

A STUDY OF THE RELATIONSHIP BETWEEN STUDENTS' SELF-REPORTED SELF-  
ESTEEM LEVELS AND THEIR PERCEPTIONS OF TEACHER BEHAVIORS

by

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## ABSTRACT

Research has shown that self-esteem, particularly among female students, can decline during the elementary school years and beyond. Self-esteem is a very important indicator of how well students will adapt to their surroundings and perform in and outside of the classroom setting. Very little research identifying the impact of students' perceptions of teachers' controlling or supportive behaviors in relation to self-esteem has been studied among middle school high-ability math students in the United States. The purpose of this quantitative, predictive, correlational study was to examine the effect of the criterion variable of self-esteem based on the multiple predictor variables of gender and perceptions of teachers' behaviors as controlling or supportive. A multiple regression was used to indicate the degree and statistical significance of the relationship between the variables. The sample comprised high-ability male ( $n = 63$ ) and female ( $n = 64$ ) Grade 6 math students from 6 classrooms in 3 schools in rural northwestern Georgia. Examining the relationship between the self-reported self-esteem of male and female students and their perceptions of teachers' controlling or supportive behaviors might provide the educational community with a better understanding of applicable teacher traits to exhibit when working with students.

*Keywords:* self-esteem, controlling behavior, supportive behavior, perception

## Dedication

I would like to dedicate this accomplishment to my family, for which none of this would have been possible otherwise. To my wife, Maggie, your tireless devotion to me and our family during the countless hours spent toward the completion of this paper did not go unnoticed, and I love you even more for it. Thank you to my children, Emma, Nate, and Jack for your forgiveness of all the times when my schoolwork had to replace the time that could have been spent with family. To my parents, Curt and Marie, thank you for your continual love and support and countless trips to watch the grandchildren so I could work on schoolwork. To my aunt Connie who helped me see, from an early age, the importance of a good education, I thank you. Finally, to all other family members as well as friends and colleagues for their continual support, I sincerely thank you.

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### **List of Abbreviations**

Common Core State Standards for Mathematical Practice (CCSSMP)

Trends in International Mathematics and Science Study (TIMSS)

STEM (science, technology, engineering, and math)

Social Learning Theory (SLT)

National Education Association (NEA)

Rosenberg Self-Esteem Scale (RSES)

Students' Perception of Teachers' Controlling Behavior Scale (SPTCBS)

Students' Perception of Teachers' Supportive Behavior Scale (SPTSBS)

## CHAPTER ONE: INTRODUCTION

### Overview

The 42-state introduction of the new Common Core State Standards (CCSS) was established in part to provide more opportunities for positive interactions between students and teachers. Students' perceptions of teacher behavior have been found to have an impact on students' ability to perform academic tasks and have helped to support the development of their self-esteem. Currently, very few recent studies have examined the self-esteem of male and female students in relation to their perceptions of teachers' behaviors. Furthermore, with the introduction of two new scales to measure students' perceptions, no studies relating self-esteem and students' perceptions have been conducted in the United States. The purpose of this predictive, correlational study was to measure the relationship between students' self-esteem and perceptions of teachers' behaviors as controlling and supportive, and gender. Chapter One discusses the background of students' self-esteem and its formation, as well as the beginning of students' perceptions based on teachers' perceptions. The problem statement was also examined, including the separation of students' perceptions of teachers' behaviors as controlling or supportive, to include recommended research based on previous studies. The purpose and significance of the study also are addressed.

The research question (RQ) pertinent to this study was introduced, along with definitions related to this study. Although female students continue to receive advanced degrees at a higher rate than their male counterparts, entrance into STE-based fields (i.e., science, technology, engineering, and math) remains dominated by males. Instructional delivery is one factor that discourages women from participating in these subjects. Based on the earlier work of Good (1981), students' perceptions of teachers' behaviors were classified as controlling or supportive.

Teachers' perceived behaviors in the classroom, labeled as controlling or supportive, and their relationship to high-ability Grade 6 math students' self-esteem, were addressed.

### **Background**

Teachers' behaviors toward students have been identified as a major contributor to students' performance in the classroom (Ismail & Majeed, 2011). Currently, 45 of 50 states have incorporated a new, statewide evaluation of teachers' performance, which includes an assessment of teachers through a student perception survey (Wallace, Kelcey, & Ruzek, 2016). The advancement of teacher evaluations beyond student test scores and administrator observations incorporates new and different ways to assess how teachers teach and how students learn. In addition, the 42-state adoption of the CCSS for Mathematical Practice (CCSSMP) has created additional incentive for teachers to incorporate more opportunities for students to participate in the mathematics classroom (Yanisko, 2016).

School systems across the United States continually look for new ways to increase high-ability students' math performance. Since the late 1990s, students in the United States have fallen far behind students in countries such as China, Japan, and Singapore in math and science achievement (Ker, 2016). High-achieving math students' scores in the United States also are significantly lower than those of high-achieving math students in East Asian countries (Ker, 2016). The new CCSSMP were partially created to require all math students, including those considered high ability, to be able to evaluate the work of other students while communicating mathematically with peers and teachers. Therefore, interactions between students and teachers have become an important facet of student performance. Smart (2014) noted that positive interactions between students and teachers have been found to benefit students' academic development and their attitudes toward learning. The behaviors and reactions of teachers also

have been found to help to build the positive and negative values that promote students' self-esteem (Imran, 2013).

The importance of the student-teacher relationship is not a new concept. In 1968, Rosenthal and Jacobson first examined how teachers interacted with students based on placement of high- and low-ability groups. In the study, teachers were informed that certain students were expected to show dramatic increase intellectually throughout the school year, although no basis for this claim was ever established. The increase in performance of the selected students led Rosenthal and Jacobs to conclude that teachers' perceived behaviors toward students did increase student performance outside of the classroom. These results, however, were met with much criticism based on the interpretation of test scores and the fact that the students were never observed in the classroom setting.

Over the next 15 years, observations of teachers' behaviors concluded that the teachers behaved differently when interacting with students. Good (1981) discovered that even when teachers were observed teaching the same materials at the same schools, behaviors toward students could vary dramatically. Results showed that teachers expected a certain type of behavior from particular students. In return, teachers' behaviors with students within the classroom were based on student behaviors observed. Students with higher levels of understanding often were given more praise for correct responses, less criticism, and more attention than what their lower counterparts received (Good, 1981). Students considered lower achieving were observed receiving less time from teachers to respond to questions, were praised less frequently, and were criticized more harshly for providing answers inconsistent with teachers' expectancies.

The teachers' behaviors based on their perceptions of students were found to affect the students' level of academic achievement toward learning as well as their self-concept, part of which is self-esteem. In 2010, these teachers' behaviors were labeled as either controlling or supportive, and two new instruments were created to measure students' perceptions of these teacher behaviors (Kususanto, Ismail, & Jamil, 2010). Perceived supportive behaviors relevant to these processes gave students more freedom to learn, whereas perceived controlling behaviors prohibited this freedom to learn because the majority of class time was spent dealing with discipline issues (Kususanto et al., 2010). These student observations were incorporated into Bandura's (1971) social learning theory (SLT), which posited that students' ability to perform is affected by the observations that students make and the actions and reactions that shape future performance.

Fundamental to Bandura's (1971) SLT is the assertion that people observe one another and make decisions based on those observations. Human beings have the distinct ability to observe others, anticipate future implications of using the behaviors, and modify their own behaviors accordingly (Bandura, 1971). Bandura believed that observational learning comprises four processes: attention, retention, reproduction, and motivation. These four processes of students are modeled by the performance of teachers in the classroom and can have a direct impact on students' academic performance.

In the first process, attention, Bandura stated that individuals will pay attention to the model that displays interesting behaviors while ignoring the behaviors with unpleasing characteristics. Students' behaviors are adjusted based on the behaviors of the teachers. Likewise, teachers' behaviors are based on the reactions of the students.

In the retention process, students must be able to retain visual information from vocal cues, even when the visual information is removed (Bandura, 1971). The ability of students to recall these visual cues facilitates retention of the information. In the third process, reproduction, students must be able to organize earlier visual clues into new sets or patterns of behaviors (Bandura, 1971). If students do not possess visual clues, they cannot organize patterns successfully. The final process, motivation, requires a culmination of the first three processes. Once students possess the ability to pay attention, retain required information, and organize this information, they must be motivated in order for learning to take place (Bandura, 1971).

The traditional high-ability mathematics classroom provided multiple opportunities for the first three processes to be achieved. Previously, rules for mathematical process were presented by teachers from textbooks and memorized by students; verification of the rules was presented through application and examination (Yanisko, 2016). Much of this focus is placed on students and can only be controlled by teachers if the material is not presented. Under Bandura's (1971) SLT, the fourth process, motivation, relies on the completion of the first three processes. With the introduction of the new CCSSMP, a stronger emphasis is placed on the ability of teachers to provide stronger communication between students and teachers. The teachers must incorporate a variety of instructional methods in an attempt to reach all students. Motivation of students can be exemplified through praise and positive behaviors of teachers, characteristics of supportive behavior.

Classroom models, particularly in math, are changing to meet the needs of the current curriculum. In the traditional math model, student responsibility required the application of new rules presented by teachers or textbooks, student performance of the applied rules, and verification by teachers of correctly applied rules (Yanisko, 2016). The new CCSS place a



stronger emphasis not only on student mastery but also on student reasoning through successful communication by students and teachers. Students placed in high-ability groupings have different abilities and require a variety of instructional strategies to be successful (Missett, Bruner, Callahan, Moon, & Azano, 2014). Students who feel comfortable with their teachers feel more secure in their communication, ask more questions, and seek assistance during classroom discussions (Smart, 2014). In relation, teachers' expectations of students in high-ability classrooms correlate to student performance. Urhahne (2015), in relation to the earlier work of Good (1981), found that students expected to do well by teachers often performed at higher levels than students not expected to perform at a higher level.

As students become more confident in their ability to perform certain tasks, their self-esteem becomes more positive. Just as academic performance affects self-esteem, self-esteem affects academic performance (Hosogi, 2012). Self-esteem plays a large role in the ability of students to complete work and reach their academic potential (Chohan, 2013). Having healthy self-esteem helps students to advance psychologically and academically (Hosogi, 2012).

Adolescent students who have positive self-esteem have a positive relationship with educational attainment and are more likely to be successful in the workforce (Imran, 2013). Likewise, low self-esteem has been found to correlate with low academic achievement (Imran, 2013). Low self-esteem is not based on the failure of students but on the manner in which important people in students' lives react to the failure (Lawrence, 2006). Kuster, Orth, and Meir (2013) concluded that people with low self-esteem are less responsive when receiving feedback about performance and are less willing to interact with others, including authoritative figures in the workforce.

## **Problem Statement**

The effects of self-esteem on the academic progress of students in high-ability groups have long been topics of research (e.g. Abadzi, 1984; Araujo & Lagos, 2013; Becker et al., 2015; Catsambis & Buttaro, 2012; Chessor, 2014; Cheung & Rudowicz, 2003; Siu & Tse, 2012). Students identified and grouped as high ability often have very high self-esteem in early adolescence; however, positive self-esteem, particularly among female students, begins to decline as they progress through the early middle school years (Vogl & Preckel, 2014).

Over the last 35 years, women in the United States have completed more bachelor degrees than men have. Men however, continue to earn degrees in STEM academic subjects at an excessively higher rate than their female counterparts (Kombe, Carter, Che, & Bridges, 2016). Instructional delivery is one factor that discourages female students from pursuing STEM careers (Kombe et al., 2016).

The separation of students' perceptions of teachers' behaviors as supportive or controlling found that differences in teaching styles had a significant influence on the self-esteem of students in Malaysia and Pakistan (Ismail & Majeed, 2011; Kususanto et al., 2011). These studies, however, did not address differences in the perceptions of male and female students. Several studies have been conducted to measure how self-esteem can affect students' well-being and their academic progress at the primary level, but little research has been conducted in the United States at the secondary level. Furthermore, no research has been conducted in the United States incorporating the controlling and supportive instruments. Therefore, this study focused on the lack of understanding of male and female students' perceptions of teachers' behaviors and the relationship to the self-esteem of high-ability middle school students.

### **Purpose Statement**

The purpose of this predictive, correlational study was to examine the self-esteem of male and female high-ability Grade 6 math students and measure the relationship between students' self-esteem and their perceptions of teachers' behaviors as controlling or supportive and gender at three middle schools in northwestern Georgia. The criterion variable was self-esteem. The predictor variables were students' perceptions of teachers' behaviors as controlling or supportive and gender. Self-esteem has generally been defined as the aspect of self-concept that corresponds to an overall view of the self as worthy or unworthy (Baumeister, Campbell, Krueger, & Vohs, 2003). Controlling behaviors generally have been defined as teachers' behaviors perceived by students as placing a strong emphasis on monitoring behavior rather than teaching new material (Ismail & Majeed, 2011). Supportive behaviors have been defined as teachers' behaviors perceived by students to include a strong emphasis on student-led instruction rather than classroom management (Ismail & Majeed, 2011). Participants were 63 male and 64 female Grade 6 students in high-ability math groups (i.e., those within the upper 10% of classmates) from three middle schools in northwestern Georgia.

### **Significance of the Study**

The CCSSMP were created to provide high-quality and rigorous teacher-student interactions through viable arguments and problem-solving techniques (Yanisko, 2016). Students' perceptions of the classroom environment are one of the biggest motivational factors in the classroom (Wallace et al., 2016). Soenens, Sierens, Vansteenkiste, Dochy, and Goossens (2012) asserted that teachers' controlling behaviors to have a negative effect on motivation; however, Soenens et al. did not examine self-esteem. Earlier studies by Kususanto et al. (2010) in Malaysia and by Ismail and Majeed (2011) in Pakistan found that students' perceptions of

teachers' behaviors had a significant influence on the self-esteem of students from both high- and low-ability groups, although differences between gender was not measured. This study might help schools using CCSSMP by looking to develop programs to help high-ability math students to more easily identify positive teachers' behaviors and ways to incorporate these positive behaviors into meaningful classroom instruction time. Students can learn how to participate in classroom discussion and interact with teachers and other students, and they can gain a better understanding of constructive criticism from teachers and how to use it to become more productive in the classroom.

Even though female students continue to receive undergraduate degrees at a higher rate than their male counterparts, their desire to complete degrees in STEM-related fields continues to be an issue. Identifying students' perceptions of teachers' behaviors found beneficial to classroom participation in STEM core classes might give schools the opportunity to design school programs that elicit these positive behaviors. Results of this study also might help school administration during the interviewing process when hiring high-ability math teachers by creating interview questions related to desired positive teachers' behaviors.

### **Research Question**

RQ: How accurately can students' self-esteem be predicted by the linear combination of gender and the perceived controlling or supportive behaviors of teachers?

### **Definitions**

1. *Controlling behaviors* - Teachers' behaviors perceived by students as placing a strong emphasis on monitoring behavior rather than teaching new material (Ismail & Majeed, 2011). Controlling behaviors limit student participation in classroom discussions while hindering their ability to fully grasp new material.

2. *High ability* - Students who have a record of consistently ranking in the top 10% of high academic achievers in class (Schmitt & Goebel, 2015).

3. *Perceptions* - Students' interpretations of teachers' behaviors (Smart, 2014). In this study, students' perceptions of teachers' behaviors was based on students' observations.

4. *Self-esteem* - The evaluative aspect of the self-concept that corresponds to an overall view of the self as worthy or unworthy (Baumeister et al., 2003).

5. *Supportive behaviors* - Teachers' behaviors perceived by students to include a strong emphasis on student-led instruction rather than classroom management (Ismail & Majeed, 2011). These behaviors include student-lead classrooms, more time for student response, and the reception of adequate feedback.

6. *Teacher behaviors* - The behaviors including oral feedback and written communication, as well as non-verbal communication to include body language (Y. Chen, Thompson, Kromrey, & Chang, 2011).

## **CHAPTER TWO: LITERATURE REVIEW**

### **Overview**

This literature review provides an overview of the theoretical construct of self-esteem and its correlation to male and female students' perceptions of teachers' behaviors as controlling or supportive. The review begins with Bandura's (1971) SLT, which states that human beings observe one another and act and react based on these observations. Because students' environments before and during school play a large role in their academic performance and ability to advance among their peers, I provide brief explanations of self-esteem, its development in adolescence, and its formation as the basis of self-concept. I then discuss ability grouping because this placement of students was crucial to the study. Because students' learning behaviors are partially based on how they can best fit into their new group setting (Vogl & Preckel, 2014), I also address the rationale for placing students in high- or lower ability groupings. The review of the literature also addresses students' perceptions of teachers' behaviors based on how students' reactions to these perceptions affect their self-esteem (Kususanto et al., 2010). Finally, because the Students' Perception of Teachers' Controlling Behavior Scale (SPTCBS) and the Students' Perception of Teachers' Supportive Behavior Scale (SPTSBS) are relatively new instruments, their development and usefulness also are explained.

### **Introduction**

The World Health Organization (WHO, 2000) stated, "Positive self-esteem protects children and adolescents against mental distress and despondency, and enables them to cope adequately with difficult and stressful life situations" (p. 13). Self-esteem is the basis of human beings' self-worth and plays a critical part in what people expect in their lives and how well they work with others (Frant, 2016). Self-esteem is the sense that individuals have of their ability to

cope with life and make sound judgments based on their confidence in completing regular tasks (Duari, 2012). Several studies have been conducted on the relationship between self-esteem and the academic performance of students in high-ability groupings (Imran, 2013; Van Houtte, Demanet, & Stevens, 2012; Vogl & Preckel, 2014). International research relating students' self-esteem to their perceptions of teachers' behaviors also has been conducted using two new instruments, the SPTCSB and the SPTSBS (Ismail & Majeed, 2011; Kususanto et al., 2010); however, studying aspects of self-esteem related to the gender of students in high-ability groupings using these instruments has not been addressed in the United States.

### **Theoretical Framework**

Bandura (1971) introduced the SLT in 1963 to better understand how human motives, including social and learning variables, can influence human behavior. The initial theory assumed that behavior is based on the consequences of interactional experiences. Bandura revised the SLT in 1977 to include the influence of observing others' behaviors. Self-efficacy, using Bandura's (1971) SLT, is determined based on the direct influence of others and individuals' reactions. How individuals react to these influences is based on three separate but interrelated controls: intrapersonal influences, the engagement of individual behaviors, and the environment to which individuals are exposed (Bandura, 2012). Environmental controls are then further divided as imposed, selected, and constructed environments into which individuals are placed. In an imposed environment, such as the current high-ability grouped study, students have little control over their placement, but they are allowed to interpret information and respond to it (Bandura, 2012). Selected environmental controls are applied only if the students choose to accept and practice them. Students work to create an environment that supports them and allows them to have control based on the construction of the group (Bandura, 2012).

Bandura's (1971) SLT posits that human beings observe one another and complete tasks based on these observations. The modeling of these behaviors is an effective tool that students can use to emulate the work of those around them. Bandura (1971) believed that four conditions must be met to support effective learning: attention, retention, reproduction, and motivation. These conditions are based not only on the environment created by teachers and students but also on the behaviors of students and teachers in that particular environment. Individual achievement cannot be completed without the help of others. No student has total control over all decisions made within a group. Individual ideas and decisions, including those of teachers, must come together to develop unified decisions that can be accepted in the best interests of students (Bandura, 2012).

Bandura's (1971) SLT bases much of the knowledge that individuals obtain upon the attention received from teachers in relation to the activity. Perceived supportive behaviors allow more positive interactions between students and teachers, whereas controlling behaviors allow less time for academic interaction. Time spent with individual students is increased in the perceived supportive teacher behaviors and decreased by controlling behaviors. According to the SLT, the amount of time spent with individuals affects how much information they will retain. Retention, the second condition under Bandura's SLT, of previously taught material is related to the amount of time that the material is rehearsed and how well it is organized. By observing the presentation of new academic material presented by teachers and other students, students have the opportunity to analyze and reorganize the material and then provide student perceived positive or negative responses.

Varying amounts of time and focus on academic content are affected by the use of supportive or controlling behaviors. Bandura's (1971) SLT emphasizes the consequential



behaviors of individuals based on the reactions of others. In the current study, the attitudes and behaviors of the student were possibly reflected through the perceived behaviors of the teachers. According to Bandura, adolescents perform many of their actions subconsciously based on the positive and negative reactions of authoritative figures in their lives. Teachers' perceptions of students based on previous academic performance also play an important role in the positive and negative attitudes that students have in their ability to perform academically (Vogl & Preckel, 2014).

This study expanded Bandura's (1971) SLT by measuring the students' self-esteem based on the perceived reactions of their teachers (i.e., controlling or supportive behaviors). Students who consider themselves as having high self-esteem generally have high self-esteem in all academic areas (Ismail & Majeed, 2011). Therefore, self-esteem helps students' to develop the confidence to advance academically. Many aspects of students' future educational experiences and decisions depend on the development of self-esteem and self-concepts early in their educational journey. Although the many different experiences that children face early in life affect their self-esteem, their perceptions of their self-worth in the classroom are one factor that can help to determine much of their academic progress. The academic progress of students relies on the completion of the four processes that Bandura identified as key components of SLT.

## **Related Literature**

### **Self-Esteem**

Self-esteem has been defined as the evaluative aspect of the self-concept that corresponds to an overall view of the self as worthy or unworthy (Baumeister et al., 2003). Self-esteem is a subjective assessment that involves feelings of confidence and recognition of achievements by others (Orth & Robins, 2014). Positive self-esteem contributes to positive academic attainment

and the ability of individual to make positive adjustments to their behaviors. The confidence needed to complete tasks and have a positive attitude toward working with others is a characteristic associated with positive self-esteem (Parameswari, 2011).

### **Early Development of Self-Esteem**

The development of self-esteem begins in the home before children enter school (Parameswari, 2011). The quality of the parent-child relationship initiates the social composition of the self, or self-esteem (Hosogi, 2012). Harris et al. (2015) noted that although self-esteem develops from the quality of the parent-child relationship, self-esteem over time cannot be predicted by positive support from the familial unit. For many, separating family and school can be difficult because adolescents have become familiar with many of the rules and regulations established by the family. This imposed environment, one of the three types of environments found in the causal model of Bandura's (2012) SLT, must be chosen and initiated by the individual. As children mature and become acquainted with other people in their environment, their self-esteem is less impacted by the home environment and begins to be reevaluated by the neighborhood and school settings (Hosogi, 2012).

The importance of adolescents' self-esteem lies in the fact that it partially controls not only academic behavior but also the ways in which adolescents cope with life stresses and the thought processes that they will use throughout adulthood. In Western cultures such as those in Canada and the United States, the evaluation of self-esteem corresponds with many European countries, however, it must be noted that differences among cultures might explain some differences in self-esteem scores (Booth & Gerard, 2011).

Work-related problems were identified 10 years after adolescents were identified with low self-esteem (Kuster et al., 2013). Low self-esteem in adolescence has been a predictor of

poorer mental and physical health (Erol & Orth, 2011). The negative effects of low self-esteem also have been associated with higher levels of antisocial behavior, anxiety, and issues advancing academically (Harris et al., 2015). Most, but not all research, has associated high self-esteem with educational achievement. A study of 838 secondary students in the United States found a significant relationship between self-esteem and educational achievement for students in Grade 7, but not for students in Grade 9 (Booth & Gerard, 2011).

Self-esteem refers to students' perceptions of their self-worth (Hosogi, 2012). Self-esteem can be viewed as a ratio of successes versus failures in life (Hosogi, 2012). Students' self-esteem is one vital component in the establishment of self-concept (Arens & Hasselhorn, 2013). Self-concept leads to the perceptions that students have about their feelings, opinions, values, and beliefs (Parameswari, 2011). Bandura argued that perceived self-esteem can determine a person's ability to adhere to or decline to perform new tasks (as cited in Maddy, Cannon, & Lichtenberger, 2015).

Starting school is one of the first opportunities for children to establish negative and positive relationships beyond the familial unit. As children approach school age, the opportunities to establish new relationships help to further their self-esteem (Hosogi, 2012). Adolescents begin to behave in certain ways to develop their self-esteem and increase their likelihood of being accepted socially (Thomson, 2012). Adjustments to a new environment, along with new observations of and demands from different adults, can be very stressful for new students (Imran, 2013). The movement away from established comforts and beliefs begins as students are exposed to others and their philosophies and goals (Kohli & Gupta, 2013). The adolescent-parent relationship begins to go through a period of reformation as adolescents go through several developmental stages (Harris et al., 2015). These observations of positive and

negative behaviors allow adolescents to build viewpoints that become the basis of future self-esteem (Imran, 2013).

Positive parent associations, such as warmth, trust, and support, along with positive adolescent self-esteem, have been found across several countries, including the United States, China, Japan, Norway, and Australia (Harris et al., 2015). By Grade 2 or Grade 3, testing and performance monitoring begin to identify academic differences among students (Hallam & Ireson, 2003). These differences, particularly in mathematics and reading, begin to shape the presentation of material and the placement of students based on their academic capabilities (Hosogi, 2012). The introduction of inclusion classrooms and advanced class placement can begin during these early stages of elementary school. As students progress and are introduced to more difficult core subjects, a wider separation in self-esteem levels becomes evident in the grouping of students (Hosogi, 2012). Leana-Tascilar and Kanli (2014), in a study of 53 gifted and 31 average students in Grades 2 and 3 found that self-esteem levels changed based on gender and intelligence scores. Gifted students scored significantly higher than average students, and boys scored significantly higher than girls at this age level.

Students' self-esteem is based on the different situations that students are placed in and the ways that the individuals react to these placements (Hosogi, 2012). Self-esteem, whether high or low, is a vital aspect of students because it influences the attitude and happiness needed to be effective in the classroom (Parameswari, 2011). Students with low self-esteem often give lower levels of effort pertaining to new activities and often do not give enough credit to their accomplishments. Students with low self-esteem often make excuses for their classroom failures, rather than look for new ways to improve mistakes made in the classroom (Parameswari, 2011). Waddell (2006), as well as Wang, Kick, and Fras (1999), identified self-

esteem as a significant predictor of educational attainment. Self-esteem also gives students the confidence that they need to become productive members of society while also helping them to make appropriate choices and respond to change successfully (Duari, 2012).

How children feel among their peers, as well as how others evaluate them, can have a lasting impact on future learning. Each successful or failed educational experience results in a change in self-concept (Kash, 1976). Self-esteem is not only about how students feel about themselves but also how others feel about them (Ismail & Majeed, 2011). In addition to the psychological struggle to find their individual identities, children must cope with developing their own moral codes and decide how they intend to become productive members of society (Imran, 2013). Kohli and Gupta (2013) estimated that one third to one half of all adolescents suffer from low self-esteem in regard to academic achievement.

### **Adolescent Self-Esteem**

During adolescence, male and female students begin to build their identities, which make up self-concept, which is based largely upon self-esteem (Parameswari, 2011). Many of these students begin to experience decreased levels of self-esteem as they reach adolescence (Hosogi, 2012). This decrease often is more noticeable in female students as they struggle with their more dramatic physical changes during puberty (Chinawa et al., 2015). Khan, Imran, and Rizwan (2010), in a study of 450 adolescents in Pakistan, found significant differences between the self-esteem of male and female adolescents. Results of the study following a two-way ANOVA indicated that the male adolescents generally scored much higher on self-esteem scales than their female counterparts did. Much of this difference in scores was believed to be based on discrepancies between how the male students were treated in relation to such environmental factors as education, behaviors, and attitudes. Khan et al. also observed significantly different

results between male and female adolescents' self-esteem in comparisons of socioeconomic status (SES).

Adolescence through early adulthood is a time of many developmental changes (Kiviruusu, Huurre, Aro, Marttunen, & Haukkala, 2014). Although the development of self-esteem is a lifelong process, the most dramatic increases occur during adolescence. Huang (2010) found dramatic increases in self-esteem during adolescence and only small changes in self-esteem after the age of 30 years. In a 12-year study, Orth and Robins (2014) followed four generations of adolescents into early adulthood. The sample comprised participants ages 16 to 97 years. Orth and Robins determined that self-esteem developed in a curvilinear fashion, reaching its peak at 50 years of age and gradually declining, with an emphasis on a drastic increase in the adolescent early years. Likewise, in a study of students in Grades 4 to 8, Hosogi (2012) used Coopersmith's Self-Esteem Inventory to find that students in Grade 6 had the lowest self-esteem.

A qualitative study by Emil (1993) of 10 female students between the ages of 12 and 17 years found a sudden decline in the girls' self-esteem as they approached middle school. Emil reported that the self-esteem of the girls from female-only schools was more positive than that of the girls from coeducational schools. Emil, in the same study, interviewed 10 female teachers, who believed that in-service sessions of more than 1 or 2 hours would allow them to identify teaching styles appropriate for boys and styles appropriate for girls. Emil also found that teachers believed that math and science had the strongest relationship to self-esteem: The girls' self-worth deteriorated more quickly as they began to feel that these subjects were too difficult or that they were not capable of completing these classes (Emil, 1993).

Rentzsch, Wenzler, and Schütz (2015) used a multidimensional six-measurement model in a more recent study to observe the academic and nonacademic self-esteem traits of 661 German adolescents between the ages of 13 and 17 years and 348 adults between the ages of 22 and 65 years. Results of the study, which varied from the results of Emil (1993), did not identify any major differences in the structure of self-esteem in relation to gender as the participants progressed through adulthood. Harris (2015) noted that students in Germany are assigned to different schools when the students reach the age of 10 years based on their academic performance.

Parameswari (2011), who studied 72 adolescents using a bivariate correlation and *t* test, also discovered no significant gender differences in relation to self-esteem. Results showed that the students' self-esteem was an acquired trait developed through their interactions with parents, peers, and other adults in the adolescents' lives (Parameswari, 2011). Zeigler et al. (2014) pointed out that as female students continue to advance academically, particularly in math, the likelihood of confrontation from peers can occur, which can have a direct impact on female students' self-esteem. In the domains of academic self-esteem and self-esteem concerning criticism, the female participants in Zeigler et al.'s study scored significantly lower than their male counterparts across all age groups.

As students grow older, more complex factors that can affect their self-esteem become prevalent. Schwalbe and Staples (1991) found that male students generally attach more importance to social comparisons and that females tend to place more emphasis on praise given from authority figures. Advancement of academics, along with pressure from peers and educators, controls much of what students feel that they are capable of achieving. The self-esteem of adolescents is the most often lowered by the feelings of failure, rejection, and criticism

in relation to negative evaluations based on academic aptitude (Thomson, 2012). Academic performance affects not only children's ability to learn advanced material but also their ability to handle stress later in life (Chohan, 2013).

Students' academic success is partially based on how they view their self-esteem. In the same way that academic performance affects self-esteem, self-esteem also affects academic performance (Chohan, 2013). Academic performance has a direct impact on students' grades. Negative self-esteem has been related positively to delinquent behaviors, but not to grades (Supple, Su, Plunkett, Peterson, & Bush, 2013). Positive self-esteem has been linked to positive grades and good behavior (Supple et al., 2013). These grades, which to some extent are impacted by how teachers view the students' performance in class, also affect students' self-esteem. Self-esteem is shaped by academic outcomes. The ability to perform in and out of the classroom relies heavily on self-esteem (Chinawa et al., 2015). Ker (2016), in a study of math students from the United States and Singapore, found that the students' belief in their ability to perform mathematics was the biggest influence on success for students in both countries. High self-esteem is a very important concept to adolescents because it allows them to think more freely (Parameswari, 2011).

Positive or negative self-esteem can impact confidence levels and the ability to perform and complete given tasks successfully (Parameswari, 2011). Students' self-esteem affects their ability to process thoughts correctly. Students with low self-esteem can be less sure of their academic performance and less certain of the work produced in the classroom (Aspinwall & Taylor, 1993). Students with adequate levels of self-esteem perform better with school activities because of an advanced belief in their ability (Ismail & Majeed, 2011). The stress related to low self-esteem can lead to outbursts and delinquent behavior that might hinder learning capabilities



and opportunities (Ismail & Majeed, 2011). These outbursts negatively affect the dimensions of the classroom by requiring teachers to change the direction of the class. Healthy self-esteem helps students to advance psychologically and academically (Hosogi, 2012).

Much of students' self-esteem comes from how students view their self-worth based on comparisons made within the environment into which they have been placed (Hosogi, 2012). Generally, students who have high self-esteem in one academic area are considered having higher levels of self-esteem in all areas (Ismail & Majeed, 2011). Students who equate self-esteem to their performance in school often complete tasks and assignments at an elevated degree of effort (Ismail & Majeed, 2011). Students with high self-esteem generally have more confidence in their ability to perform at academic levels expected from educators and parents (Imran, 2013). These students are generally more confident in their studies and feel more pride in the work that they are producing (Chohan, 2013). High self-esteem is important in giving students the opportunity to think freely and gather and organize their thoughts based on previous positive experiences. High self-esteem also plays a large role in the success of students as they enter adulthood by providing them with positive outlooks about themselves and the right attitudes to succeed at work (Parameswari, 2011)

In turn, students with low self-esteem focus more on previously discovered weaknesses rather than how they can move forward by focusing on their strengths (Duari, 2012). Low self-esteem also is a factor in student absenteeism because students with lower self-esteem see less benefit to attending school on a regular basis (Hosogi, 2012). Research of girls in middle school who had lower self-esteem has found that these students skip school more often than male students do (Hosogi, 2012). Low self-esteem also has been associated with different psychological problems, including academic failure, eating disorders, loneliness, and depression

(Thomson, 2012). This stress has also been associated with the early onset of mental disorders in young adults (Hosogi, 2012).

Waddell (2006) studied 5,290 active participants of the workforce and found that the individuals who had low self-esteem as youth completed less postsecondary education than youth with high self-esteem. Waddell also noted that the participants with low self-esteem in their youth were less likely to remain employed 14 years after the completion of secondary education. Participants with low self-esteem who were still working also recorded receiving significantly less pay than those who recorded high self-esteem levels as a youth. Young people often view low self-esteem as a “self-fulfilling prophecy” which leads them to behave in a negative way based on the stigmatism low-self-esteem has associated with it.

Several studies comparing the self-esteem of students to their academic performance have been conducted, but most of them have focused on the individual students’ self-esteem in relation to their academic performance while in high school (Duari, 2012; Imran, 2013; Kohli & Gupta, 2013; Vialle, Heaven, & Ciarrochi, 2005). Furthermore, much of the research on self-esteem has been conducted in other countries, not the United States. In fact, no published research was found in the United States about the relationship of male and female students’ self-esteem to their perceptions of teachers’ behaviors as controlling or supportive.

Recent studies in Malaysia and Pakistan using the SPTCBS and the SPTSBS have been implemented in tandem with the Rosenberg Self-Esteem Scale (RSES); however, both scales have not been administered simultaneously in the United States in conjunction with the RSES (Ismail & Majeed, 2011; Kususanto et al., 2010). Both sets of researchers observed beginning high school students in Malaysia and Pakistan. Because self-esteem follows a curvilinear design, administration of all three instruments at the middle school level might help to explain the

correlation, if any, between the self-esteem of male and female middle school students and their perceptions of their teachers' behaviors as controlling or supportive.

### **Gender and Self-Esteem**

The construct of self-esteem has been studied by social scientists in relation to individuals' self-evaluations about their lives. Rentzsch et al. (2015) stated that self-esteem is "a basic domain of human functioning and is important for social interaction, mental health, and well-being" (p. 139). The behaviors of children as they enter adolescence play a much larger role than self-perceptions in the development of self-esteem (Rentzsch et al., 2015). Students accept or reject the behaviors of others based on the social feedback that they received in relation to their current levels of self-esteem (Porthius et al., 2014). As children gain new life experiences, their perceptions of what they can achieve become more realistic.

In math and science, two subjects that often see students grouped by ability, male students outnumber female students in high-ability groupings. Benbow and Stanley (1983) identified a male-to-female ratio of 13:1 in a talent search for the top 5% of math students in Grade 7 and Grade 8. In a later study by Brody, Barnett, and Mills (1994), the ratio had fallen to 6:1. These results have been based generally on female students' unjustified preconceived notions of their ability to perform in math and science (Preckel, Goetz, Pekrun, & Kleine, 2008). Kombe et al. (2016) noted that female students, particularly in math and science, tend to seek the attention of teachers less often and are less likely to volunteer in classroom discussions. Teachers in these situations are then less likely to ask female students challenging questions and are more likely to rely on more passive behaviors such as note taking.

Ziegler et al. (2014) acknowledged that although the ratio of male-to-female students in math and science classrooms are approaching equal numbers, female students continue to

demonstrate less confidence in their ability to perform in these classrooms. Furthermore, female students continue to enter math and science fields less frequently, even when their success is equal or superior to that of their male counterparts (Ziegler et al., 2014). Preckel et al. (2008), using a large sample of students in Grade 5 to Grade 10, found numerical and nonverbal reasoning differences between male and female students ranging only between 0.3% and 1% on IQ scores.

Differences in self-esteem levels between male and female individuals start at an early age. Badayai and Ismail (2012) conducted a cross-sectional study of 150 respondents in Malaysia. They concluded that the self-esteem scores among the children often were high because the children ascribed unrealistic characteristics of their performance and overestimated their capabilities at an early age. This decline was more prevalent among the female than the male students in relation to physical and mental aspects of the school setting.

A study of 2,448 Australian students in Grade 9 by Marshall et al. in 2015 found that low self-esteem had a minimal effect on the overall mental state of students who also exhibited high self-compassion. Results indicated that students' self-esteem depended on self-compassion. Students with perceived high and low levels of self-compassion benefited from having high levels of self-esteem. The self-compassion of the students related to how the students responded to perceived negative behaviors from others, particularly teachers.

Studies comparing the relationship of self-esteem between male and female students have had different results in different regions of the world. A recent correlational study of 306 Dutch students found no differences in self-esteem scores between male and female participants in the secondary school setting when using the Global Self-Worth Scale of the Self-Perception Profile for Adolescents (Poorthuis, Thomaes, Aken, Denissen, & Castro, 2014). In the Netherlands,

students transition to secondary school in Grade 7. However, Poorthuis et al. (2014) did note that some students' self-esteem saw a sudden decrease based on how well the students had been socially accepted before the transition to Grade 7 met their earlier expectations. Generally, according to Bhamani, Jamil, and Moshin (2014), the self-esteem of female adolescents tends to decline as they enter high school because of their dissatisfaction with physical changes to their appearance. In a study of 1,239 Norwegian students between the ages of 13 and 18 years, Mosksnes and Espnes (2013) found that the boys scored higher in regard to self-esteem, life satisfaction, and subjective health. Results of a study of 298 Grade 12 students in Singapore had similar results: The male students had significantly higher levels of self-esteem when mean scores between the genders were measured (Tan & Tan, 2014). The female students also exhibited higher levels of perceived academic stress in the study; however, Tan and Tan (2014) believed that much of this stress was related to gender stereotyping of the female students.

A recent study of 224 adolescents in Pakistan reported a statistically significant difference in the self-esteem of male and female adolescents (Bhamani et al., 2014). Bhamani et al. (2014) found a mean score of 83.2 for female self-esteem and a mean score of 80.2 for male self-esteem, with a *t* score of -2.45 and 22 degrees of freedom at the .05 level. These results contradicted the findings of many other studies in both Occidental and Oriental parts of the world that generally have shown that male adolescents have higher self-esteem.

Similar results from a study in Pakistan among 450 adolescents (Kahn, Imran, & Rizwan, 2010) found minor differences in SES among the adolescents. Results of a two-way ANOVA, however, found significant differences between male and female participants between the ages of 16 and 20 years. Robins, Trzesniewski, Tracy, Gosling, and Potter (2002) reported that male and female participants saw a decline in self-esteem during adolescence; however, the drop was

twice as high for female than for male participants. In a comparison of schools throughout the United States that had either ability or nonability groupings, Catsambis and Buttaro (2012) found that ability grouping had significantly “weaker psychosocial development” (p. 21) on male math students in Grade 8 who had been placed in high-ability groups math students and a small positive effect on female students in the same cohort.

Studies in the United States over the last 10 years correlating students’ self-esteem to their perceptions of teachers’ behaviors have been limited. Tosolt (2010) studied 50 students in Grade 5 to Grade 8 in a major Midwestern urban area and then analyzed students’ perceptions of teachers’ caring behaviors. The female students placed more value on teachers’ caring behaviors that helped the students to succeed academically; the male students placed more value on teachers’ caring behaviors that emphasized interpersonal interactions. This study emphasized the importance of caring behaviors on students’ academic and social success. Catsambis and Buttaro (2012), in an analysis of approximately 9,018 public school students, found that ability grouping of math students based on academic performance had significant effects on male and female students. The male students found it more difficult than the female students to identify the positive attributes that initially placed them in the group.

### **Measuring Self-Esteem**

Rosenberg (1965) was the first to develop a questionnaire to examine self-esteem. Several other questionnaires, including a revision by Rosenberg himself, followed. Rosenberg believed that because individuals can have positive as well as negative feelings toward objects, they also could have the same feelings about themselves. Thomson (2012) stated that the motive of individuals is not to preserve self-esteem, but to use self-esteem as a barrier to reduce the likelihood of being rejected or excluded by others. Rosenberg believed that self-esteem

manifests when individuals feel “a positive or negative attitude toward a particular object, namely, the self” (p. 30).

Coopersmith furthered Rosenberg’s (1965) initial explanation of self-esteem by expanding the definition to include the approval or disapproval that individuals place on themselves (as cited in Hosogi, 2012). Coopersmith believed that these self-assigned approval and disapproval ratings determine how individuals view their talents and successes in life and help to determine the value of their lives (as cited in Hosogi, 2012). Although several different definitions of self-esteem have been developed and modified over the last 50 years, nearly all of them have included attitudes or behaviors

Popular instruments such as the RSES, Coopersmith’s Self-Esteem Inventory, and Pope’s 5-Scale Test of Self-Esteem for Children have been used to analyze the self-esteem of adults and children; however, no instrument in particular has been able to measure self-esteem clearly. The RSES was developed in 1965 and is the most commonly used scale to measure self-esteem. It consists of 10 items, each of which is answered on a 4-point Likert scale of responses. The easy readability of the items makes it an ideal instrument to use with adolescents. Coopersmith developed the inventory in 1967. It consists of 50 items and is used to measure the self-esteem of adolescents. Students answer each of the 50 items with a “like me” or “not like me” response. Pope’s 5-scale Test of Self-Esteem for Children is a 60-item scale and measures self-esteem on five different scales: Global, Academic, Body, Family, and Social.

### **Ability Grouping**

Van Houtte et al. (2012) defined ability grouping as “the practice of dividing students for instruction according to their purported capacities for learning and usually refers to the placement of students into homogeneous learning groups” (p. 75). Ability grouping was

established to provide a tailored education to students with similar intellectual ability (Becker et al., 2015). Ability grouping provides a more homogeneous learning environment to allow students better interactions with peers while teachers create instruction designed to better meet the needs of students (Steenbergen-Hu, Makel, & Olszewski-Kubilius, 2016).

### **Formation of Ability Grouping**

In 1893, the National Education Association (NEA) required uniformity of all classes in every school subject covered in every secondary school in the United States (as cited in Mirel, 2006). However, in 1918, the NEA began to support the implementation of academic and vocational tracks to separate students based on performance leading to secondary school. Over the last 100 years, students across the United States have been placed in educational courses based on previously demonstrated abilities.

The implementation of tracking or ability grouping began to decline in the elementary and early middle school settings in the 1970s (Worthy, 2010). However, by the 1990s, a shift to earlier forms of ability grouping reemerged through the covert classification of courses. For example, some students might have been placed in Math Class A, a high-ability math class denoted solely by the letter A in the title of the course. Thus, schools could surreptitiously group students based on academic performance without actually referring to it as ability grouping. Many school systems have now opted to accept within-class ability grouping rather than use a school-wide system (Worthy, 2010).

Even though many school systems have moved away from the placement or grouping of students based solely on academic performance, the bias between different groups remains. Beginning in the early 1970s and continuing through the 1980s, concerns about the inequality of ability grouping and the classification of students led to support for the elimination or detracking



of students based on ability (Van Houtte et al., 2012). By the early 1990s, research focusing on ability grouping had dramatically diminished because of the negative feedback about ability grouping in the previous 2 decades. However, social pressure and the influence of U.S. policymakers led to a reintroduction of ability grouping in the late 1990s (Van Houtte et al., 2012). Although many schools have claimed that they do not identify their students by ability group, the labeling and placement of students continue throughout most U.S. schools (Worthy, 2010).

Many elementary schools and early middle schools in the United States have opted to discontinue the practice of ability grouping, or tracking, of students based on the negative impact on students' self-esteem (Worthy, 2010). Many schools have since replaced school-wide ability grouping programs with ability grouping within the classroom (Worthy, 2010). However, research gathered between 2003 and 2011 showed a dramatic increase in both reading, from 28% to 71%, and math ability grouping, reaching 61% by 2011 (Steenbergen-Hu et al., 2016).

Ability grouping can be formed through either regrouping students within the classroom or through streaming, the classification of students into specific classrooms based on individual performance (Becker et al., 2015). In the high-ability classroom setting, individuals are placed based on previous performance. Student placement in high-ability groups is determined at the end of Grade 5 and is based on three criteria: (a) previous academic performance, (b) request of a student's previous teacher, and (c) achievement on one of two standardized tests. Students must complete two of the three criteria for possible placement in this high-ability group.

### **Ability Grouping and Self-Esteem**

The purpose of ability grouping is to give homogeneous groups of students the freedom to teach each other by learning from their weaknesses and mistakes and building on their

strengths. Becker et al. (2015) asserted that psychosocial development is just as important as academic progress. Catsambis and Buttaro (2012) pointed out that ability grouping was established to help students to grow cognitively, but not socially. Abadzi (1984) followed the same group of 667 students from Grade 2 to Grade 4 and found no significant difference between high-ability and regular-ability test scores. Students in Grade 3 were evaluated at the beginning and end of the school year. Although differences in test results were not significant between the high-ability and the average-ability groups, self-esteem between the two groups was found to be significant from pretest to protest, with the high-ability grouped students' self-esteem rating much higher than that of the average-ability group.

A quantitative study of 892 high-ability and average-ability Hong Kong students in Grade 3 to Grade 6 found that students in the high-ability group had higher self-esteem than students in the average-ability group did (Siu & Tse, 2012). Students in the high-ability group also had better coping strategies than those in the average-ability group. Ismail and Majeed (2011) also noted that students between the ages of 14 and 17 years who have been placed in high-ability and lower ability classrooms have significantly different levels of self-esteem.

It must be noted, however, that students in high-ability groups in China are expected to perform at a higher level of academic achievement to bring pride to themselves and their families. Catsambis and Buttaro, in a 2012 study of 8,700 Kindergarten students in high-ability groupings and 8,000 Kindergarten students in lower ability groupings, found that ability grouping resulted in minimal academic gains for students in the high-ability groupings. Although the psychosocial development of students in the high-ability groups saw positive gains, students in the lower ability groups responded negatively to their placement. Catsambis and Buttaro suggested the need for more research into how severe the effects of ability grouping are

on Kindergarten students as well as the implications of these results on the students throughout their education.

Not every country treats ability grouping the same way (Ireson & Hallam, 2009). Many countries separate students based not only on performance but also on attitudes and behaviors observed early in the students' education. In the United States, students in ability groupings are assigned to certain groups and given specific courses to complete based almost entirely on previous academic performance. These courses are completed under the direction of school administration. Students in high-ability groups often are prepared for college through honors and advanced placement courses, whereas lower ability students often take high school coursework to prepare for occupations that do not require a college degree.

The ability grouping of high-achieving students allows for a faster pace to be established to better create homogeneous groups with related achievement levels. Coursework for the groups is based solely upon academic performance. Students in high-ability groups are asked to perform at certain academic levels and exhibit positive attitudes not necessarily seen in students in lower ability groups. Student performance often is based on a teacher's belief of an individual student's ability (Tong, 2002). High-ability grouped students often accept school policies as the standard, while average and low-ability students often look for ways to resist school guidelines in the classroom (Hallam & Ireson, 2003). Math students in high-ability grouped settings, however, exhibit many positive behaviors and strategies that can be learned by other students (Adediwura, 2011). These behaviors are likely to influence teachers' behaviors because teachers in high-ability classrooms look for only positive behaviors and expectations.

Ireson and Hallam (2009) conducted a case study and found little prior research of teacher-based attitudes of students' perceptions about ability grouping. Hallman and Ireson

found that most of the surveyed teachers understood that the students had been grouped by ability, and why. Results also showed that the teachers of students in lower ability groups felt that the students were teased inappropriately about the placement and that more discipline problems arose in lower achieving classrooms than from those of mixed or high-ability classrooms. Teachers in the study also believed that students in high-ability groups were sheltered from many of the negative comments directed toward students in mixed-ability or lower ability groups. Students in lower ability groups also were perceived by the teachers as manifesting behaviors more difficult to control based on the alienation that the students felt about their placement.

Student placement in high-ability groups, however, does not always equate to high self-esteem. Tan and Tan (2014) stressed the importance of meeting highly gifted students' socioemotional needs, including self-esteem, in addition to rational and academic development. Ability grouping of students generally has a negative effect on the self-esteem of high-ability students as more negative feedback from teachers becomes prevalent (Becker et al., 2014). A study of 280 Chinese secondary students conducted by Wong and Watkins (2001) revealed that students placed in a high-ability setting had lower levels of self-esteem than students placed in a low-ability setting. In their study, perceived academic performance of the students had the largest effect on self-esteem. Within-class comparisons between students in the high-ability group setting had a greater impact on self-esteem than the overall class placement did.

Kulic and Kulic (1992) performed a meta-analysis of 13 studies that used samples of elementary, middle, and high school students. Results of the analysis found that ability grouping increased the self-esteem levels of the students in the low-ability group but decreased the self-esteem levels of the students in the high-ability group. A multiple regression study by Cheung

and Rudowicz (2003) of 2,720 junior high students in Hong Kong found that students in a high-ability setting had slightly lower rates of self-esteem, academic self-concepts, and academic achievement. Results also showed that all ability grouping placements had a negative effect on self-esteem.

Differences in self-esteem also have been identified across gender. Preckel et al. (2008) found the motivation and self-concept of German female students in mathematics to be much lower than those of their male counterparts. In a study of 362 Grade 6 students placed in high- and average-ability groups, Preckel et al. found that the male students in both groups scored significantly higher than the female students in self-concept and interest in subject matter, even though the female students reported no difference in relation to grades. Leana-Tascilar and Kanli (2014) supported this study by identifying significantly higher self-esteem levels for boys than girls when measuring gifted and average students.

Kususanto et al. (2010), in a study of 302 Malaysian students placed in high- and low-ability groups, found that the students' perceptions of teachers' behaviors had a significant influence on their self-esteem. Students from the low-ability group reported higher levels of self-esteem when the teachers manifested controlling behaviors. This analysis was based on the assumption that the students received the most attention from their teachers within a teacher-controlled environment. Students in the high-ability group saw higher self-esteem levels when the teachers focused on academics rather than on controlling disciplines. Results indicated that although both groups reported higher levels of self-esteem, the reasons were based on different perceptions of the teachers' behaviors with the ability groups (Kususanto et al., 2010).

Students' ability to complete assignments during school depends partially on their confidence, or self-esteem, in facing new challenges throughout the school day. Burney and

Cross (2006) found that students in high-ability groups in rural areas often struggle to complete coursework because of their low levels of self-esteem, self-efficacy, and self-concept. Therefore, the student in this setting must complete much of the work during class to assure teachers that the students understand the material. This need can place an extra burden on teachers to maintain classroom control while providing a rigorous curriculum for each student. Lower levels of self-esteem manifested by rural students can continue to affect them beyond adolescence. According to the 2000 U. S. Census, 23.3% of all adults living in rural areas at the time did not have a high school diploma (as cited in Burney & Cross, 2006).

Research has shown that between one third and one half of all high- and low-ability students struggle with low self-esteem at some point of their adolescence (Kohli & Gupta, 2013). High-ability students with low self-esteem often question their ability to perform academically and appear less confident about the quality of their work (Aspinwall & Taylor, 1993). These students often make excuses for their failures and are less likely to exert the same amount of effort as other high-ability students with higher levels of self-esteem (Parameswari, 2011). They can feel overwhelmed by coursework, creating a situation that can further lower their self-esteem and create academic anxiety (Tran, 2012). Marshall et al. (2015) found that individuals working with students with low self-esteem often attempted different types of direct intervention to raise self-esteem levels, but they had few positive results. Many of these students are apprehensive to learning new and challenging academic concepts, refusing, instead, to accept new learning opportunities that might threaten prior positive learning experiences and reverting to old learning styles (Marshall et al., 2015).

High self-esteem is one of the major components of student confidence needed to complete coursework (Burney & Cross, 2006). The self-esteem of high-ability students is

influenced by their treatment from teachers regarding their classroom performance. Students in high-ability classrooms can elevate their academic performance once they reach an adequate level of self-esteem (Kususanto et al., 2010). Research has shown that underachieving gifted students can perform at a higher level when their self-esteem is targeted for improvement (Vialle et al., 2005).

Self-esteem can be based on a number of factors, with perceived behaviors of the teachers by the student being one of them. Students generally perceive one of two types of teachers' behaviors in the classroom: controlling or supportive. The perception is that students, both male and female, in a high-ability math class receive supportive behavior that focuses on academics rather than on controlling behaviors, which can lower the self-esteem of students. I sought to measure the relationship between male and female students' perceptions of teachers' behaviors as either controlling or supportive and their levels of self-esteem.

### **Effects of Grouping on High-Ability Students' Self-Esteem**

The effects of grouping of high-ability students have been a longstanding topic of self-esteem research (Vogl & Preckel, 2014). Although few researchers have argued against the academic benefits of ability grouping on high-achieving students, debate continues about the impact of grouping on their social and emotional development (Vogl & Preckel, 2014). Students in high-ability groupings often endure verbal taunts and comments from peers that can lead to social and academic consequences. In addition, they often are identified as ambitious and motivated, and as having few friends (Rentzsch, Schütz, & Schroder-Abe, 2011). Students in high-ability groupings who want to be accepted socially by their peers and teachers quite often feel rejected, with one of the consequences being loneliness, a factor that can ultimately lower self-esteem (Rentzsch et al., 2011).

Students in high-ability groupings begin to notice a disparity between themselves and students in lower ability groupings. The separation of students into groups results in comparisons, and high-ability students often exhibit “feelings of status gratification” based on academic placement (Van Houtte et al., 2012, p. 85). Van Houtte et al. (2012) also acknowledged that identifying students based on academic performance could have a negative effect on the self-esteem of high- and lower ability students. Students from each group tend to focus on students who perform better than they do, rather than on students who perform worse (Chiu et al., 2008). Shi, Li, and Zhang (2008) found that the more time students in a high-ability group stayed together, the more likely it was that their self-esteem would decline. Students placed in a high ability group, according to Chessor (2014), experience an increase in self-esteem when support is placed on effort, as opposed to praising the high-ability grouped students’ intelligence.

Reflected appraisal of individuals, along with social comparisons, comprises the RSES (Rosenberg, 1965). Reflected appraisal refers to individuals’ self-worth, or self-values. People evaluate their performance based on the criteria established by others. According to Rosenberg (1965), “Every society or group has its standards of excellence, and it is within the framework of these particular standards that self-evaluation occurs” (p. 14). Hallam and Ireson (2003), in a case study of six different schools in the United Kingdom that had ability grouping classrooms, found that 25% of all students not placed in a high-ability classroom preferred to move into a more challenging classroom to remove the stigma of lower level placement and that only 2% of students in the high-ability classroom requested a move to a lower-ability classroom.

As students progress with other students of similar ability, social comparisons, the second part of Rosenberg’s (1965) RSES, within the group begin. Students who do well in school



experience a higher level of social comparison, which can increase their self-esteem. These social comparisons, however, often are limited to the teachers and peers that students in the high-ability groupings come into direct contact with each day. For many high-ability students, these groupings often are seen only in within-class ability groups rather than school-wide ability groups. Students in within-class ability groups must enhance their social comparison by identifying only with others in the within-class ability classroom to avoid feeling separated from the entire group (Van Houtte et al., 2012).

Results of a recent study in Germany by Becker et al. (2015) were different. The participants were 155 students who had been placed in an “academically selective” school and 3,169 early elementary students who remained in the regular education setting until Grade 6. Students were surveyed at the end of Grade 4 and again at the end of Grade 5. Although both groups of students showed decreases in self-concept and anxiety, students in the academically selective group saw significantly lower self-esteem, almost one third of a standard deviation, between the two evaluations. Wong and Watkins (2001) conducted a study of 280 secondary students in Hong Kong. Their results also indicated that students grouped by ability did see lower levels of self-esteem, with students in high-ability groupings showing significantly lower levels of self-esteem.

### **Educators in Settings With Ability Grouping**

Educators who work with students in ability groupings often are assigned based on such factors as experience, level of expertise, and ability to teach multiple subjects. Students in high-ability groups are more likely to be taught by teachers who are more highly skilled and more experienced (Worthy, 2010). These teachers are more tolerant of more freely delegated student discussions and are usually more relaxed during class and in daily routines related to the

classroom (Lawrence, 2006). Teachers of students in high-ability groupings also expect a certain level of participation and that students should be able to work independently when necessary (Worthy, 2010).

Educators with positive attitudes about themselves often convey these positive attitudes to their students. Teachers with higher levels of self-esteem often produce students with high self-esteem as well (Lawrence, 2006). Most often, these teachers prepare faster paced learning environments that facilitate more engagement with students (Worthy, 2010). Teachers with high self-esteem can relate to the students on a personal level and allow students to perform routine daily tasks (Lawrence, 2006). Likewise, teachers with little experience with high-ability programs can have more negative reactions in dealing with high-ability students (Berlin, 2009).

Teachers of lower achieving groups often are less experienced than teachers of high-achieving groups (Worthy, 2010). Teachers with limited classroom experience are often placed in lower achieving classrooms based on the needs of the school and their lack of educational qualifications (Chohan, 2013). Expectations of new teachers for students in lower achieving groups often focus on behavioral issues and an emphasis on conformation to school rules and other expectations related to behavior (Worthy, 2010). Students in lower ability groups often are given less attention during class to work on assignments and less support because of teachers' lower expectations (Worthy, 2010). Kususanto (2010) noted that ability grouping is usually dependent on academic performance and does not represent individual students' potential.

The lack of teacher experience also can affect the performance of lower achieving students. Students from lower ability groups sometimes get extra time to complete assignments, a factor that can reduce the amount of material covered during the school year (Ismail & Majeed, 2011). As the amount of material covered diminishes, the gap between lower ability students

and higher ability students increases. As these gaps continue, the attitudes and beliefs of teachers and students continue to be affected negatively.

### **Teachers' Perceptions of Ability Grouping**

Teachers' behaviors toward students are one of the key determinants of students' academic performance (Ismail & Majeed, 2011). In general, teachers assigned to classes with students in high-achieving group tend to believe that those students will perform at a higher level than students in lower achieving groups (Kususanto et al., 2010). Students in high-achieving classes are expected to be more analytical thinkers and play a larger role in the outcomes of each class. Research has shown that many educators, even though they might be unaware of their actions, tend to create tension between students taking regular and honors courses (Worthy, 2010). Teachers of high-ability groups are preparing students for advanced secondary school courses and then college. Teachers of students in lower ability classes place a larger emphasis on behavior while helping them to prepare for vocational careers (Worthy, 2010). Classroom management also has been found to be easier under the ability group setting (Ireson & Hallam, 2009). Teachers' perceptions of how the classroom will operate often are based on attitudes and behaviors exhibited by students in previous educational experiences (Cabaroglu, 2012).

Teachers enter the classroom with a level of expectancy based on previous behaviors or actions that they have observed of students in earlier classroom settings (Smart, 2014). As teachers spend more time in the classroom, the teachers' behaviors subconsciously become the force that drives the class (Smart, 2014). How teachers manage their classrooms is based on what they expect from students (Vogl & Preckel, 2014). How students interact with their teachers often is based on their respective social backgrounds (Liu, 2013). Ker (2016) identified teachers' confidence to be a determining factor in the success of mathematics students in both

Singapore and the United States. The attributes that have the strongest influence on teachers' behaviors toward students are gender, race, and past academic achievement (Y. Chen et al., 2011). These behaviors manifest as teachers' written and oral responses to students' needs and their treatment of students (Smart, 2014).

Most educators believe that ability grouping removes the negative stigma of lower academic achievement (Hallam & Ireson, 2003). Many educators have supported lower and higher ability groups because they allow pacing that conforms to the needs of each classroom and allows full-class remediation if necessary (Missett et al., 2014). However, making generalized assumptions about lower achieving groups hinders the level of expected performance to be reached (Cabaroglu, 2012). Quite often, teachers focus on discipline, not academic achievement, when working with students considered lower ability.

Loeb and Horst (1978) conducted a study of 952 students in 41 Grade 4 and Grade 5 classes; the students completed Coopersmith's Self-Esteem Inventory. The teachers of the 41 classes, 33 of whom were female teachers and eight of whom were male teachers, completed Coopersmith's Behavior Rating Form. In 28 of the 33 classes led by the female teachers, male students reported higher levels of perceived self-esteem than the female students did. Because the female teachers rated the measures of self-esteem of the male middle school students lower, the male students had to find alternate ways, such as academic achievement, of attaining perceived higher levels of self-esteem. Female teachers perceived that the female students in 27 of their 33 classrooms had higher levels of self-esteem than the male students did. Results of Coopersmith's Self-Esteem Inventory showed that the perceived self-esteem of the female students was lower than that of the male students. The male teachers of the other eight classes perceived the self-esteem of their male students to be higher than that of their female students,

even though the female students in each of these male-led classrooms perceived higher levels of self-esteem than the male students did (Loeb & Horst, 1978).

### **Students' Perceptions of Teachers' Behaviors Based on Ability Grouping**

Students' perceptions of teachers' behaviors can affect academic performance positively and negatively. Students of high-performing groups and lower performing groups generally receive differentiated instruction (Ismail & Majeed, 2011). High-performing groups usually have more opportunities to complete work as well as choose the type of work to be completed (Y. Chen et al., 2011). Students in high-ability groups receive less directed work and have more freedom in how they complete assignments. Students in high-ability groups typically understand the type of work assigned to them and are generally accepting of the behavioral policies of the school (Hallam & Ireson, 2003). Bru, Stornes, Munthe, and Thuen (2010) also found that students' perceptions of teachers' support declined as the students approached middle school age because the students felt that their middle school teachers did not supervise students' schoolwork and behaviors as closely as their elementary school teachers did.

Lower achieving students often receive less feedback about their completed work (Y. Chen et al., 2011). Often, the time given for lower achieving students to complete work is extended, so opportunities for advancement of the topic are limited or not available. Many lower achieving students might receive more support and help from their teachers, but they do not feel the same level of pressure as high-achieving students in completing assignments (Y. Chen et al., 2011). Affirmative communication, that is, the provision of steady, constant, respectful, and open-minded interactions between teachers and students, gives students more confidence to ask for help in the classroom (Smart, 2014). Increased confidence between teachers and students encourages students to become more involved in their class work by seeking guidance from the

teachers when lost or confused about the course content. This increased involvement in the classroom provides emotional support to the students and has been connected to increased academic performance and motivation (Smart, 2014).

The impact of placement on lower and high-achieving groups has varied. Results from different studies have indicated that although students in high-achieving groups benefit more from grouping than lower achieving students do, the benefits are minimal (Ismail & Majeed, 2011; Kususanto et al., 2010). When students feel pressure from teachers to achieve at levels that might be above their own perceived capabilities, they might become overanxious, something that could negatively affect their self-esteem (Lawrence, 2006). Likewise, students in lower achieving groups can become unmotivated to learn new material, which hinders their ability to meet future educational goals (Crumpton & Gregory, 2011).

Even though most students in high-achieving groups meet the demands of the classroom, test results do not always favor these groups. Many students in high-achieving groups, particularly girls, have reported feeling that they could not thoroughly understand a subject because of the fast pace of instruction (Hallam & Ireson, 2003). Many students in high-ability groups, when given the option, would prefer to be placed in mixed-ability groups (Reuman, 1989). Boaler, William, and Brown (2000) further supported Reuman's (1989) conclusions in an interview of math students in high- and lower ability groupings and found that 83% of the math students wanted to return to mixed-ability groups.

Placement of students in lower and high-ability groups can be based on the social classification of the family unit (Boaler et al., 2000). Social classification is an important part of children's self-esteem. Students placed in high-achieving groupings based solely on social class sometimes find the material beyond their academic level. Blanchett (2006) suggested that the

practice of comparing and classifying students goes even further than simply identifying them by social status and extends to race. More obvious problems, such as resource allocation and inadequate teacher preparation, often are the result of the improper placement of students. When students feel overwhelmed or overchallenged, other behaviors begin to manifest. Students placed in high-achieving groups inappropriately often feel pressured to complete lessons much faster than desired.

### **Teachers' Behaviors**

**Perceived teachers' behaviors.** Teachers have the largest impact on the psychological needs of students (Cooper & Mines, 2014). Building a positive relationship with students is essential to their academic achievement (Madill, Gest, & Rodkin, 2014). A study of 150 Indian students by Khullar and Tyagi (2014) found a positive correlation between students' capability to adjust to classroom situations and their ability to resolve conflict. Results showed a significantly negative correlation between low ability to adjust to classroom situations and high scores in teacher-student relationships. In other words, the students were better able to adjust to classroom situations when they had good relationships with their teachers. A significantly negative correlation was found among boys in relation to self-esteem and the ability to resolve conflict; the girls presented a positive correlation between the two variables.

**Types of teachers' behaviors.** The placement of students in groups based on academic performance has resulted in students having two distinct perceptions of teachers' behaviors: controlling or supportive (Kususanto et al., 2010). More than 35 years ago, Good (1981) reported that slower performing students often received less feedback and praise, had less time to answer questions, and felt that teachers were more critical of incorrect answers given during class, all characteristics of controlling behaviors. Students perceived as higher achieving felt that

they were given more time to answer questions, had more control over classroom discussions, and received adequate feedback to responses during class, all characteristics of supportive behaviors (Kususanto et al., 2010).

***Controlling behaviors.*** Teachers' controlling behaviors reduce students' motivation because the students feel more obligated to wait for responses from their teachers before or while completing tasks. Hofferber, Basten, Großmann, and Wilde (2016) found that teachers who exhibited controlling behaviors toward students were more likely to threaten students when they did not perform. These behaviors lead to boredom, unhappiness, and an increased likelihood of students to remain inactive during noninstructional class time (Meyer et al., 2014). Students who do not make a positive connection with their teacher have been found to be less likely to remember subject content or might even refuse to learn any new material (Wallace et al., 2016).

Teachers' controlling behaviors can diminish the ability of students to adopt many self-motivational behaviors to become independently successful (Meyer et al., 2014). Controlling behaviors leave few opportunities for student-teacher interactions. This type of teaching often ignores students' perspectives, meaning that students have to act, think, and behave in ways reflecting the teachers' behavioral preferences. Historically, math and science classes often are dominated by teacher-led demonstrations that are repeated by the students through application (Yanisko, 2016). Research has shown that the teacher-student relationship in these classes tends to be much lower than that of other academic subjects.

Controlling teacher behaviors have been found to have a positive effect on students' extrinsic motivation while having a negative impact on intrinsic motivation (Hofferber et al., 2016). In other words, students have a more difficult time controlling negative behaviors such as yelling out in class or staying focused while struggling with more positive behaviors such as the



completion of specific tasks. A survey of 100 students, when asked why they decided to leave high school before graduating, identified the main reason as the lack of care by teachers (Cooper & Minness, 2014). Zhou, Lam, and Chan (2012) studied 158 Chinese students in Grade 5 and 115 U.S. students in Grade 5 and found that the Chinese students viewed teachers' controlling behaviors as much less severe than the U.S. students did. The Chinese students viewed the behaviors merely as a way to achieve optimal academic performance, whereas the U.S. students viewed the behaviors as a way of making them feel less motivated to complete their work. However, regardless of culture, children who had high socioemotional relationships with their teachers felt that the teachers were less controlling.

Mathematics teaching practices in the United States continue to suffer. Ker (2015) noted that although teaching styles in the United States changed dramatically from 1995 to 2003, results of student achievement in math continued to fall far behind other countries like Japan, Netherlands, and Singapore. In Singapore, levels of benchmark scores for multiple grade levels show a high percentage of high-performing students and a low percentage of low-performing students, as opposed to students in the United States, who had much lower percentages scoring in the high-performing students and much higher percentages scoring in the lower performing students (Ker, 2015).

In a study of 50 students in Grades 5 to 8, Tosolt (2010) found only one significant difference relevant to gender in regard to students' perceptions of teachers' behaviors. Female students in the study placed a higher value on teacher appreciation when related to academics rather than interpersonal relationships; male students placed a larger emphasis on strong interpersonal relationships with teachers over an emphasis on academics. Currently, teachers' responsibilities include being placed with a diverse group of 30 or more students and being asked

to promote each student academically and emotionally, regardless of gender, race, or background (Wallace et al., 2016). Teachers, under the new CCSSMP, also must teach students how to persevere in problem solving and participate in meaningful mathematical discussions (Yanisko, 2016).

Many schools are struggling to provide opportunities for connectedness between students and teachers. In a recent study by Cooper and Mines (2014), elementary school teachers admitted that trying to make a positive connection with one student often requires a decision of not making a positive connection with another child. When students in self-contained elementary school classrooms struggle to gain positive perceptions of teachers' behaviors, results from middle school, where students are constantly rotating between different teachers, fare even worse (Cooper & Mines, 2014). Madill et al. (2014), in a study of 635 students in Grades 1, 3, and 5 in Pennsylvania and Illinois found that as the students progressed through elementary school, their closeness to their teachers diminished. Diseth, Meland, and Bredablik (2014) reported that children's self-esteem also gradually declines during the elementary school years. This decline, which is more prevalent among girls than boys, continues as the students approach the middle school years (Diseth et al., 2014).

Students perceived to perform at lower levels often are called on less often, are criticized more harshly for incorrect answers, and are offered fewer follow-up questions, all of which are perceived characteristics of teachers' controlling behaviors (Ismail & Majeed, 2011). Students placed in high-ability groups are expected to perform at a certain level based on previous academic performance. Perceived controlling behaviors in the classroom limit the ability of teachers to differentiate instruction and obstruct the future academic capability of students (Ismail & Majeed, 2011).

***Supportive behaviors.*** A model of teachers' behaviors was identified from teachers' treatment of students based on preconceived notions of students' capabilities. Teachers in the study by Good (1981) who identified students as high achieving expected performance at higher levels than students perceived as lower achieving. Student treatment based on perceived behaviors was found to affect the students' academic (Good, 1981). Kususanto et al. (2010) identified and labeled these teachers' behaviors as supportive or controlling and created two new instruments in 2010, both of which have been used in various studies overseas, but not in the United States. Therefore, research based on controlling or supportive behaviors is limited.

Supportive behaviors are not limited to the classroom. Leadership in the workforce also can display supportive behaviors. Hocine, Zhang, Song, and Ye (2014) found autonomy supportive of leadership in the workforce and helped workers be more productive. Employees felt better about their performance and their ability to complete tasks when given the opportunity to state their opinions and be part of the decision-making process.

Supportive behaviors have been identified as teachers' behaviors that give students a much larger role in the activities and autonomy of the classroom. Good (1981) observed that higher achieving students generally led classroom discussions and activities. Teachers' supportive behaviors also gave students the initiative and motivation to learn the course material. In a recent study of Grade 10 biology students, a positive correlation was found between teachers' supportive behaviors and students' ability to speak out in class (Maulana, Opendakker, Brok, & Bosker, 2011). Supportive behaviors also gave students the opportunity to meet three basic physiological needs: autonomy, competence, and relatedness (Soenens et al., 2012).

Teachers of students in high-ability groups must adjust the pace of the curriculum to support differentiated instruction by adjusting the level of depth (Horak & Galluzzo, 2017).

Supportive behaviors demonstrated by teachers allow students to organize their thoughts and to ask more creative questions. These higher level thinking questions provide multiple discussion questions for classroom participation. Better classroom discussions, typically seen from supportive classroom teachers, challenge students to consider unconventional viewpoints and to better synthesize information (Bruce-Davis et al., 2014).

Students' perceptions of teachers' behaviors are strongly related to academic achievement in all subject areas (Maulana et al., 2012), particularly math and science. Ker (2016), in a study of Grade 8 students in the United States, Russia, Singapore, and South Africa, also found that confidence had the biggest impact on student achievement in mathematics. Q. Chen (2014) found among Grade 4 students in Singapore that self-confidence had the biggest impact on mathematics achievement. Results of a study of 1,158 biology students found a strong correlation between positive motivation and teachers' supportive behaviors and a negative correlation between motivation and teachers' controlling behaviors (Hofferber et al., 2016). Soenens et al. (2012) concluded that teachers who manifest controlling behaviors can affect students' learning and achievement negatively by lowering students' level of confidence.

Jia et al. (2009), in a study of 706 middle school students in China and 709 middle school students in the United States, found that the Chinese students' perceptions of teacher support were much higher than those of their American counterparts. Results showed that middle school students in China spend much more time with their teachers. Chinese students in middle school also had more freedom in the classroom: They had class monitors rather than teachers to supervise them.

In a Dutch study analyzing the data of 828 math students in Grade 1 and Grade 2, Zijlstra, Wubbels, Brekelmans, and Koomen (2013) found that the more the children perceived

their teachers as cooperative rather than hostile, the more mathematics they learned. Zijlstra et al. also noted that the teachers who demonstrated supportive behaviors had better classroom management skills and more ability to optimize students' attention. Summers, Davis, and Hoy (2017) found that teachers were more optimistic about their performance and the curriculum when they had students who felt more confident in their performance and had better relationships with the teachers. Results also showed that more positive attitudes toward learning by students were correlated with higher levels of self-esteem. The teachers' ability to express their expectations clearly while manifesting positive behaviors also gave students in high-ability groups the opportunity to make adequate academic progress, particularly in mathematics.

Numerous researchers have identified a correlation between teachers' positive behaviors and students' academic success. A qualitative study by Tong (2002) found that over time, students from any ability level would adhere to the requirements of the teachers and accomplish tasks based on expectations established in the classroom. An early study of teachers' behaviors (Lynch & Barnette, 1977) identified a significant increase in mean self-esteem scores when videotaping was used to monitor teachers' behaviors. Teachers of math students in Grades 3, 5, and 8 were monitored during their math classes, and students' self-esteem scores were compared to those of students who did not receive monitored teacher feedback within the same school. Vogl and Preckel (2014) reported no significant differences in the mean scores of students' self-concepts when comparing high-achieving, or gifted, students and regular education students.

**Students' perceptions of teachers' behaviors.** Students' perceptions of teachers' behaviors often are based on the students' academic performance and direct interactions with their teachers. Gardiner and Kosmitzki (2008) stated that high-quality interactions between students and teachers require respect, stability, consistency, and fairness. Teachers' perceptions

of how students are performing in the classroom can influence their behaviors toward those students. Students who feel secure in their relationships with their teachers are more comfortable requesting assistance in their day-to-day activities, something that can lead to improved student achievement (Smart, 2014). Students who feel that they have the support of their teachers perform at higher academic levels than students who feel that teachers care little for them (Wu, Hughes, & Kwok, 2010). Working in an environment conducive to learning gives students the freedom to express themselves without fear of reprimand. Positive reinforcement from teachers gives students the motivation to be successful academically as well as the social and mental well-being essential for positive self-esteem (Bru et al., 2010).

Positive relationships between teachers and students have been shown to have a positive influence on motivation and academic performance (Madill et al., 2014). Educators want their classrooms to be conducive to learning, to be stimulating, and improve students' cognitive and affective outcomes. Tran (2012) stated that the classroom-learning environment, along with cohesiveness between students and teachers and student satisfaction, are two of the most important variables needed to assess students' self-esteem. Tran added that warm, safe, and supportive classrooms improve students' academic achievement and self-esteem.

Jussim, Coleman, and Nassau (1987) studied 74 U.S. students using the RSES (Rosenberg, 1965). The mean lower self-esteem score was 32.89; the mean high self-esteem score was 46.17, indicating that students with high self-esteem gave higher evaluations of their individual evaluations and also perceived that teachers' evaluations of their performance were significantly higher. Bru et al. (2010), in a study of 7,205 Norwegian students in Grade 5 to Grade 7 (primary school) and Grades 8 to 10 (secondary school), found results similar to those of Jussim et al. Historically, primary school students in Norway experience a dramatic decrease in

their perceptions of school as they enter Grade 8. The largest single factor related to such a decrease has been attributed to the perceptions that they will receive less teacher support.

Primary school teachers in Norway place a stronger emphasis on their relationships with their students. The students at the three schools in this study did not see grades or marks until secondary school.

Teachers provide the guidance that students need to be successful. Interactions between students and teachers directly impact the quality of instruction (Liu, 2013). The more favorable the learning environment is for students, the more likely it will be that students will be responsive and active participants in class (Tran, 2012). These interactions are instrumental in the socioemotional development of students and help to support their psychological needs (Liu, 2013). Bru et al. (2010) found that academic support declined from 70% in Grade 5 to just above 20% by Grade 10. Much of this decrease was based on the students' perceptions that the student-teacher relationship would diminish as the students approached secondary school (Bru et al., 2010). Diaconu (2013), in a study of 420 students between the ages of 15 and 19 years, found that the female participants better understood the feedback from teachers and how to use the feedback as a motivational tool to learn new material.

Support from teachers is essential to having an effective learning environment. Many students begin to see a decline in positive reinforcement from teachers as they transition from elementary school to middle school and then to high school. Bru et al. (2010) found that even though primary school students in Norway demonstrated more positive behaviors in relation to teachers' academic support, significant change was noticed in the abrupt transition to secondary school. Diaconu (2013) found that students who had higher self-esteem understood the teachers' remarks more clearly. Positive correlations were found between the students' satisfaction with

their own personal development and their perceptions of their teachers' feedback in relation to grades on assignments. Students' self-confidence has the strongest influence on mathematics achievement (Ker, 2016). Ismail and Majeed (2011) identified higher levels of self-esteem from high-ability grouped students over low-ability students based partially on academic performance and social acceptance from teachers. In a similar study from Malaysia, low-achieving students found more support when teachers were able to control discipline problems and could spend more time helping individual students (Kususanto et al., 2010). The self-esteem of lower achieving students in this study was improved, albeit minimally, because the students felt that the teacher was more concerned about their academic achievement rather than the maintenance of discipline.

### **Summary**

Self-esteem is a critical element in determining self-worth and how well individuals can work with others. Positive self-esteem provides motivation essential to academic achievement. Motivation, according to Bandura (1971), is the culmination of the first three learning processes of attention, retention, and reproduction, and is essential for academic achievement. Adoption of the new CCSSMP requires positive teacher-student interactions and student-student interactions to ensure that students communicate mathematically, make viable arguments in the decision-making process, and become more confident in their math skills. Although U.S. students continue to score significantly lower on math benchmarks than students in other countries such as Singapore, confidence, a characteristic of students with high self-esteem, in learning math was seen to have the strongest significant effect on student learning in both countries.

By providing a friendly and supportive environment conducive to learning, teachers of high-ability students can motivate them and help them to develop higher levels of self-esteem



(Tran, 2012). Better classroom discussions can help students to synthesize information and understand alternate viewpoints essential to critical thinking. Even with the adoption of the new CCSSMP, however, female students continue to pursue careers in math and science at a much lower rate than their male counterparts. Students' perceptions of teacher' supportive behaviors give all students the ability to criticize classroom discussions productively while gaining confidence in their mathematical ability.

Previous research has focused on academic performance based on students' self-esteem; however, little research in the United States has compared the effects of teachers' behaviors (i.e., controlling or supportive) on students' self-esteem (Ismail & Majeed, 2011). Furthermore, no research has been conducted in the United States identifying the relationship between the self-esteem of male and female students and their perceptions of teachers' behaviors as controlling or supportive. Most studies relating self-esteem to academic achievement have been conducted with adult populations (Moksnes & Espnes, 2013).

## **CHAPTER THREE: METHODS**

### **Overview**

Students placed in high-ability groups are usually highly motivated and ambitious; however, they often feel lonely and rejected based on the perceived negative responses from teachers (Becker et al., 2015). The purpose of this quantitative, predictive, correlational study was to examine the effect of the criterion variable of students' self-esteem based on the multiple predictor variables of gender and perceptions of teachers' behaviors. The study was conducted at three middle schools in northwestern Georgia. This chapter provides information about the research design, participant selection, sample, instrumentation, and data collection and analysis procedures.

### **Research Design**

I conducted this study using a predictive correlational design, which measures the relationship between two or more variables at a time on an interval scale (Warner, 2013). A multiple regression was used to analyze the effect of the criterion variable (students' self-esteem) based on the multiple predictor variables of gender and perceptions of teachers' behaviors; Gall, Gall, & Borg, 2007). The purpose of this multiple regression was to determine if a relationship existed between the criterion variable, self-esteem, and the predictor variables of students' perceptions of teachers' controlling behaviors, students' perceptions of teachers' supportive behaviors, and gender. The purpose was not to determine if one variable caused the other.

### **Research Question and Hypothesis**

RQ: How accurately can students' self-esteem be predicted by the linear combination of gender and the perceived controlling and supportive behaviors of teachers?

*H*<sub>01</sub>: There is no significant predictive relationship between the perceived criterion variable of students' self-esteem and the linear combination of Predictor 1 variable of gender, Predictor 2 variable of students' perceptions of teachers' controlling behaviors, and Predictor 3 variable of students' perceptions of teachers' supportive behaviors.

### **Participants and Setting**

I conducted this study in 2017 at three middle schools from one school district in northwestern Georgia. The target population comprised all high-ability grouped math students at the schools. I selected the participants using a convenience sample of Grade 6 high-ability grouped middle school math students from the three middle schools. High-ability math classes have the top 10% of the total math population for each grade level. The selection criteria required the schools to have implemented high-ability grouping for Grade 6 math students, and each group has to have male and female students. All Grade 6 students currently enrolled in high-achieving math classes were eligible to participate. Each of the three schools has between 200 and 250 Grade 6 students. Within each school, I selected students from two high-ability Grade 6 math classrooms. All three schools have two high-ability Grade 6 math groups, with approximately 30 students in each group, giving a total target population of 180 students.

For this study, the total number of participants was 127, which exceeded the minimum number needed for a medium effect size. According to Gall et al. (2007), multiple regression with one criterion variable and three criterion variables requires a minimum of 66 participants for a medium effect size with a statistical power of 0.7 at the 0.05 alpha level. Students in the sample were required to meet the same guidelines as other high-ability students in the entire state of Georgia. Many of the high-ability guidelines established in Georgia also are used throughout the United States, making these three schools ideal for this study.

The setting for this study was Grade 6 high-ability math classrooms in one county in northwestern Georgia. According to the Georgia Department of Education (GADoE, 2014), students in Georgia qualify for placement in high-ability math groups by completing one of two options. In Option A, students must have a qualifying score in three of the following four categories: Mental Ability, Achievement, Creativity, and Motivation. Norms for the state are established by individual school districts. For the Mental Ability category, students in Kindergarten to Grade 2 must achieve a composite score at the 99<sup>th</sup> percentile on a nationally age-normed mental ability test. For students in Grades 3 to 12, this score drops to any score in the 96<sup>th</sup> percentile or better. In the Achievement category, students in all grades must score at the 90<sup>th</sup> percentile or better on the Total Reading, Total Math, or Complete Battery on the Iowa Test of Basic Skills and the CoGat nationally normed achievement test.

In Option B, students must complete three of four categories to qualify. Categories of Creativity and Motivation are added to the Mental Ability and Achievement categories from Option A. In the Creativity category, student in Kindergarten to Grade 12 must score at the 90<sup>th</sup> percentile on a nationally normed creativity test or at the 90<sup>th</sup> percentile or better on a 1-100 scale when evaluated by a panel of three or more qualified evaluators. For the Motivation category, students in Kindergarten to Grade 12 must score at the 90<sup>th</sup> percentile or better on a 1-100 Motivation scale when evaluated by three or more qualified evaluators. Students in Grades 6 to 12 must also maintain a 2-year 3.5 grade point average on a 4.0 scale in math, English/language arts, social studies, science, and a full year of world languages. Completion of any three of the four categories is accepted (GADoE, 2014).

The sample comprised 63 male and 64 female students from the six high-ability Grade 6 math classes at the three schools. Of the total sample of 127 students, 18 were 10 years old, 95

were 11 years old, and 14 were 12 years old. Ethnic composition of the sample was 64% European American, 18% African American, 13 % Hispanic American, 3% Asian American, and 2% Other.

## **Instrumentation**

### **Rosenberg's Self-Esteem Scale**

I used the RSES (Rosenberg, 1965) to assess the criterion variable of self-esteem because it is the most widely used self-esteem scale in educational research (Alessandri, Vecchione, Eisenberg, & Laguna, 2015; Kususanto et al., 2010; Robins, Hendin, & Trzesniewski, 2001; Robinson, Shaver, & Wrightsman, 1991). The instrument takes less than 10 minutes to administer, and the scores can be graded, rechecked, and scored quickly. The simple and easy-to-read items made it suitable for this study (Kususanto et al., 2010). The RSES has received more empirical validation than any other scale used to measure self-esteem (Robins et al., 2001). The original RSES was developed by Rosenberg in 1965 to measure the self-esteem of 5,024 high school juniors and seniors in New York State. Although the scale was originally designed for use with adolescents, it has become the single most widely used self-esteem scale for young adults and elderly individuals. I chose this scale based on its ease of use, administration, scoring, and ability to be easily interpreted (Robins et al., 1991).

The RSES, by holding items that require positive or negative responses, discloses two progressive constructs (Owens, 1993). Individuals completing the scale can perform high or low in one category, such as Positive Evaluation of the Individual, while recording a different high or low score in another category, such as Feelings Among Their Peers (Supple et al., 2013). In a factor structure study of the RSES, findings suggest that responses to the five positive-response items and the five negative-response items are similar when controlling for age and gender.

Cultural differences among ethnic groups, however, are more dominant among minorities in relation to the five negative-response items (Supple et al., 2013). These positive or negative associations with ethnicity might facilitate the study of other areas of students' development in relation to culture.

Cronbach's alphas for the instrument are consistently within the range of 0.72 and 0.88. Zeng, Hu, and Ma (2016) recently studied 624 Chinese adolescents attending four middle schools in Guangdong, China, to explore the role of loneliness in the relationship between self-esteem and pathological Internet use. Zeng et al. used three different measures, the RSES, the UCLA Loneliness Scale Version 3, and the Young's Internet Addiction Test. They reported a Cronbach's alpha of 0.78.

Analysis of the psychometric properties of the RSES was conducted to determine the dimensionality and appropriateness of the scale in relation to self-esteem (Tagarro & Galinha, 2016). The researchers studied 588 Portuguese college students ranging in age from 17 to 57 years. In the study, the five inverse-response items (Questions 2, 5, 6, 8, and 9) were analyzed, followed by analysis of the five positive response items (Questions 1, 3, 4, 7, and 10). Responses were divided between two subgroups based on gender, with a Cronbach's alpha for both groups providing an internal consistency of 0.88. Factor analysis provided good internal consistency, 0.88, needed to validate the one dimensionality of the RSES.

The RSES is a 10-item questionnaire with responses on a 4-point Likert scale that range from 1 (*strongly disagree*) to 4 (*strongly agree*). Scores on the RSES range from 10 to 40. Questions 1, 3, 4, 7, and 10 were designed to receive points based on the answers provided. For example, a response of *strongly disagree* receives 1 point, *disagree* 2 points, *agree* 3 points, and *strongly agree* 4 points. Questions 2, 5, 6, 8, and 9 were designed to elicit negative responses

and are scored in reverse order. When combined, all 10 questions provide a raw scale score between 10 and 40. Scores approaching 10 represent lower self-esteem; scores approaching 40 represent higher self-esteem. No written permission is needed to administer the RSES as long as the scale is referenced in any future studies and is cited accordingly (Rosenberg, 1989).

### **Perceptions of Teachers' Behaviors as Controlling or Supportive**

The SPTCBS and the SPTSBS are two scales designed by Kususanto in 2010 to identify differentiated teachers' behaviors observed by high-ability students in the classroom. Both scales were designed for use with one another. Controlling behaviors place an emphasis on discipline, whereas supportive behaviors place more emphasis on academics.

The SPTCBS is a 10-question instrument created and first used in 2010 (Kususanto et al.). The instrument was created based on the findings of Good (1981) and Oakes (1985), who established the teachers tended to control the behavior of students with weaker academic abilities while supporting students considered to have stronger academic performance. The questionnaire is based on a 4-point Likert scale of responses that range from 1 (*strongly disagree*) to 4 (*strongly agree*). The higher the points total, the higher is the level of agreement that teachers manifest controlling behaviors. A score of 10 represents students' feelings that teachers place little, if any, emphasis on controlling behaviors. A score approaching 40 represents strong agreement with teachers' manifestation of controlling behavior. Analysis of scale scores were created based on the research conducted by Kususanto et al. (2010). The SPTCBS was designed to be completed comfortably in less than 10 minutes.

Internal consistency of the controlling scale rendered a Cronbach's alpha of 0.77 when administered by Kususanto et al., (2010). A second study of students' perceptions of teachers' controlling behaviors was conducted by Ismail and Majeed (2011) using both the SPTCBS and

the SPTSBS. Previous findings of Kususanto et al., which deemed that students' perceptions of teachers' behaviors did have an impact on academic performance among high-ability grouped students, provided the framework for Ismail and Majeed's research. Ismail and Majeed reported a Cronbach's alpha of 0.81 on the SPTCBS. In a third study, Kususanto, Fui, and Lan (2012) reported a Cronbach's alpha for that SPTCBS of 0.77.

### **Students' Perceptions of Teachers' Supportive Behavior Scale**

The SPTSBS is a 10-question instrument designed by Kususanto et al. (2010) to quantify students' perceptions of teachers' behaviors based on the support received in class. The instrument has a 4-point Likert scale of responses that range from 1 (*strongly disagree*) to 4 (*strongly agree*). The total score can range from 10 to 40. The closer the score is to 40, the higher is the perception that teachers are demonstrating supportive behavior toward academic achievement rather than controlling behavior to deal with discipline issues. The closer the score is to 10, the lower are students' perceptions of teachers' behaviors as being supportive. The SPTSBS was designed to be completed comfortably in less than 10 minutes. Cronbach's alpha for the supportive scale reported a reliability of 0.76 (Kususanto et al., 2010).

A second study of students' perceptions of teachers' controlling behaviors was conducted by Ismail and Majeed (2011). Reliability of the SPTSBS was reported with a Cronbach's alpha of 0.78. In a third study by Kususanto et al. (2012), which was an investigation of 130 teachers and 300 secondary science students in Indonesia, reliability for the SPTSBS was measured using a Cronbach's alpha of 0.76. As mentioned earlier, the SPTCBS and the SPTSBS were created for use in conjunction with one another.

Each of the three instruments recorded a score between 10 and 40. For the RSES, numbers approaching 10 represented lower self-esteem, whereas numbers closer to 40



represented higher self-esteem. For the SPTSBS, numbers approaching 10 represented students' perceptions of teachers' behaviors as less supportive, whereas numbers approaching 40 represented students' perceptions of teachers' supportive behaviors as extremely significant. The SPTCBS also was represented with scores between 10 and 40. Scores approaching 10 represented lower levels of students' perceptions of teachers' controlling behaviors, whereas scores approaching 40 showed a stronger emphasis of students' perceptions of teachers' controlling behaviors.

### **Procedures**

I received approval from Liberty University's Institutional Review Board (IRB) before making any contact with any of the stakeholders in this study (see Appendix A). Once IRB approval was received, I contacted the district (see Appendix B). Once I received approval from the superintendent, I sought permission through an in-person meeting with the principals of the three schools (see Appendix C).

Parents of the participants received a consent letter and a student assent letter simultaneously. The parental consent letter explained the study, the experimental procedure used throughout the study, and the conditions of the students' participation (see Appendix D). Student permission was obtained through a provided student assent form (see Appendix E). The consent form and student assent form were sent home together with the students for the parents to read and sign. Because the student generally receive multiple papers each week, I used bright orange paper for both forms to distinguish them from other forms. After 1 week, new parental consent forms and student assent forms were sent home only to parents who had not yet returned the forms. One week later, I made one final attempt to collect forms from parents of students who

had not yet returned them. Student assent forms followed the same protocol, with a multiple wave of forms sent home over the same 2-week period.

The high-ability math teachers at each school collected the parental consent and student assent letters in August 2018. Once parental and student approval forms were collected, I informed the student participants through their teachers of their right to withdraw from the study at any time without penalty. I reminded the Grade 6 participants that there was no pressure on them to join or stay the study. I told them that their teachers would not be angry with them if they chose to either not participate or leave the study early. Students participating in the study met at central locations in their respective schools during a 30-minute advisement period that happens biweekly at each school. Students not participating in the study remained in their homerooms and performed regular advisement activities as scheduled.

Each of the three scales (RSES, SPTSBS, SPTCBS) was presented during one 30-minute scheduled advisement session in each school. The three scales were administered at the beginning of the academic school year, which is August and September for these schools. The three schools provided each student with a personal laptop. Normal completion time for each instrument is less than 10 minutes; however, 10 minutes was provided to accommodate all students. They were asked to log on to their computers and then proceed to the SurveyMonkey website. From there, students completed the first instrument, the RSES.

Students were given the full 10 minutes to finish each instrument before being allowed to move to the next instrument. This protocol gave me the chance to explain each instrument to avoid confusion between the scales. Students who finished early were allowed to open a new window and use the website Cool Math until the 10-minute time period expired. All students returned to the SurveyMonkey website at the end of 10 minutes to complete the second

instrument, the SPTCBS. Again, students who finished early were allowed to access the Cool Math website. After 10 minutes, students reentered the SurveyMonkey website to complete the final instrument, the SPTSBS. Upon completion of the instrument, students were allowed to enter the Cool Math website until the final 10 minutes was reached. Students were given a total of 30 minutes to complete the instruments. The next scale was not administered until the previous one has been completed by all students. As the test administrator, I maintained the confidentiality of the responses on each instrument.

Results of all three instruments were and remain stored on my computer. I am the only person who has access to the instrument results. Each instrument was completed on consecutive Thursdays over a period of 3 weeks. School 1 completed the three instruments on the first Thursday, School 2 completed the three instruments on the second Thursday, and School 3 completed the three instruments on the third Thursday of the month. Thursday was chosen for each school to coincide with each school's advisement schedule.

No names of any students were mentioned in the study. Students were recognized by the gender selected on SurveyMonkey and an individual ID number provided by each school. Only I used the information collected from the surveys. Each survey was listed individually on SurveyMonkey, and students did not have access to the next survey until all students had finished the current survey. No other outside sources will have access to the collected information. It will not be shared with parents, principals, or teachers, regardless of their individual efforts in the completion or gathering of information. Results of each scale were scored and recorded on two of my external drives. Both drives were locked in separate locations after the data were delivered. No one other than I has access to the scores.

## Data Analysis

This predictive, correlational study used multiple regression to determine the correlation between the criterion variable, self-esteem, and the predictor variables of gender, controlling behaviors and supportive behaviors. Multiple regression was the most appropriate for this study because it is used to determine the correlation between one criterion variable and two or more predictor variables (Gall et al., 2007). Multiple regression was beneficial to this study because it could be used to analyze categorical, interval, or ordinal data (Gall et al., 2007). Multiple regression was appropriate because the criterion variable, self-esteem, was measured on a continuous scale, as were the predictor variables of controlling and supportive behaviors. Gender was measured as a categorical variable. Multiple regression was used to indicate the degree and statistical significance of the relationship between the variables (Gall et al., 2007).

Multiple regression was chosen because as it is one of the most widely used statistical analysis techniques in education. Scores on the  $y$  variable were linearly related to scores on the  $x$  variable. Each  $x$  and  $y$  variable had a bivariate normal distribution free of outliers. I assumed that the  $y$  values would have approximately homogeneous variance across  $x$  and that  $x$  values would have approximately homogeneous values across the  $y$  variables (Warner, 2013). Tests of assumptions of bivariate outliers were administered through multiple scatterplots between all pairs of independent variables. Scatterplots between each predictor and criterion variable were constructed to examine for extreme bivariate outliers. Scatterplots between each pair of predictor variables, as well as between the predictor and criterion variable, were constructed to test the assumption of multivariate normal distribution to look for the cigar shape. If one predictor variable is highly correlated with another predictor variable, a variance inflation factor (VIF) greater than 10, the assumption of nonmulticollinearity has been violated. I used SPSS

v.25 to test the assumptions for multiple regression. Test of significance was conducted using a significance level of  $\alpha = 0.05$ .

### **Data Screening**

I checked each data set for accuracy and identify any data entry errors. A research assistant helped me by examining the data for possible data entry errors. Multiple box and whisker plots were used to analyze how the data were skewed and to check for possible outliers. Standard deviation was used to describe the variability of the scores (Warner, 2013). Durbin-Watson was used to assure independence of observations. Multiple scatterplots were used to look for extreme bivariate outliers and show linearity between the criterion variable and each of the predictor variables (Laerd Statistics, 2015). Scatterplots were used to check for homostasticity between the dependent variable and all independent variables. Multicollinearity was measured to ensure that the predictor variables were not severely correlated with other predictor variables by examining the VIFs (Laerd Statistics, 2015). Finally, a histogram was used to ensure that the residuals were approximately normally distributed.

I first computed the correlation between the criterion variable, self-esteem, and the predictor variables of gender, controlling behaviors, and supportive behaviors to find the best single predictor variable. Once the best predictor was chosen, the second best predictor was chosen based on how much better it made the prediction of the first (Laerd Statistics, 2015). Correlation between the first and second predictor variable, or collinearity, should be small so that the second variable does not explain the same variance as the first. The second predictor should correlate as much as possible with the criterion variable while correlating as little as possible with the first predictor variable. The third predictor variable should be determined based on how well it improves the first two predictor variables (Laerd Statistics, 2015).

The computation of the correlation produced the multiple correlation coefficient ( $R$ ), which I used to measure the magnitude of the criterion variable on one or more predictor variables. Values for  $R$  can range from 0.00 to 1.00. As more variables are included, the value of  $R$  will increase, or approach 1.00 (Gall et al., 2007). The coefficient of determination, or  $R^2$ , was used to show the amount of variance in the criterion variable that could be explained by a predictor variable. Multiple scatterplots were used to show a linear relationship between the criterion variable of self-esteem and each of the predictor variables of gender, controlling behaviors, and supportive behaviors (Gall et al., 2007).

## CHAPTER FOUR: FINDINGS

### Overview

The purpose of this quantitative, correlational study was to identify the relationship between the criterion variable of the self-reported self-esteem levels of high-ability grouped students (i.e., those within the upper 10% of classmates) based on the multiple predictor variables of gender and students' perceptions of teachers' behaviors as controlling or supportive. Chapter 4 includes a detailed description of the sample, results of the data analysis and screening, a detailed report of the results, and a summarization of the results answering the RQ.

### Research Question and Hypothesis

RQ: How accurately can students' self-esteem be predicted by the linear combination of gender and the perceived controlling and supportive behavior of teachers?

$H_{01}$ : There is no significant predictive relationship between the perceived criterion variable of students' self-esteem and the linear combination of Predictor 1 variable of gender, Predictor 2 variable of students' perceptions of teachers' controlling behaviors, and Predictor 3 variable of students' perceptions of teachers' supportive behaviors.

### Descriptive Statistics

#### Participants

Initially, the total sample comprised 182 high-ability Grade 6 math students at three middle schools located in northwestern Georgia. Fifty-three parents did not return the parental consent form allowing their children to participate in the study. In addition, two students did not answer all of the items on each of the three surveys, so their answers were removed from the study. The final sample was made up of 127 high-ability math students (64 female and 63 male participants). Answers to all three surveys were completed using the SurveyMonkey website.

The collected data were the responses to the RSES, SPTCBS, and SPTSBS. The mean and standard deviation for each predictor variable of students' perceptions of teachers' controlling behaviors, students' perceptions of teachers' supportive behaviors, and gender, along with the criterion variable of self-esteem are displayed in Table 1.

Table 1

*Means and Standard Deviations*

Variable	<i>M</i>	<i>SD</i>	<i>N</i>
Self-esteem	31.91	4.566	127
Gender	.49	.502	127
Supportive	26.15	4.165	127
Controlling	27.24	3.762	127

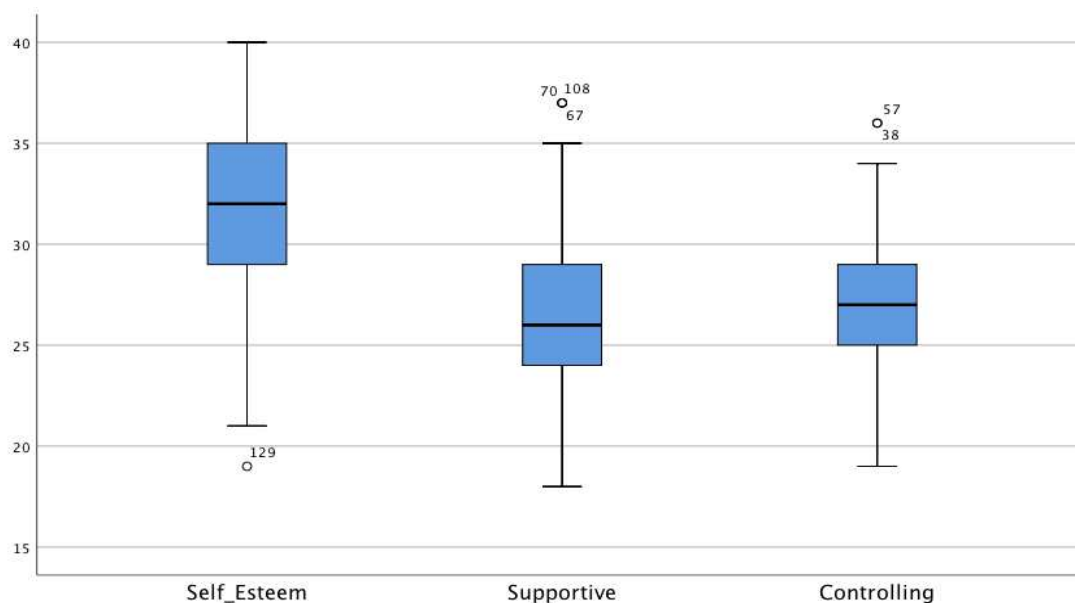
## Results

### Data Screening

Prior to data analysis, SPSS v.25 was conducted on the predictor variables (students' perceptions of teachers' controlling behaviors, students' perceptions of teachers' supportive behaviors, and gender) and the criterion variable (self-esteem) to detect outliers. A casewise diagnostics table of standardized residuals in SPSS v.25 was used to highlight specific participants with a residual greater than  $\pm 3$  standard deviations to identify possible outliers. SPSS results did not provide a casewise diagnostics table, indicating that there were no individual outliers in the data. Studentized deleted residuals, when sorted in descending order, also showed individual case numbers ranging between +1.89354 and -2.81890, with no values above or below  $\pm 3$  standard deviations.



Box and whisker plots were used to identify outliers on the criterion and predictor variables (see Figure 1). Two outliers were identified on the predictor variable controlling behavior at Points 38 and 57. Standardized  $z$  scores for this variable were produced and found both points within a normal range (between  $+3.30$  and  $-3.30$ ). The lowest  $z$  score was  $-2.22$ , and the highest  $z$  score was  $2.47$ . One outlier was identified on the criterion variable of self-esteem at Point 129. Standardized  $z$  scores for the variable of self-esteem were produced, and  $z$  scores were reported, with a low score of  $-2.83$  and a high score of  $1.77$ . Three outliers were identified on the predictor variable of supportive behaviors at Points 67, 70, and 108. Standardized  $z$  scores for supportive behaviors were produced. All three points were found within the normal range, with a low  $z$  score of  $-2.31$  and a high  $z$  score of  $2.73$ .



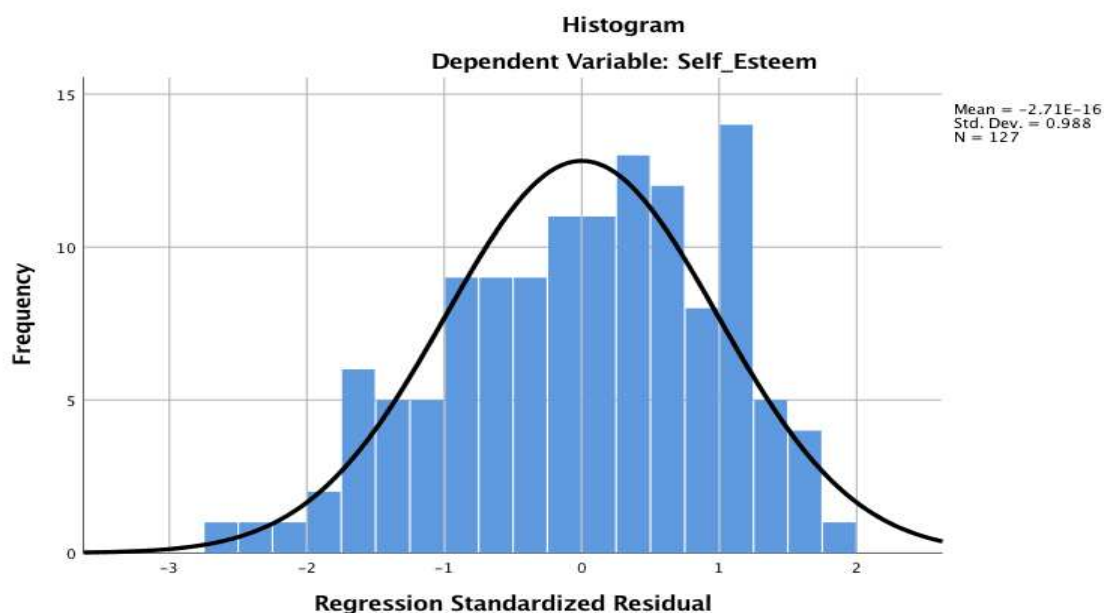
*Figure 1.* Box and whisker plots of criterion and predictor variables.

*Note.* This figure shows outliers at Point 129 for self-esteem; Points 67, 70, and 108 for supportive behaviors; and Points 38 and 57 for controlling behaviors.

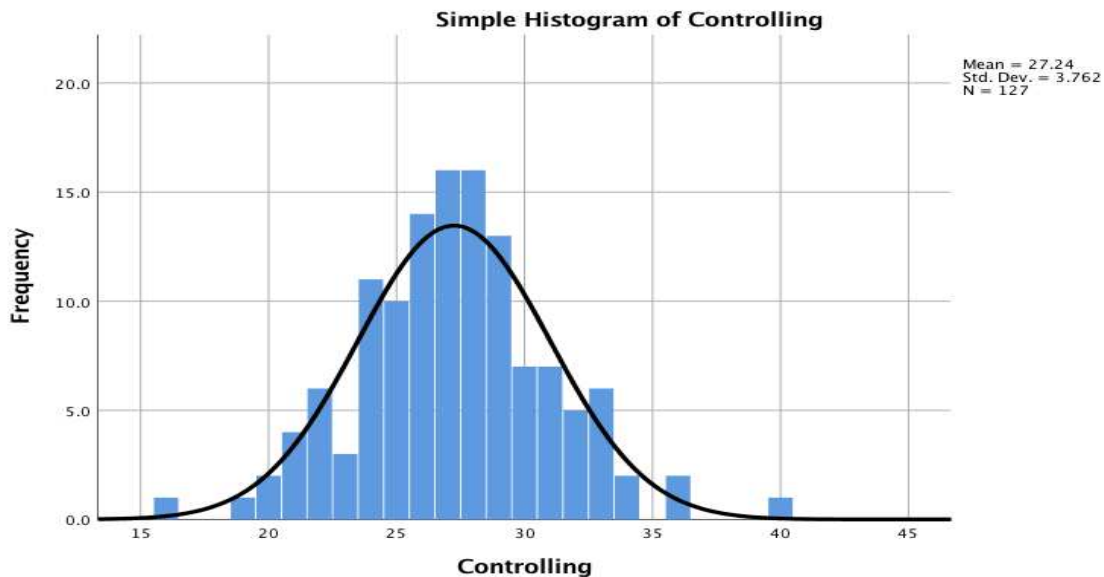
Leverage points were evaluated to determine if any one point or specific participant was disproportionately influential on the data (Laerd Statistics, 2015). Leverage values less than 0.2

are considered safe, 0.2 to 0.5 are considered threatening, and above 0.5 are considered hazardous to the data and are likely to be removed. Analysis of the leverage data set points, when placed in descending order, indicated that all participants' scores ranged between .10617 and .00771. Each participant's leverage score fell below 0.2, the point considered safe for this assumption.

Cook's Distance was used to measure the influence of potential predictor points. Values above 1 indicate individual participant scores that could be highly influential to the data. Results from SPSS v.25 indicated values ranging from .10544 to .00000, well below the score of 1 needed to represent highly influential individual participant scores. To determine the statistical significance the assumption of normality of the residuals was verified through histograms and P-P (probability-probability) plots. Standardized residuals were approximately normally distributed (see Figures 2-5).

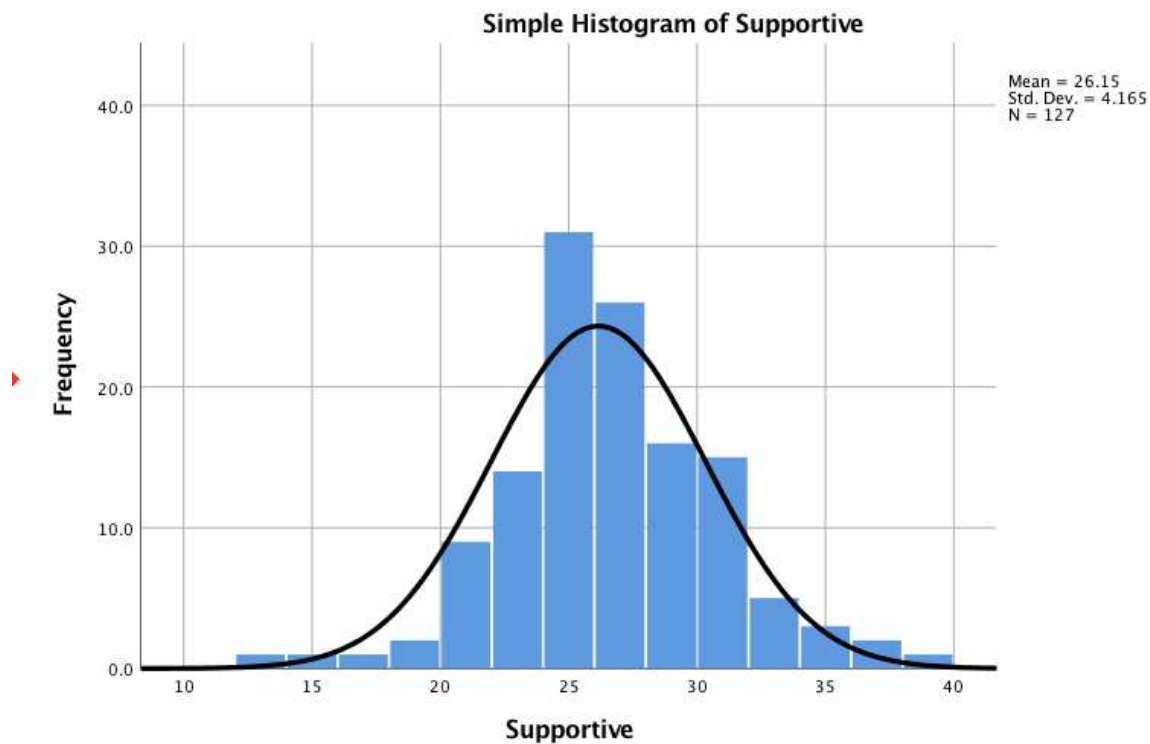


*Figure 2.* An approximately normal distribution of the standardized residuals.  
*Note.* A mean score of 1.87 and a standard deviation of 0.980 are presented by the histogram.



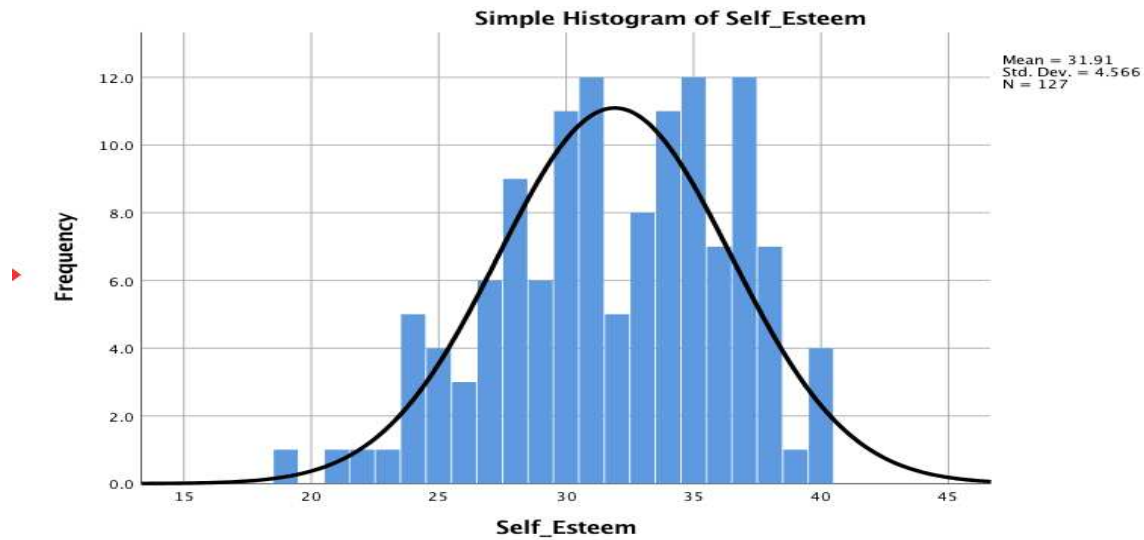
*Figure 3.* An approximately normal distribution of the predictor variable of controlling behaviors.

*Note.* A mean score of 27.24 and a standard deviation of 3.762 are presented by the histogram.



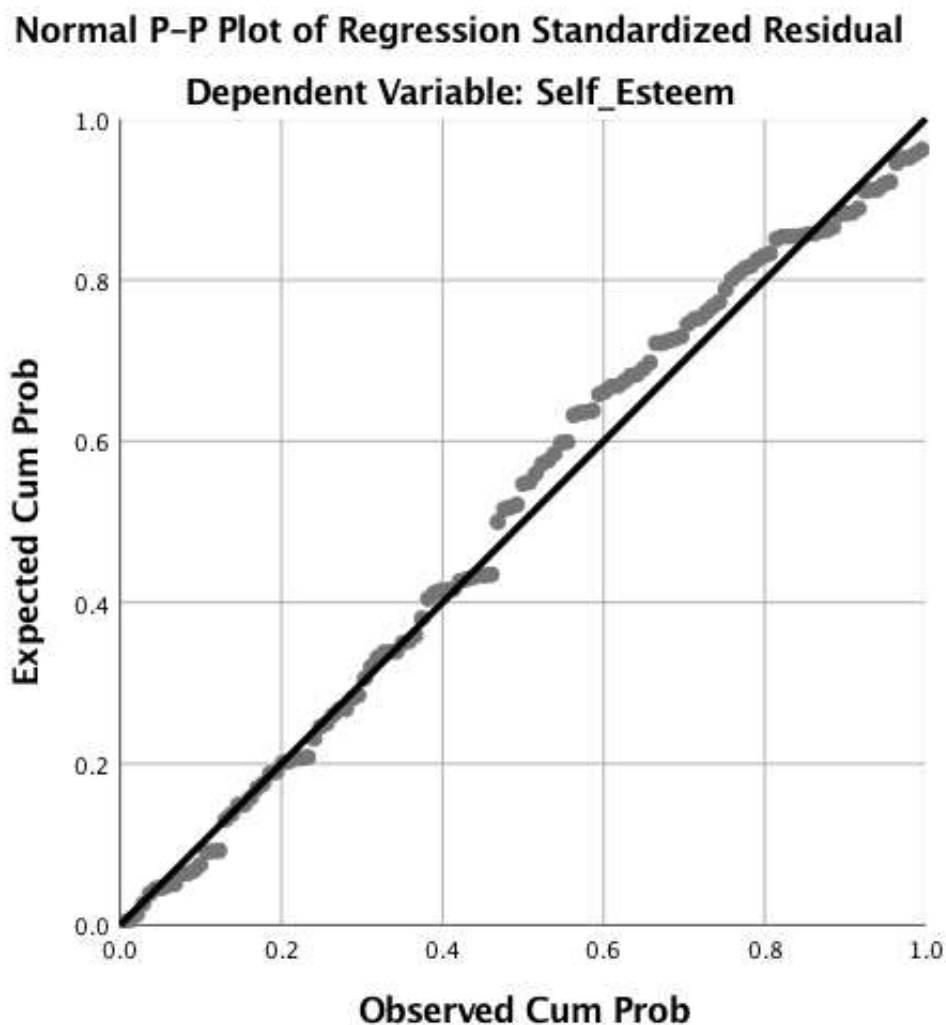
*Figure 4.* An approximately normal distribution of the predictor variable of supportive behaviors.

*Note.* A mean score of 26.15 and a standard deviation of 4.165 are presented by the histogram.



*Figure 5.* An approximately normal distribution of the criterion variable self-esteem.  
*Note.* A mean score of 31.91 and a standard deviation of 4.566 are presented by the histogram.

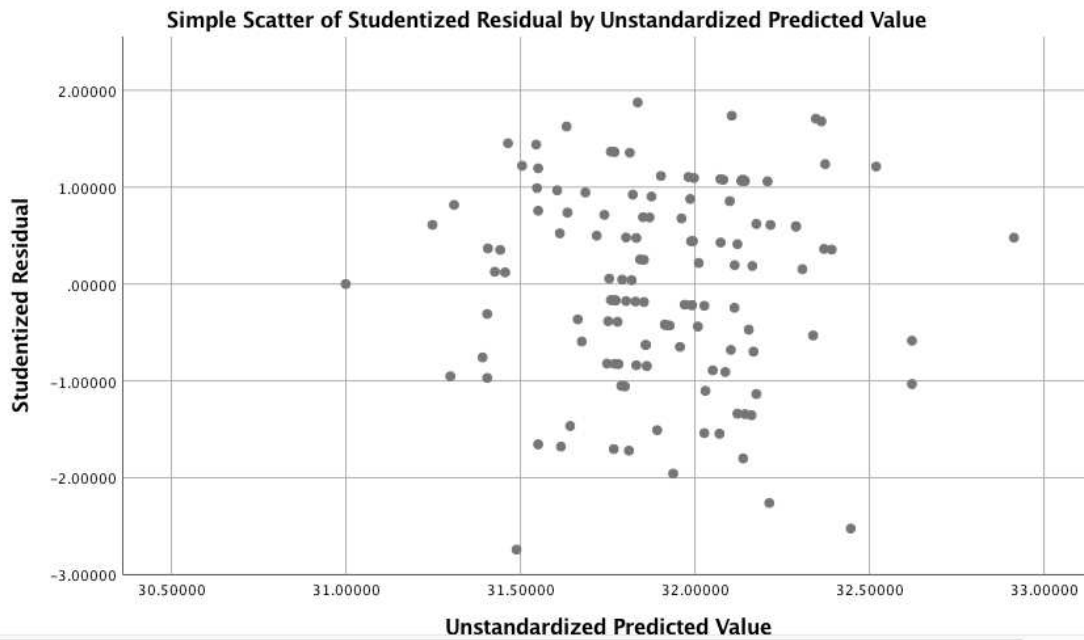
I created a P-P plot in SPSS to compare how well the collected data fit with the theoretical distribution of the data. Figure 5 represents a normal distribution of the residuals (Laerd Statistics, 2015). The x axis represents results of the observed probability data, and the y axis represent the expected probability for the data. Points along the diagonal line are close enough to indicate normal distribution of the residuals, meaning that the assumption of normality was not violated.



*Figure 6.* P-P plot of observed probability and expected probability.

### **Assumption Testing**

Multiple linear regression analysis requires that assumptions of linearity between the dependent variable, self-esteem, and each of the independent variables of controlling behaviors, supportive behaviors, and gender be met. Assumptions of linearity were first tested to establish a linear relationship between the criterion variable, self-esteem, and a combination of the predictor variables. A linear relationship between the criterion variable and the collective predictor variables created the linear relationship shown in Figure 7.



*Figure 7.* Scatterplot indicating a moderately strong and positive linear relationship between the criterion variable and combined predictor variables.

*Note.* Homoscedasticity, the third multiple linear regression assumption, was observed, assuring that the assumption of homogeneity of variance had not been violated. The points on the plot were spread randomly and indicated no pattern (Warner, 2013).

Linearity between the criterion variable and each predictor variable was tested through partial regression scatterplots. Results of the three scatterplots indicated linearity between the criterion variable and each predictor variable independently (see Figures 8-10).

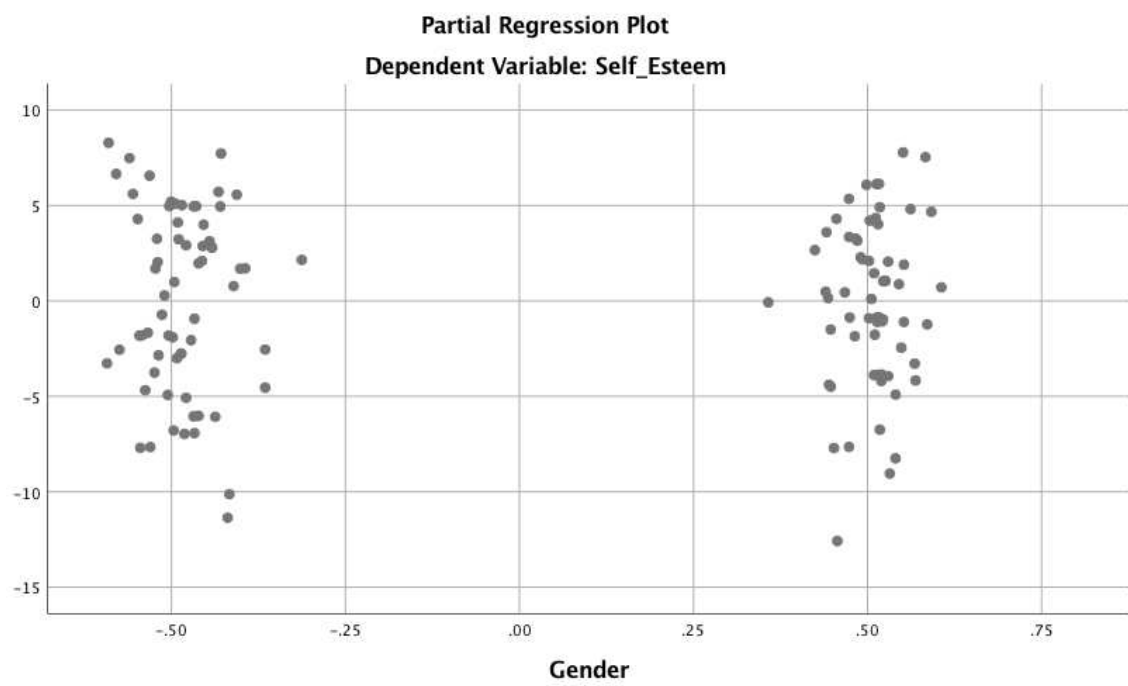


Figure 8. The left side of the scatterplot shows linearity between female students and self-esteem. Linearity between male students and self-esteem is shown on the right side.

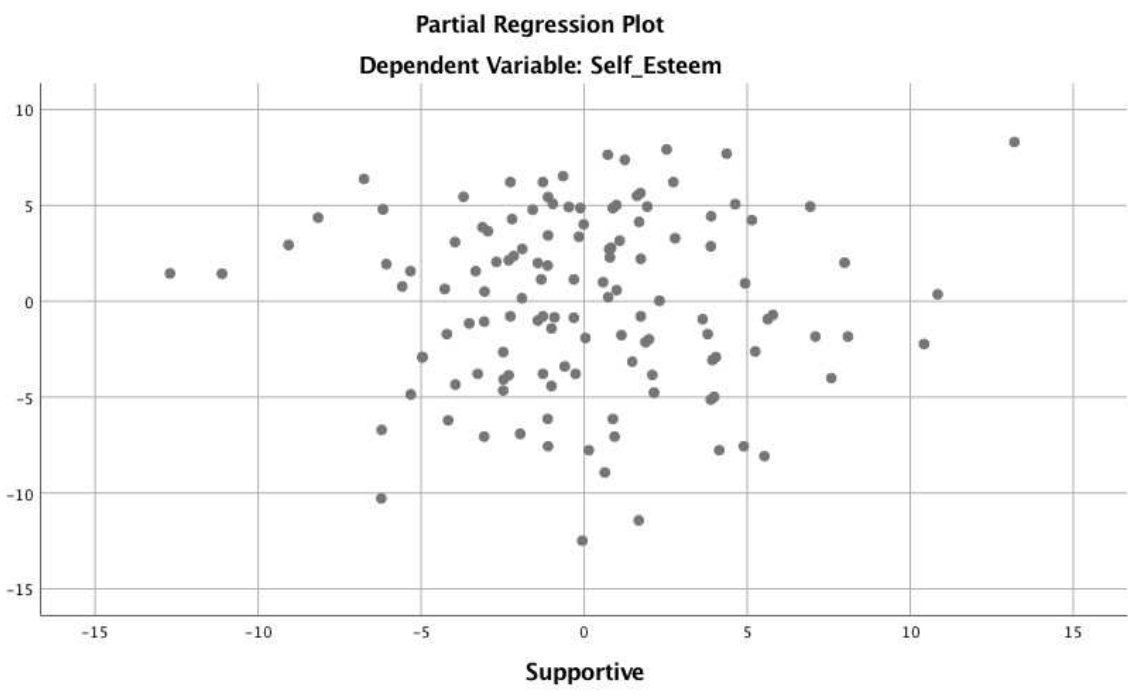
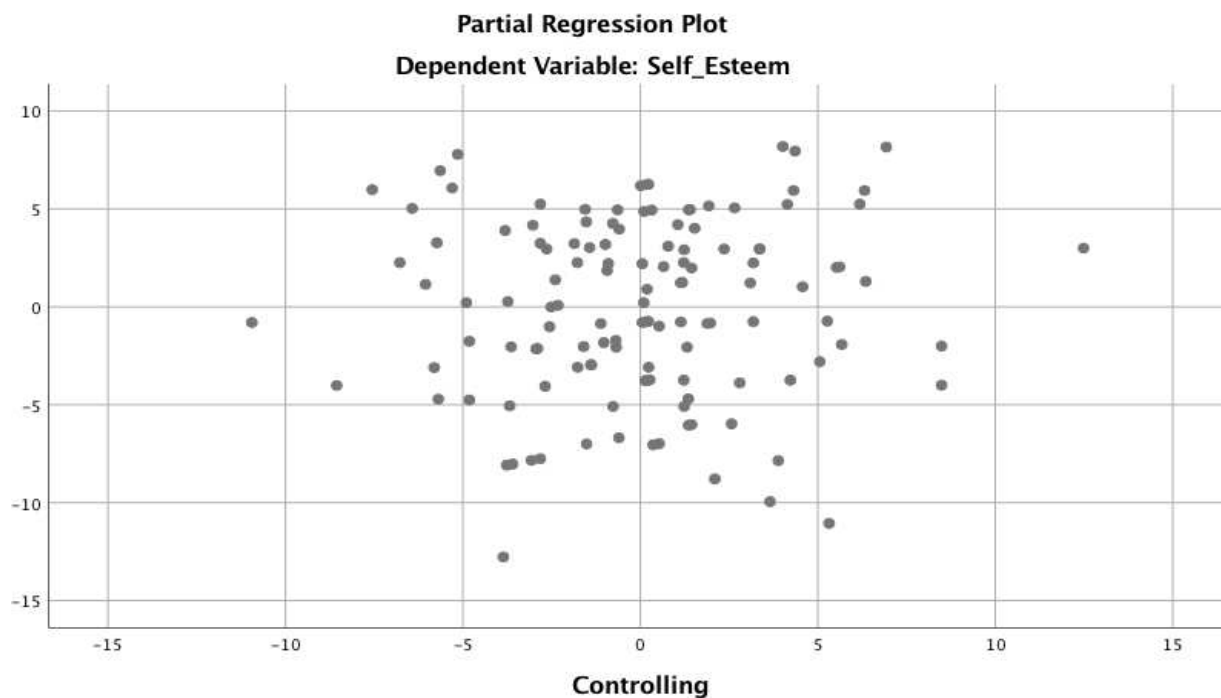


Figure 9. Scatterplot showing linearity between the criterion variable, self-esteem, and the predictor variable, students' perceptions of teachers' supportive behaviors.



*Figure 10.* Scatterplot showing a linear relationship between the criterion variable, self-esteem, and the predictor variable, students' perceptions of teachers' controlling behaviors.

The second assumption of multiple linear regression required an inspection of correlation coefficients and tolerance/VIF values to ensure that each independent variable was not highly correlated to another one. Results of the examination of correlations indicated that none of the predictor variables had a correlation above 0.7 (see Table 2). Correlations of predictor variables above 0.7 would have indicated that two predictor variables were highly correlated, which could have led to difficulty determining which predictor variable contributed the most to the variance (Laerd Statistics, 2015).



Table 2

*Correlation of Predictor and Criterion Variables*

	Variable	Self-esteem	Gender	Supportive	Controlling
Pearson correlation	Self-esteem	1.000	-0.28	.012	.063
	Gender	-.028	1.000	.026	-.097
	Supportive	.012	.026	1.000	.044
	Controlling	.063	-.097	.044	1.000
Sig. (1-tailed)	Self-esteem		.376	.477	.242
	Gender	.376		.388	.138
	Supportive	.477	.388		.311
	Controlling	.242	.138	.311	
<i>N</i>	Self-esteem	127	127	127	127
	Gender	127	127	127	127
	Supportive	127	127	127	127
	Controlling	127	127	127	127

Tolerance, the amount of variance that is not predictable from another predictor variable already included in the multiple regression equation, was measured to ensure that no two variables were highly correlated with each other (Warner, 2013). A minimum value of 0 indicates that the variance provided by the first variable cannot be improved by the variance of the other variables. Values approaching 1 indicate that each predictor variable is uncorrelated to other predictor variables and will provide new information not already explained by previous

predictor variables. The tolerance/VIFs in Table 3 show the tolerance level for each predictor variable.

Table 3

*Tolerance/VIFs*

Variables	Tolerance	VIF
Predictor		
Gender	.990	1.010
Supportive	.997	1.003
Controlling	.988	1.012

Collinearity tolerance for each predictor variable ranged between .988 and .990, values much greater than 0.1. Values above 0.1 indicate, with a high level of confidence, that there are no issues with collinearity (Laerd Statistics, 2015).

### **Null Hypothesis**

$H_{01}$ : There is no significant predictive relationship between the perceived criterion variable of students' self-esteem and the linear combination of Predictor 1 variable of gender, Predictor 2 variable of students' perceptions of teachers' controlling behaviors, and Predictor 3 variable of students' perceptions of teachers' supportive behaviors.

Results of the model summary showed  $R = .251$ ,  $R^2 = .063$ , adjusted  $R^2 = .040$ , indicating that all three predictor variables accounted for 4.0% of the variability of the dependent variable. Variability under .2, or 20.0%, corresponds to a small effect size, according to Cohen (as cited in Warner, 2013). I conducted an ANOVA to determine a possible relationship between all predictor variables and the criterion variable of self-esteem. Using all three

predictors, results of the multiple linear regression was statistically significant,  $F(3, 123) = 2.753, p < .05$  (see Table 4). Therefore, the null hypothesis was rejected.

A partial correlation was conducted to determine the relationship between self-esteem and students' perceptions of teachers' supportive behaviors while controlling for students' perceptions of teachers' controlling behaviors. There was a moderate and positive correlation between the criterion variable of self-esteem ( $32.02 \pm 4.47$ ) and the predictor variable of supportive behaviors ( $27.57 \pm 4.33$ ) when controlling for the predictor variables of controlling behaviors ( $26.86 \pm 3.77$ ) and gender ( $.49 \pm .50$ ), which was statistically significant,  $r(124) = .246, N = 127, p = .005$ . Zero-order correlations, however, displayed a statistically significant but moderate positive correlation between self-esteem and supportive behaviors, where  $r(125) = .245, N = 127, p = .006$ , indicating that controlling behaviors and gender had little influence in controlling the relationship between self-esteem and supportive behaviors. Partial correlations between self-esteem and controlling behaviors and self-esteem and gender did not yield significance levels at  $p < .05$ .

Table 4

*One-Way ANOVA*

Model	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	Sig.
Regression	158.288	3	52.763	2.753	.046
Residual	2357.680	123	19.168		
Total	2515.969	126			

- a. Dependent Variable: Self-esteem
- b. Predictors: (Constant), Controlling, Supportive, Gender

## CHAPTER FIVE: CONCLUSIONS

### Overview

The correlation between the criterion variable of self-esteem and the predictor variables of gender and students' perceptions of teachers' controlling or supportive behaviors was examined in this study. Results of the study and their association with previous literature are addressed. Bandura's (1971) SLT is explained. Implications, limitations, and recommendations for future studies are also addressed.

### Discussion

The purpose of this predictive, correlational study was to examine male and female high-ability grouped students' self-esteem to measure the relationship between their self-esteem and their perceptions of teachers' behaviors as controlling or supportive, and gender. The SPTCBS and the SPTSBS, as well as the RSES, guided the data collection. None of these instruments had been administered previously to adolescents in the United States. Correlations among the three instruments were discussed in this study.

One RQ and its hypothesis guided the study:

RQ: How accurately can students' self-esteem be predicted by the linear combination of gender and the perceived controlling and supportive behavior of teachers?

$H_{01}$ : There is no significant predictive relationship between the perceived criterion variable of students' self-esteem and the linear combination of Predictor 1 variable of gender, Predictor 2 variable of students' perceptions of teachers' controlling behaviors, and Predictor 3 variable of students' perceptions of teachers' supportive behaviors.

Research has identified the impact of students' self-esteem on learning (Chohan, 2013; Hosogi, 2012). High self-esteem has been associated with higher academic attainment and more

success in the workforce (Imran, 2013). Likewise, students with low self-esteem often are less likely to responsive to feedback from authority figures (Kuster et al., 2013). This study sought to add to the literature by examining the possible relationship between self-esteem and students' perceptions of teachers' behaviors (students' perceptions of teachers' controlling behaviors, students' perceptions of teachers' supportive behaviors) and gender.

For this study, self-esteem was defined as the evaluative aspect of the self-concept that corresponds to an overall view of the self as worthy or unworthy. Over the past several decades, positive self-esteem has become not only a desirable psychological outcome in education but also the basis for all positive psychological behaviors (Baumeister, Campbell, Krueger, & Vohs, 2003). Because students with high self-esteem in one area usually have high self-esteem in all areas, one generalized test concerning self-esteem, the RSES, was used in this study (Kususanto et al., 2010). Self-esteem has also been found to be a significant predictor of educational attainment (Wadell, 2006). Promoting self-esteem among adolescents requires teachers to create supportive learning opportunities so that students can help one another while being provided with positive feedback from teachers (Lohan, 2016).

Students' perceptions of controlling behaviors have been identified as the focus of teachers on classroom discipline and control rather than on student-led classroom discussions, such as those displayed in supportive classrooms. Students' perceptions of teachers' supportive behaviors place a larger emphasis on academic achievement and little emphasis on student behavior. Students' perceptions of teachers' behaviors have been found to have a strong correlation to academic success, particularly in math and science (Maulana et al., 2012). The current, 42-state adoption of the new CCSSMP were partially designed to encourage more participation from students, a characteristic of supportive classrooms (Yanisko, 2016). These

new standards, along with the creation of a new evaluation of students' perceptions of teachers' behaviors in 42 states, further strengthens the emphasis that education has placed on students' perceptions of teachers' behaviors.

Although the null hypothesis was rejected using an ANOVA, the relationship between students' self-esteem and teachers' behaviors and gender were correlated, albeit extremely weak. A partial correlation did determine a moderate and positive correlation between self-esteem and supportive behaviors. In other words, an increase in students' self-esteem was reported when students perceived that math teachers placed more emphasis on the academics and performance of high-ability grouped students than on discipline issues. These results supported earlier findings of high-ability grouped students in Malaysia, who placed a higher value on themselves when they felt more support from their teachers (Kususanto et al., 2010). Ismail and Majeed (2011), in a study in Pakistan, also found that students in the high-ability group had positive perceptions of their teacher when they perceived the classroom to be more supportive than controlling. These results were confirmed by Imran (2013), who also found that students' perceptions of teachers' supportive behaviors had a direct impact on the behaviors that guided students' self-esteem.

Partial correlations between self-esteem and students' perceptions of teachers' controlling behavior did not yield significance in this study. Although no correlation could be made between the two variables, it should be noted that results of an earlier study did find that students' perceptions of teachers' controlling behaviors did have a link to self-esteem; however, it was unclear if the students' positive self-esteem was simply the result of teachers providing more attention because of discipline issues or academic performance (Kususanto et al., 2010). Strong correlations also have been noted between supportive behaviors and positive motivation,

among biology students, but negative correlations were found between controlling behaviors and motivation (Hofferber et al., 2016).

Correlations between gender and self-esteem were not deemed significant in this study. However, several studies have reported higher levels of self-esteem among male adolescents than female adolescents (Badayi & Ismail, 2012; Bhamani, 2014; Mosknes & Espes, 2013). An earlier qualitative study by Emil (1993) of 10 female students between the ages of 12 and 17 years found a sudden decline in female students' self-esteem as they approached middle school. It should be noted that using the slope coefficient, differences between male and female students in this study were significant. High-ability grouped female students reported higher levels of self-esteem than their male counterparts did. Results of an earlier study of 661 adolescents between the ages of 13 and 17 years did not identify any major differences in self-esteem based on gender (Rentzsch et al., 2015).

Participation of high-ability grouped female students in STEM classes has increased dramatically over the last 30 years. Results of a study conducted in 1983 by Benbow and Stanley with a sample of male and female high-ability math students found that the male students outnumbered the female students by a ratio of 13:1 (Benbow & Stanley, 1983). Ziegler et al. (2014) acknowledged that even though male-to-female ratios approach equal numbers, female students continue to demonstrate less confidence in their ability to perform in STEM core classes. Students' perceptions of their ability to complete mathematical tasks successfully continues to be higher among high-ability and average-ability boys than for girls during adolescence (Banfield, 2005). As a result, college courses relating to STEM subjects continue to be dominated by male students. Although the findings of the current study did not yield significant results between gender and self-esteem, it should be noted that the female students

did acquire a higher self-esteem average score on the self-esteem scale of 25.86 than their male counterparts, who had an average score of 24.46. Each participant in this study had been placed in a high-ability math group.

Bandura's (1971) SLT has been used extensively in academic research to compare students' behaviors based on the observations of others. The research obtained from the current study was used to further examine what is currently known about self-esteem and students' perceptions of teachers' behaviors. The SLT framework establishes four specific conditions between teachers and students that must be met before effective learning can take place: attention, retention, reproduction, and motivation. Students' perceptions of teachers' supportive behaviors positively influence these four behaviors. The SLT asserts that people observe one another and make decisions based on those observations.

Research confirming my results has shown that students, regardless of their placement in school, respond positively to what they perceive as teachers' supportive behaviors and negatively to the controlling behaviors of teachers (Hofferber et al., 2016; Ismail & Majeed, 2011; Kususanto et al., 2010). Students, according to Bandura's (1971) SLT, have little control in their placement in high-ability groups, but they do have the to determine how the information provided to them is accepted and how they react to it (Bandura, 2012). Students who feel that their teachers are more supportive are more likely to ask for assistance (Wu, Hughes, & Kwok, 2010), and positive feedback from teachers in supportive classrooms can have a positive influence on self-esteem, an assertion agreeing with Bandura's SLT (Diaconu, 2013).

### **Implications**

Results indicated that students' self-esteem increased as teachers' supportive behaviors increased. Earlier results (Ismail & Majeed, 2011; Kususanto et al., 2010) have identified similar



results, so it is reasonable to assume that if students are given more opportunities to lead the class, they will feel better about the class, with the outcome being higher self-esteem. Diaconu (2013) found that positive feedback from teachers, a characteristic of supportive classrooms, increases individual students' self-esteem. Likewise, classrooms where students have little say in the day-to-day operation might have little reason to feel excited about the class, an outcome that could lead to lower self-esteem.

Incorporating teachers' supportive behaviors into constructive criticism and more positive teacher-student interactions might help students to become more productive and confident in their ability to perform academically and ultimately increase their self-esteem. Moksnes and Espes (2013) concluded that students with higher self-esteem often seek more social support from teachers and peers. Stronger social support can then lead to more efficacious coping abilities when dealing with the challenges present in the high-ability mathematics classroom. Schools might be able to encourage more supportive behaviors from teachers through training programs implementing these positive behaviors. School administration might be able to use the data to develop and ask questions during the interview process when hiring new teachers, something that could lead to students perceiving that teachers' behaviors are more supportive.

The relationship between self-esteem and gender perhaps has reflected a growing trend in education in the United States. In this study, female participants in the high-ability math group reported higher levels of self-esteem. This finding was different from earlier results showing that the self-esteem of high-ability male students was higher than that of their female counterparts (Bhamini et al., 2014; Kohli & Gupta, 2013; Tan & Tan, 2014). The findings also contradict earlier research indicating that although female students in the mathematics classroom continued

to increase their ability to perform at equal or higher levels than their male counterparts, female confidence continued to lag behind that of the male students (Ziegler et al., 2014). The participation of female students continues to fall behind male students in their completion of coursework in advanced mathematics and science. Future investigations into differences in the levels of self-esteem of high-ability male and female math students using the same three instruments used in this study might yield similar results and might be beneficial in helping to identify a relationship between the variables.

### **Limitations**

Three schools, each located within one school district in northwestern Georgia, were selected to participate. Each school had two high-ability Grade 6 math classrooms with 30 to 35 students in each class. Therefore, the study was limited to a maximum of 210 high-ability math students within one school district. This limitation restricted making generalizations or drawing conclusions about other high-ability grouped students.

Georgia is a socioeconomically diverse state, with 181 school districts and more than 2,200 middle schools located across the state (GADoE, 2015). Many of these areas are more densely populated and offer different cultural support systems than the three schools in this study. Therefore, the results might not be representative of other schools or school districts in the state.

Time constraint was a major limitation of the study. Each of the three schools completed the study within 3 weeks. Conflicts with teacher absenteeism raised issues regarding student placement during one administration of the survey questions. Students were moved to a different area of the school to complete the study, a process that delayed completion of the instruments within the allotted 30-minute time limit. In addition, several of the instruments were completed

on the same day because of conflicts related to outside activities occurring between the other schools simultaneously. Having more time to complete the study might have eliminated any outside conflicts of interest among the schools. Compensating participants who completed the three surveys with a gift of \$1 each might have resulted in issues regarding the reliability and validity of the data. The young participants might have rushed through each instrument without placing much emphasis on their actual responses.

The use of multiple regression to analyze the data also might have contributes to the number of limitations. Predictor variables in a multiple regression analysis are given credit only for the amount of variance ascribed to that predictor. Therefore, multiple variables might receive partial credit for variance that could be better calculated by a single predictor variable. High collinearity among the variables in a multiple regression model might eliminate some variables as predictors, even though all of the predictors might contribute to some extent (Gall et al., 2007).

### **Recommendations for Future Research**

Further research into the relationship of students' self-esteem, students' perceptions of teachers' behaviors as controlling or supportive, and gender is warranted, but is not limited to the following recommendations:

1. Complete the survey in another area of the United States. This study was the first known investigation using the three instruments with middle school students in the United States. Other studies (Ismail & Majeed, 2011; Kususanto et al., 2010) have been conducted with adolescents in Malaysia and Pakistan using all three surveys, but not in other parts of the United States.

2. Conduct another study with a larger sample to obtain a truer representation of the self-esteem of adolescents in the United States based on students' perceptions of teachers' behaviors.
3. Reproduce this study using the three instruments while measuring for such other demographics as age, race, or another grade.
4. Complete the instruments at a later date in the school year. This study was completed in September and October 2018. Conducting the study at a later date might have given students more time to become more familiar with their teachers and gain a better understanding of the teachers' classroom behaviors.

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**APPENDIX A: IRB APPROVAL**

Dear Shane Grant,

We are pleased to inform you that your study has been approved by the Liberty University IRB. This approval is extended to you for one year from the date provided above with your protocol number. If data collection proceeds past one year, or if you make changes in the methodology as it pertains to human subjects, your approval must submit an appropriate update form to the IRB. The forms for these cases are attached to you email.

Your IRB-approved, stamped consent form is also attached. This form should be copied and used to gain the consent of your research participants. If you plan to provide your consent information electronically, the contents of the attached consent document should be made available without alteration.

Please retain this letter for your records. Also, if you are conducting research as part of the requirements for a master's thesis or doctoral dissertation, this approval letter should be included as an appendix to your completed thesis or dissertation.

Thank you for your cooperation with the IRB and we wish you well with your research project.

Sincerely,

**G. Michele Baker, MA, CIP**  
*Administrative Chair of Institutional Research*  
**The Graduate School**

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**UNIVERSITY**

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**APPENDIX B: SUPERINTENDENT PERMISSION REQUEST**

Application to Conduct Research in [Redacted]

Date Submitted: 8/15/2016

Name: Shane Grant

Address: 120 Colonial Circle NW

City, State, Zip: Cartersville, GA 30120

Email: shane.grant@bartow.k12.ga.us

Phone #'s:

Work #: (770) 606-5842

Cell #: (770) 324-5955

Employer or Company Name: [Redacted]

Name of College or University for which the project is to be conducted, if applicable: Liberty University

Name of major or advising professor: EDD: Teaching and Learning

Description of research project: A Study Of The Relationship Between Male And Female Students' Self-Reported Self-Esteem Levels And Their Perceptions Of Teacher Behaviors As Controlling Or Supportive

Beginning and Ending Dates for Research Project: Spring 2017/ Fall 2017

How will parental permission be obtained, if required? Parental Consent Form

Describe any data requests that will be made of school(s) or school system: Data collected will be obtained through results of three instruments from each of the three schools.

Will subjects be paid? No

Names of schools to be involved: [Redacted]

Number of students to be involved and grade levels: Between 150 and 200 students.



Estimated time required of students: 30 minutes

Number of teachers/administrators/support staff to be involved and grade levels: Request of one staff member or administrator from each school from one thirty minute session.

Estimated time required of staff: 30 minutes per staff member.

Description of questionnaires, surveys, and materials to be used in the project (**attach a copy**):

**Read and sign below:**

**I understand that information related to employees and students in [Redacted]**

**School System is confidential and that [Redacted] School System employees and students shall not be identifiable in any research reports.**

**Signature Date**

**Please submit to your principal for review and then forward to [Redacted] for approval.**

\_\_\_\_\_  
**Principal Signature**

\_\_\_\_\_  
**Date**

\_\_\_\_\_  
**Superintendent Signature**

\_\_\_\_\_  
**Date**

**APPENDIX C: PRINCIPAL PERMISSION REQUEST**

2/22/2017

Principal  
Middle School

Dear:

As a graduate student in the School of Education at Liberty University, I am conducting research as part of the requirements for a doctoral degree. The title of my research project is A Study Of The Relationship Between Male And Female Students' Self-Reported Self-Esteem Levels And Their Perceptions Of Teacher Behaviors As Controlling Or Supportive. The purpose of my research is to determine if there is a statistically significant relationship between the student's self-esteem and their perceptions of teachers' behaviors as controlling or supportive. With the introduction of the Common Core Standards for Mathematics, positive communication between student and teacher are more important than ever. Students, particularly in the high-ability math setting, are asked to create viable arguments and creative problem solving techniques. This research may assist schools looking to develop programs to help high-ability math students better communicate with teachers and peers. The study will be conducted at three middle schools located in northwestern Georgia. Both high-ability sixth-grade math classes will be the only students participating in the study. I am writing to request your permission to conduct my research at [Redacted] Middle School.

Upon permission of administration parents of possible sixth grade participants will be provided with a parent consent form prior to student participation. Once parent approval letters have been received, student assent letters will be provided to all students able to participate. Once parent consent and student assent letters are approved, the researcher will call to select an appropriate time to meet with participants. Taking part in this study is completely voluntary, and participants are welcome to discontinue participation at any time. The researcher will conduct the study and do the participants provide the only person with access to any information.

The participants will be asked to meet in the media center on the confirmed date. Participants will use their computers and the Survey Monkey website to complete the attached surveys. Three surveys, consisting of ten questions each, will be provided. Normal completion time for each survey is ten minutes, however, students will be provided with thirty minutes to complete all three instruments.

Thank you for considering my request. If you choose to grant permission, please provide a signature and date below. Please email any questions to [shane.grant@xxx](mailto:shane.grant@xxx)

Sincerely,

Shane Grant

---

Adairsville Middle School

Signature

Date

**APPENDIX D: PRINCIPAL PERMISSION REQUEST**

2/22/2017

Principal

Dear:

As a graduate student in the School of Education at Liberty University and I am conducting research as part of the requirements for a doctoral degree. The title of my research project is A Study of the relationship between male and female students' self-reported self-esteem levels and their perceptions of teacher behaviors as controlling or supportive and the purpose of my research is to examine male and female high-ability grouped students' self-esteem, to determine if there was a statistically significant relationship between the student's self-esteem and their perceptions of teachers' behaviors as controlling or supportive. With the introduction of the Common Core Standards for Mathematics, positive communication between student and teacher are more important than ever. Students, particularly in the high-ability math setting, are asked to create viable arguments and creative problem solving techniques. This research may assist schools looking to develop programs to help high-ability math students better communicate with teachers and peers. The study specifically will examine the relationship between self-esteem and student perception of teacher behavior as controlling or supportive at three middle schools located in northwestern Georgia.

I am writing to request your permission to conduct my research at [Redacted] Middle School.

Participants will be asked to go to Survey Monkey and click on the link provided to complete the attached surveys. Participants will be presented with informed consent information prior to participating. Taking part in this study is completely voluntary, and participants are welcome to discontinue participation at any time.

Thank you for considering my request. If you choose to grant permission, please provide a signed statement on approved letterhead indicating your approval or respond by email to [shane.grant@xxx](mailto:shane.grant@xxx)

Sincerely,

Shane Grant  
iLearn Math Teacher  
[Redacted] Middle School

## **APPENDIX E: PARENTAL CONSENT FORM**

Your child is invited to be part of a research study where I will look at the possible relationship between high-ability grouped sixth grade math student's perceptions of his or her teachers controlling or supportive behavior and the self-esteem of the student. Controlling behaviors are generally defined as student perceived teacher behaviors focusing on monitoring behavior whereas supportive behavior places an emphasis on student-led instruction. Your student was randomly selected to be a possible participant in the study. The study will be completed during one thirty-minute advisement block. Please read the entire form and ask the researcher, Shane Grant, any questions you may have before agreeing to your child's participation in the study. This study is being conducted by: Mr. Shane Grant, iLearn Math Teacher, [Redacted] Middle School

### **Background Information:**

The purpose of this study is to examine the relationship between self-esteem and the sixth grade high-ability grouped math students' perception of teacher behavior. To participate, the student must be enrolled in a sixth grade high-ability math program at his or her school.

### **Procedures:**

If you agree to allow your child to participate in this study, I would ask you to do the following things:

- 1.) Fill out and sign the current consent form.
- 2.) Have your child sign the consent form where appropriate.

### **Risks and Benefits of being in the Study:**

I do not anticipate any risks to your child participating in the study other than those encountered in his or her normal day-to-day life. There are no benefits to your child for participating in the study.

### **Compensation:**

Students allowed to participate in the study will not receive any bonus toward their final grade but a new one-dollar bill will be included with the parent consent letter as a token of appreciation for consideration in participating in the study and completing the three instruments.

**Confidentiality:**

The records of this study will be kept private. I will not include any information that will make it possible to identify any student in any sort of report made public. No student names will be recorded. Students will only be identified by gender. Research records will be kept in a locked file. The researcher will have access to the files. No other person, including administration, teachers, parents, or other students will have access to any file at any time. All documents used by the researcher will be recorded into a secure computer program and the documents will then be destroyed at the conclusion of the study.

**Voluntary Nature of the Study:**

Student participation in the study is strictly voluntary. A student may skip any questions from each instrument he or she does not want to answer. Participation in the study will not affect the student's ties to Liberty University or Bartow County School. If your child does agree to take part, he or she is free to withdraw at any time without penalty.

**Contacts and Questions:**

The researcher leading this study is Shane Grant. If you have any questions you are encouraged to contact him at [Redacted] Middle School, 770-xxx-xxxx, shane.grant@xxx (*Advisor- Lisa Reason, Education Department, Liberty University*)

If you have any questions or concerns regarding this study and would like to speak to someone other than the researcher, **you are encouraged** to contact the Institutional Review Board, 1971 University Blvd, Green Hall 1887, Lynchburg, VA 24515 or email at irb@liberty.edu

***Please notify the researcher if you would like a copy of this information to keep for your records.***

**Statement of Consent:** I have read and understood the above information. I have asked questions and have received answers. I consent to allow my child/student to participate in the study.

Your Name (printed) \_\_\_\_\_

Your Signature \_\_\_\_\_

Student Name (printed) \_\_\_\_\_

Student Signature \_\_\_\_\_

*The researcher will keep this consent form for at least three years beyond the completion of the study.*

## APPENDIX F: ASSENT OF CHILD TO PARTICIPATE IN A STUDY

**What is the name of the study?** A Study of The Relationship of Male And Female Students' Self-Reported Self-Esteem Levels and Their Perceptions of Teacher Behaviors as Controlling or Supportive

**Who is doing the study?** Shane Grant, a graduate student at Liberty University

**Why am I doing this study?**

I am interested in studying the relationship, if any, between how you feel about yourself and how well you feel your teacher performs in the classroom.

**Why are we asking you to be in this study?**

You are being asked to be in this research study because you are a sixth grade high-ability math student at your school.

**If you agree, what will happen?**

If you are in this study you will answer ten questions from three different surveys. Each question consists of four options, similar to multiple choice type questions. You will be asked to choose between strongly agree, agree, disagree, and strongly disagree for each question.

**Do you have to be in this study?**

No, you do not have to be in this study. If you want to be in this study, then tell the researcher. If you don't want to, it's OK to say no. The researcher will not be angry. You can say yes now and change your mind later. It's up to you.

**Do you have any questions?**

You can ask questions any time. You can ask now. You can ask later. You can talk to the researcher. If you do not understand something, please ask the researcher to explain it to you again. No one, including the principal, your teachers, or your parents will know how you answered any part of the three surveys. I, Shane Grant, will be the only person with access to any information you provide.

Signing your name below means that you want to be in the study.

---

Signature of Child

Date

If you have any questions later you are encouraged to contact him at [Redacted] Middle School, 770-xxx-xxxx, shane.grant@xxx (*Advisor- Lisa Reason, Education Department, Liberty University*)

Liberty University Institutional Review Board,  
1971 University Blvd, Green Hall 1887, Lynchburg, VA 24515  
or email at irb@liberty.edu