987; Emerick, 1992); increasing self-regulatory skills and behaviors (Brophy, 1987; Emerick, 1992); implementing rewards (Brophy, 1987; Weiner, 1972); devising lessons and activities towards students' interest and real-world applications (Baum et al., 1994; Berube & Siegle, 1995; Brophy, 1987; Emerick, 1992); allowing in-class peer interactions (Brophy, 1987; Emerick, 1992; Seeley, 2004); motivating students to learn (Berube & Siegle, 1995; Brophy, 1987; Emerick, 1992); mentoring (Baum et al., 1994); improving communication between students, teachers, and guidance

counselors (Emerick, 1992; Seeley, 2004); displaying sentiments of care towards students (Emerick, 1992); increasing students' self-efficacy (Berube & Siegle, 1995; Emerick, 1992; Seeley, 2004); improving the school and classroom learning environments (Seeley, 2004); implementing school-centered interventional services (Reis & McCoach, 2000; Weiner, 1972); and increasing parental involvement (Emerick, 1992).

Implications for Education

The findings generated by this research study possess implications which can be utilized within the high school when addressing students' academic achievement.

Research Question One. School administrators, teachers, and counselors should be made aware of the variations in high school students' levels of academic self-perception and motivation/self-regulation may vary with their academic program when they are enrolled in either Non-Honors/Non-AP or Honors/AP courses. Teachers and counselors may want to monitor these students' views of their academic self-perception and motivation/self-regulation and their progress in these new courses to allow for a successful transition towards academic success.

High school teachers should consider their students' gender when addressing students' self-regulatory behaviors. Male students' may require more support and monitoring of their self-regulatory behaviors by teachers. School administrators, teachers, and counselors may work towards implementing an interventional service or instructional support for students with low academic self-regulatory skills. Differentiating the levels of support to meet the needs of male and female students may increase student participation lending to the effectiveness of the intervention, as indicated by subsequent academic achievement.

School leaders need to be aware of high school students' perception of the school when addressing academic achievement. Students' views of their school can vary by gender and academic program. School leaders may want to conduct a focus group with both male and female students and those from different academic programs in order to investigate their feelings about their school. These same high school students could also be involved in development and revision of school policy and procedure.

Research Question Two. High school students' administrators, teachers, counselors, and parents should also be made aware of the role their students' levels of academic self-perception and motivation/self-regulation have on their academic achievement. High school students' academic achievement can be affected by multiple factors which need to be investigated in order to meet the needs of the students. A global approach to improving high school students' academic achievement may not be effective because the factors affecting each individual student may vary. Guidance counselors should work collaboratively with individual students to determine which factor or combination of factors is affecting his or her academic achievement.

Research Question Three. No significant categorization was found between early (1 - 10 years), middle (11 - 20 years), and late (20 - 30^{+} years) career teachers after the implementation of the *Student Achievement Survey: Teacher Form*. These results indicated that the high school teachers in this study were found to perceive student achievement in the same way, regardless of their years of teaching experience. Teachers who share similar perceptions of their students' achievement should be provided professional development based on the five core categories generated by this study related to the causes and solutions of underachievement. High

school administrators should survey their teachers to determine what they need to improve student achievement.

Research Question Four. High school teachers and their students both agreed that instructional support strategies and services are needed to help supplement the high school programs of some students in order to address factors impeding their achievement. School administrators should consider the implementation of peer or teacher-student mentoring programs. A central location where students can receive tutoring services by peers and teachers throughout the school day and after school can also help to resolve academic underachievement. School personnel may want to develop a referral system to facilitate students' participation the tutorial services. The roles of school counselors may be evaluated to determine their current role in providing academic support to their students for the purpose of resolving underachievement. Counselors could provide their underachieving students with specific interventional programs or strategies needed to increase their achievement. Administrators may seek to provide professional development for teachers on the development of more engaging lessons for students which can be developed collaboratively during common planning times.

School data team members should also conduct an audit of their resources to determine if they can adequately meet the needs of and support the students' academic self-perception and motivation/self-regulation as factors affecting their grade point average. The results of this audit could lead administrators and teachers to the development of appropriate support services and strategies which can improve their students' academic achievement.

Limitations of the Study

This study utilized a causal-comparative and correlational research design to gather data on high school teachers and students' perceptions of factors affecting academic achievement and underachievement. A parallel convergent research model was used to analyze all quantitative

and qualitative data to determine if relationships existed between the results from each research question. This study was predisposed to certain research limitations because of its design and the types of analyses conducted.

Research Questions One, Two, and Three. The causal comparative research design of research questions one and three and correlational researcher design of question two allowed for the following threats to the internal and external validity of this study.

Internal validity. The two internal threats to the validity of this survey-based study were instrumentation and differential selection (Gall et al., 2007; Onwuegbuzie, 2000). The SAAS-R was utilized to collect all quantitative data including the students' self-reported GPA. This posed a threat to the internal validity of the study because the assenting students' could have reported an inaccurate grade point average. To compensate for this, students were asked to bring their report card to the survey administration. The researcher could have obtained permission by all parties involved in the study to obtain the students' GPA from their personal records. This more accurate representation of the students' academic achievement could have resulted in a decreased sample size because parents may not consent their students' participation within the study because of the lack of anonymity provided by reviewing their school records.

Participants for this study were not randomly selected. Instead, a sample of convenience was utilized for data collection from both the high school teachers and their students because the research site contained an experimentally accessible population. Participation in the study was strictly voluntary and teachers' consent and students' assent along with parental consent was obtained prior to the distribution of the surveys for data collection. Seventeen percent of the accessible student population in grades 9 to 12 was surveyed for the study. The following data represent the percentage of accessible students in Grades 9 to 12 surveyed for this study: 7.3%,

18.0%, 28.5%, and 12.8%, respectively. These rates resulted from the researcher's appeal to the students for participation in the study, diligence of their social studies teachers to follow all distribution procedures, and their entrance into a raffle for a gift card as a token of thanks for their participation. These actions resulted in a reasonable proportion of students from the accessible population surveyed; thus, representing a student sample reflective of the accessible population.

External validity. The threats to external validity for this research study were population validity and the Hawthorne effect (Gall et al., 2007; Onwuegbuzie, 2000). An "experimentally accessible population" (Gall et al., 2007, p. 389) was sampled in this study for data collection limiting the generalizability of the research findings to only the students and teacher participants in this study (Creswell & Plano-Clark, 2011). The detailed descriptions of the setting, sample, and methodology would allow for the replication of this study by future school personnel or researchers wanting to compare these results to their studies conducted in similar settings with similar populations.

Students and teachers who participated in this study may have felt that "special attention" (Gall et al., 2007, p. 390) was being given to them by participating in this study affecting their responses to the surveys' questions. This, Hawthorne effect, could affect the external validity of the study by limiting the generalizability of the results to other populations. This threat to external validity was reduced when all students present during survey administration were allowed to complete the survey, regardless of their participation. Ineligible students' surveys were isolated from eligible students' surveys and were not utilized for data analysis.

Trustworthiness of Qualitative Research

Reliability and validity of a qualitative study is grounded in the establishment of trustworthiness (Locke et al., 2010). Methodological triangulation was utilized in this mixed methods study to determine the existence of common categories between the qualitative and quantitative data to ensure the validity of the qualitative findings (Jick, 1979; Seale, 1999). Quantitative data obtained from the SAAS-R and the *Student Achievement Inventory: Teacher Form* and qualitative data obtained from the two research-created surveys, *High School Students' Views on Doing Well in School* and *High School Teachers' Views on High School Students Doing Well in School*, were triangulated to establish trustworthiness (Creswell & Miller, 2000; Kuper et al., 2008; Shenton, 2004) at the completion of the data analyses. The triangulation of the qualitative findings helped to establish the validity and reliability (Krefting, 1991; Golafshani, 2003; Guion, et al., 2011). This mixed methods study was grounded in motivation and attribution theory and in the constructs of underachievement and teacher experience allowing for the establishment of credibility, transferability, dependability, and confirmability (Creswell & Miller, 2000; Shenton, 2004) as methods of establishing trustworthiness.

Credibility. The researcher's biography established her familiarity with the school's setting, culture, teachers, and students. Reflexivity (Creswell & Miller, 2000) was addressed by the researcher to reveal any preconceived biases and beliefs to establish credibility. Credibility of the qualitative data was established through the usage of an audit trail (Creswell & Miller, 2000; Gall et al., 2007; Shenton, 2004; Toma, 2006) which defined all qualitative codes and core categories, detailed the coding process, and documented the researcher's biases and prejudices in reflexive notes. An external auditor was selected to analyze the qualitative data and the audit trail (Creswell & Miller, 2000; Gall et al., 2007; Kuper et al., 2008) for the appropriateness of the

emergent themes and core categories. An external audit of the qualitative data, as a practice in reflexivity, was conducted to determine the trustworthiness of the researcher's coding process and codes (Seale, 1999). An audit of the qualitative data which included "code checking" (Gall et al., 2007, p. 475) was conducted by an external auditor. The results of the audit yielded 100% intercoder agreement in the qualitative research (Creswell & Plano-Clark, 2011).

Transferability. Transferability for the research study was established by "clear descriptions of how it was conducted, including the selection of the study sample, the data collection methods, and the analysis process" (Kuper et al., 2008, p. 689). The setting, subjects, and sampling procedures were detailed within the methodology of this study while the qualitative emergent themes and core categories were described in "rich detail" (Creswell & Miller, 2000, p. 128) in the data analysis allowing for the future replication of this study by other researchers. Verisimilitude (Creswell & Miller, 2000; Gall et al., 2007) was achieved through the establishment of a detailed description of the study and the usage of direct quotes from the teacher and student participants to provide examples needed.

Dependability. Dependability of this research study was established in the methodology by providing detailed descriptions of the research design, the methodology, and the coding process (Shenton, 2004). All participants were assigned codes for data analysis to maintain the dependability of this study. Data were collected from many participants for use in the generation of the core categories for each group establishing dependability (Toma, 2006).

Confirmability. Researcher reflexivity (Creswell & Miller, 2000) was disclosed and reflected upon prior to the qualitative analyses of data to help certify that all findings were generated from the teachers' and students' responses and not from the researcher's biases (Shenton, 2004). A detailed methodology was reported to support that all findings were

grounded in the data while a thorough review of literature was used to relate the data to the established theory. The audit trail (Creswell & Miller, 2000; Gall et al., 2007; Shenton, 2004; Toma, 2006) provided to the external auditor for review provided a "chain of evidence" (Gall et al., 2007, p. 474) grounding the data in findings allowing for the confirmation of data by a source other than the researcher (Toma, 2006).

Suggestions for Future Research

The findings from this research study have revealed areas in which subsequent research could be conducted on high school teachers and students' perceptions of factors affecting academic achievement and underachievement. All suggestions are grounded within the findings of each research question.

Determination of the Effectiveness of the Goal Valuation Subscale of the SAAS-R on Non-Gifted Students. The goal valuation subscale has been effective in studies (McCoach & Siegle, 2001, 2003a; Siegle et al., 2011) using the *School Attitude Achievement Survey-Revised* revealing statistically significant results for gifted achievers and gifted underachievers on their perceptions of goal valuation. The goal valuation subscale was removed from both the MANOVA and stepwise multilinear regression analyses within in this research study because the means between male and female students in the Non-Honors/Non-AP and Honors/AP academic programs were high and similar causing violations to the normal distribution of the variable. This led the researcher to question its effectiveness on non-gifted student populations. Future research could be conducted using non-parametric statistics to determine the effectiveness of the goal valuation subscale on the *School Attitude Achievement Survey-Revised* with populations other than gifted students.

An Investigation into Factors Affecting High School Students' Academic Achievement. High school students' views of their academic self-perceptions, attitudes towards teachers and classes, attitudes towards school, and motivation/self-regulation were negatively correlated with their academic achievement, as indicated by their self-reported GPA. An investigation may want to be conducted into why these factors negatively correlate with high school students' academic achievement.

A Longitudinal Study of High School Teachers' Attitudes Towards Students' Academic Achievement from Different Points in Their Teaching Career (Entry, Middle, Late). The quantitative comparison of high school teachers' years of experience and their views of self-efficacy, goal valuation, environmental perceptions, and self-regulation as factors affecting high school students' academic achievement yielded no statistical differences. A longitudinal study could yield quantitative or qualitative data that could possibly show changes in teachers' attitudes towards their students' academic achievement as they gain more teaching experience.

An Investigation into Novice Teachers' Perceptions of Factors Affecting High School Students' Academic Achievement. This research study compared teachers' perceptions of their students' level of self-efficacy, goal valuation, environmental perceptions, and self-regulation as factors affecting their achievement based on their teaching experience as early, middle, and late career teachers. The early career teachers (1 - 10 years) did not exclusively contain novice teachers. A future study investigating novice teachers' perceptions of these same factors may want to be conducted because few novice teachers were surveyed in this study.

In-Depth Student and Teacher Qualitative Studies. This research study quantitatively compared high school students' perception of academic self-perception, goal valuation, attitudes

towards teachers and classes, attitudes towards school, and motivation/self-regulation using the *School Attitude Achievement Survey-Revised*. Future research could examine high school students' perceptions of these factors using qualitative data gathering techniques to obtain a deeper analysis of their views affecting academic achievement. Researchers could conduct an in-depth qualitative analysis to examine whether or not gender is a mitigating factor affecting high schools students' views on the causes of and resolutions of academic underachievement. Researchers could also conduct an analysis of the teacher qualitative data by years of teacher experience to determine its role in identifying teacher generated causes and solutions to underachievement.

Investigation into Resolving Underachievement Using the Suggested Resolutions. High school students and teachers provided suggested solutions toward the resolution of high school students' underachievement. Mentoring, peer tutoring, and after school help sessions could be investigated in future studies to determine their effectiveness at resolving students' underachievement. Quantitative and qualitative analyses could be used to investigate the effectiveness of interventional services on resolving underachievement amongst high school students.

Measurement of High School Students' Initiative Accessing Academic Support Services. The qualitative data for both samples revealed that high school students should attain help to prevent and address their underachievement. Future researchers measuring high school students' initiative towards seeking out academic support services could be conducted. Future studies could be developed to investigate whether high students are internally or externally motivated to seek out and attend academic support services and provide the appropriate

pathways to assist students who need these services. Researchers could also examine the role of high school teachers in encouraging their students to seek out academic support services.

Chapter Summary

This chapter reviewed the research questions guiding this study and presented the findings for each question, respectively. The findings were then supported by the literature reviewed in chapter two. The research findings for each question was further analyzed and transferred into practical applications within the field of education. The review of the limitations of the study and how they were addressed helped to support the validity and reliability of this study's results. Suggestions for future research were generated by the findings of this research study.

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Appendix A

High School Teachers' Views on High School Students Doing Well in School

High School Teachers' Views on High School Students Doing Well in School

Purpose:

This open-ended confidential survey is meant to obtain high school teachers' personal views on why students do well or struggle in school. Teachers will benefit from this survey because they will be providing information that can improve student learning.

Format:

The survey consists of background information and 2 open-ended questions. Spaces have been provided for the students' responses. This survey will take no more than 15 minutes to complete.

Directions:

Please respond to all of the questions to the best of your ability! It is extremely important that all responses are legible. Please print if necessary.

The completion of this survey is greatly appreciated!

Thank you!☺

Background Information

Directions: Fill-in or circle the appropriate response.

1. Sex: **Male Female**
2. Number of years teaching: _____
3. Number of years teaching at your current high school: _____
4. Race/Ethnicity: **Caucasian African American Hispanic/Latino other**
5. Please list the courses you are currently teaching.

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

1. What are **some reasons why** students **do not do as well** as they **could** (underachieve) in their classes?

2. Can you suggest **possible solutions** to help those students who are **struggling in some** of their classes but are **doing well** in other classes?

Appendix B

High School Students' Views on Doing Well in School

High School Students' Views on Doing Well in School

Purpose:

This open-ended confidential survey is meant to obtain high school students' personal views on why students do well or struggle in school. Students will benefit from this survey because they will be providing information that can improve classroom instruction.

Format:

The survey consists of background information and 2 open-ended questions. Spaces have been provided for the students' responses. This survey will take no more than 15 minutes to complete.

Directions:

Please respond to all of the questions to the best of your ability! It is extremely important that all responses are legible. Please print if necessary.

The completion of this survey is greatly appreciated!

Thank you! ☺

Background Information

Directions: Fill-in or circle the appropriate response.

1. Age: _____
2. Sex: **Male Female**
3. Grade level: **9 10 11 12**
4. Race/Ethnicity: **Caucasian African American Hispanic/Latino other**
5. Are you currently enrolled in a Regents level English class? **Yes No**
6. Are you currently enrolled in an Honors level English class? **Yes No**
    a. If "yes" to question #6, please circle all Honors level courses you are currently enrolled in.

    Math Science Social Studies/History
7. Are you currently enrolled in an Advanced Placement (AP) or college level English class? **Yes No**
    a. If "yes" to question #7, please list all AP/ level college courses you are currently enrolled in.

    Math Science Social Studies/History Foreign Language

1. What are **some reasons why** students **do not do as well** as they **could** (underachieve) in their classes?

2. Can you suggest **possible solutions** to help those students who are **struggling in some** of their classes but are **doing well** in other classes?

Appendix C

Teacher Non-Participation Form

Non-Participation Form

Directions: Please check the boxes that best describe you and provide any additional information about why you decided not to participate in this study.

1. **Gender**

   ☐ Male ☐ Female

2. **Ethnicity**

   ☐ Hispanic-American ☐ African-American ☐ Native-American
   ☐ Asian-American/ ☐ Other:
   ☐ Caucasian-American ☐ Pacific Islander ☐ Please specify _____

3. **Years of Experience in Education** _____

4. **Current Role – Check all that apply:**

   ☐ Teacher ☐ Administrator ☐ Department Chair

   ☐ Curriculum Coordinator ☐ Curriculum Coach/Mentor ☐ Support Staff

   ☐ Other: Please specify _____

5. **I do not want to participate in the study. Please check all that apply:**

   ☐ I am not interested in the study.

   ☐ I do not have the time.

   ☐ Other: Please specify _____

Appendix D

Presentation for Teacher Participation

Presentation Outline

- Natalie's Research Study
- Natalie A. Morales
- Doctoral Candidate, WCSU
- Attention!
    - Teachers:
        - Please sit by department.
        - **You will need your student rosters or access to them via an electronic devise.**
    - Teaching Assistants:
        - Please sit together.
- About Me!
    - Teacher
    - NTA delegate
    - Curriculum writing
    - District PD instructor
    - Published journal author
    - NTA Committee member
    - Conversion team member
    - District Committee member
    - Doctoral student at Western Connecticut State University
- My Dissertation Study

An Investigation of High School Students' and Teachers' Perceptions of Academic Achievement and Underachievement

1. Survey high school teachers
2. Survey high school students

3. Analyze the data
4. Complete my dissertation
    - Confidentiality
    - Names are NOT asked NOR required!
    - Surveys are coded for data analysis ONLY!
    - Participation WILL NOT affect nor reflect on teacher evaluations!

- Teacher Participation
    1. Consent participation
    2. Complete two surveys as per instructions:
        - *Student Achievement Survey: Teacher Form*
        - *High School Teacher's Views on High School Students' Doing Well in School*
    3. Hand in completed surveys
    4. Complete raffle ticket
    5. Receive a token of thanks
- Student Participation
    - Calling ALL Social Studies teachers!!
    - Volunteer your classes!!
        - Grade 9-12 needed
    - Survey will be integrated as part of a lesson on civic responsibility & freedom to participate in school change.
    - We will meet during Regents week for study's specifics.
    - Interested? Sign up!!

Appendix E

Cover Letter and Consent Form (Superintendent)

Department of Education & Educational Psychology December 17, 2012

Dear (Superintendent),

I am a currently a fourth year Doctoral student enrolled in Western Connecticut State University's Ed.D Instructional Leadership program. This program requires that I design and implement a dissertation research study. The purpose of this study is to compare high school teachers and students views on academic achievement. The benefits of allowing this study to be conducted in your school district will be that both the students and teachers can affect and shape classroom practices and instructions to improve student achievement amongst our high school students.

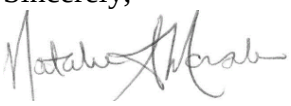
Four different instruments will be used to conduct this study. The *School Attitude Assessment Survey-Revised (SAAS-R)* and the *Student Achievement Inventory: Teacher Form* will collect quantitative data from high school students and teachers on their attitudes towards academic achievement. *High School Students' Views on Doing Well in School* and *High School Teachers' Views on Doing Well in School* will collect qualitative data from both the students and teachers on their views of the causes of student underachievement and possible solutions to resolving student underachievement. These procedures will take place during the month of February during non-instructional time and will take approximately 20-25 minutes.

The study has been reviewed and approved by the Western Connecticut State University Institutional Review Board (IRB). All data collected will be coded and kept confidential. Participation in the study will be voluntary and will require parental and teacher consent and student assent.

This research project has been reviewed and approved by the WCSU Institutional Review Board. If you have questions concerning the rights of the subjects involved in research studies please email the WCSU Assurances Administrator at **irb@wcsu.edu** and mention Protocol Number [to be filled in after approved]. This study is valid until [fill in 1 year date from approved date].

Thank you for the continued support of your employee's academic pursuits in education. If you have any questions, please feel free to contact me at xxxxxx.

Sincerely,



Natalie A. Morales

I agree that the study described above can be conducted in (name of the school district).

_____ _____ _____

Please Print Name Signature Date

Appendix F

Cover Letter and Consent Form (Assistant Superintendent of School Improvement)

Department of Education & Educational Psychology

December 17, 2012

Dear (Superintendent of School Improvement),

I am a currently a fourth year Doctoral student enrolled in Western Connecticut State University's Ed.D Instructional Leadership program. This program requires that I design and implement a dissertation research study. The purpose of this study is to compare high school teachers and students views on academic achievement. The benefits of allowing this study to be conducted in your school district will be that both the students and teachers can affect and shape classroom practices and instructions to improve student achievement amongst our high school students.

Four different instruments will be used to conduct this study. The *School Attitude Assessment Survey-Revised (SAAS-R)* and the *Student Achievement Inventory: Teacher Form* will collect quantitative data from high school students and teachers on their attitudes towards academic achievement. *High School Students' Views on Doing Well in School* and *High School Teachers' Views on Doing Well in School* will collect qualitative data from both the students and teachers on their views of the causes of student underachievement and possible solutions to resolving student underachievement. These procedures will take place during the month of February during non-instructional time and will take approximately 20-25 minutes. All data collected will be coded and kept confidential. Participation in the study will be voluntary and will require parental and teacher consent and student assent.

This research project has been reviewed and approved by the WCSU Institutional Review Board. If you have questions concerning the rights of the subjects involved in research studies please email the WCSU Assurances Administrator at **irb@wcsu.edu** and mention Protocol Number [to be filled in after approved]. This study is valid until [fill in 1 year date from approved date].

Thank you for the continued support of your employee's academic pursuits in education. If you have any questions, please feel free to contact me at xxxxxxx.

Sincerely,

Natalie A. Morales

I agree that the study described above can be conducted in (name of the school district).

_____ _____ _____

Please Print Name Signature Date

Appendix G

Cover Letter and Consent Form (Principal)

Department of Education & Educational Psychology

December 17, 2012

Dear (Principal),

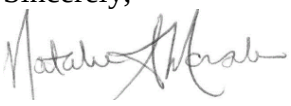
I am a currently a fourth year Doctoral student enrolled in Western Connecticut State University's Ed.D Instructional Leadership program. This program requires that I design and implement a dissertation research study. The purpose of this study is to compare high school teachers and students views on academic achievement. The benefits of allowing this study to be conducted in your school district will be that both the students and teachers can affect and shape classroom practices and instructions to improve student achievement amongst our high school students.

Four different instruments will be used to conduct this study. The *School Attitude Assessment Survey-Revised (SAAS-R)* and the *Student Achievement Inventory: Teacher Form* will collect quantitative data from high school students and teachers on their attitudes towards academic achievement. *High School Students' Views on Doing Well in School* and *High School Teachers' Views on Doing Well in School* will collect qualitative data from both the students and teachers on their views of the causes of student underachievement and possible solutions to resolving student underachievement. These procedures will take place during the month of February during non-instructional time and will take approximately 20-25 minutes. All data collected will be coded and kept confidential. Participation in the study will be voluntary and will require parental and teacher consent and student assent.

This research project has been reviewed and approved by the WCSU Institutional Review Board. If you have questions concerning the rights of the subjects involved in research studies please email the WCSU Assurances Administrator at **irb@wcsu.edu** and mention Protocol Number [to be filled in after approved]. This study is valid until [fill in 1 year date from approved date].

Thank you for the continued support of your employee's academic pursuits in education. If you have any questions, please feel free to contact me at xxxxxx.

Sincerely,



Natalie A. Morales

I agree that the study described above can be conducted in (name of the school district).

_____	_____	_____
Please Print Name	Signature	Date

Appendix H

Cover Letter and Consent Form (Teacher)

Department of Education & Educational Psychology January 7, 2013

Dear (Teacher),

I am a currently a fourth year Doctoral student enrolled in Western Connecticut State University's Ed.D Instructional Leadership program. This program requires that I design and implement a dissertation research study. The purpose of this study is to compare high school teachers and students views on academic achievement. The benefit of your participation in the study would be to provide increased awareness to the issue of high school student underachievement.

Four different instruments will be used to conduct this study. The *School Attitude Assessment Survey-Revised (SAAS-R)* and the *Student Achievement Inventory: Teacher Form* will collect quantitative data from high school students and teachers on their attitudes towards academic achievement. *High School Students' Views on Doing Well in School* and *High School Teachers' Views on Doing Well in School* will collect qualitative data from both the students and teachers on their views of the causes of student underachievement and possible solutions to resolving student underachievement. These procedures will take place during the month of February during non-instructional time and will take approximately 20-25 minutes. All data collected will be coded and kept confidential. Participation in the study will be voluntary and will require parental and teacher consent and student assent.

This research project has been reviewed and approved by the WCSU Institutional Review Board. If you have questions concerning the rights of the subjects involved in research studies please email the WCSU Assurances Administrator at **irb@wcsu.edu** and mention Protocol Number [to be filled in after approved]. This study is valid until [fill in 1 year date from approved date].

I appreciate the willingness to participate in this research study by the administration and staff of _____. In appreciation for your participation, your name will be included in a $10.00 gift card raffle drawing that will randomly select 20 participating teachers on January 11, 2013.

Thank you for the continued support of your colleague's academic pursuits in education. If you have any questions, please feel free to contact me at xxxxxx.

Sincerely,

Natalie A. Morales

I agree to participate in the study. Please print and sign your name below.

_____ _____ _____

Please Print Name Signature Date

Appendix I

Parent Consent Cover Letter and Consent Form

Department of Education & Educational Psychology February 4, 2013

Dear (Parent),

I am a currently a fourth year Doctoral student enrolled in Western Connecticut State University's Ed.D Instructional Leadership program. This program requires that I design and implement a dissertation research study. The purpose of this study is to compare high school teachers and students views on academic achievement. The benefit of your child's participation in this pilot study would empower your child to take an active role in his/her learning and achievement in school.

Four different instruments will be used to conduct this study. The *School Attitude Assessment Survey-Revised (SAAS-R)* will collect information from high school students on their attitudes towards academic achievement. *High School Students' Views on Doing Well in School* will be used to find out the courses they are completing, student background information, and their views of the causes of student underachievement and possible solutions to resolving student underachievement. These procedures will take place during the month of February during non-instructional time and will take approximately 20-25 minutes. The data collected will be kept confidential and will not be published or reported to any external sources. Participation in the study will be voluntary and will require parental and teacher consent and student assent.

This research project has been reviewed and approved by the WCSU Institutional Review Board. If you have questions concerning the rights of the subjects involved in research studies please email the WCSU Assurances Administrator at **irb@wcsu.edu** and mention Protocol Number [to be filled in after approved]. This study is valid until [fill in 1 year date from approved date].

In appreciation for your child's participation, his/her will be included in a $25.00 gift card raffle drawing that will randomly select 40 participating students on March 15, 2013.

Thank you for your support in my academic pursuits in education. If you have any questions, please feel free to contact me at xxxxxx.

Sincerely,

Natalie A. Morales

I agree to let my child participate in the study & I confirm that I am at least 18 years or age or older. Please print & sign your name below.

_____ _____ _____

Please Print Name Signature Date

Appendix J

Cover Letter and Assent Form (Student)

Department of Education & Educational Psychology

February 4, 2013

Dear (Student),

I am a doctoral student at Western Connecticut State University. I am being asked to conduct a research study about high school students' achievement and I need your help. It will be a unique opportunity for, you, the student to help, me, the teacher. The benefits of your participation in the study would be to provide you with an opportunity to express your feelings and opinions about your school experience.

In my study, I would like to compare high school students' and teachers' views on achievement in school. The *School Attitude Assessment Survey-Revised (SAAS-R)* will collect information on your attitudes towards achievement in school. *High School Students' Views on Doing Well in School* will be used to find out the courses they are completing, student background information, and their views of the causes of student underachievement and possible solutions to resolving student underachievement. These procedures will take place during the month February in your Social Studies class during non-instructional time and will take approximately 20-25 minutes. The information you provide me will be kept confidential and will not have any effect on your grades. I won't even be asking for you to write down your name. Your participation in the study is completely voluntary and will require your approval and your parent's consent.

The study has been reviewed and approved by the Western Connecticut State University Institutional Review Board (IRB).

In appreciation for your participation, you will be included in a $25.00 gift card raffle drawing that will randomly select 40 participating students on March 15, 2013.

Thank you for your help! It is greatly appreciated! If you have any questions, please feel free to ask me.

Natalie A. Morales

If you would like to be part of this study, please print and sign your name below:

_____	_____	_____
Please Print Name	Signature	Date

Appendix K

Qualitative Data Audit Report

Qualitative Audit for Natalie A. Morales

An audit of Ms. Natalie A. Morales' qualitative research study was concluded on February 17, 2014, by Susan H. Guertin, Ed.D. Ms. Morales presented two code dictionaries, one for teachers and one for students who had completed a survey. Ms. Morales met with Dr. Guertin to discuss her thoughts on the coding process. She explained that she had performed open coding, followed by axial coding, and then grouped the codes into emerging themes. Once that work was accomplished, she further compressed her themes into overarching code categories. The auditor examined the code book and asked some clarifying questions. Then she recoded random parts of the qualitative data from the teacher and student survey data to verify Ms. Morales' codes.

For the student data, lines 1-25, 52-70, and 282-302 of the codebook were examined. The auditor disagreed with several codifications, which accounted for 89% agreement between the researcher and auditor. For example, the data on row 10 were related to extra help after school. The auditor thought that it should be internally attributed because the student had the power to make the decision to attend, but the line was externally attributed. In lines 52-70 there were several statements about student boredom, partying, and being too cool to do well in school. The auditor did not agree that these statements should be coded as self-regulatory skills, because they seemed to be more related to attitude or motivation. On line 282, the student blames the teacher for his lack of achievement instead of taking responsibility, and line 289 talked about life being a game. These statements did not strike the auditor as a societal issue, but a motivational one. On line 302, the subject says that leaving school is the cool thing to do. This seemed to be a peer pressure issue. An email was sent to the researcher to alert her to the differences of opinion. The researcher agreed to change one code, *student regulatory skills*, to *student regulatory behaviors*, to better reflect the essence of the data regarding boredom and

partying. She also agreed to the change to line 302, and discussed her reasons for keeping her other codes the same. At the end of the discussion, the auditor agreed with the researcher 92% of the time on the student data. The auditor agreed 100% with the researcher's coding of the teacher data. Lines 1-20, 50-70, and 120-140 were recoded. At first, the auditor questioned the coding of line 120, which concerned the impact of testing. The auditor thought the code should be school related, but the researcher's explanation was satisfactory, resulting in total agreement between the two parties.

The researcher discussed her triangulation methods. She explained that the quantitative data was contrasted and compared with the qualitative themes and code categories. Her quantitative results indicated that students' academic self-perception and motivation/self-regulatory skills significantly affected student achievement. The results of the qualitative survey data supported this outcome. The conclusions and implications of this study were discussed, and this audit was completed successfully.