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Underachievement in Gifted Students: Understanding Perceptions of Educational Experiences, Attitudes Toward School, and Teacher Training

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by

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A Dissertation submitted to the Education Faculty of Lindenwood University in partial fulfillment of the requirement for the degree of

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Dr. Brad Hanson, Dissertation Chair — Date June 20, 2017

Dr. Sherry DeVore, Committee Member — Date June 20, 2017

Dr. Kathy Grover, Committee Member — Date June 20, 2017

Declaration of Originality

I do hereby declare and attest to the fact that this is an original study based solely upon my own scholarly work at Lindenwood University and that I have not submitted it for any other college or university course or degree.

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Abstract

Underachievement in gifted students is a problem often overlooked in the school system; up to 50% of gifted students achieve below their potential abilities (Morisano & Shore, 2010). However, gifted students are not considered at-risk and do not always receive educational experiences aimed to meet their needs (Ritchotte, Matthews, & Flowers, 2014). The risk of gifted underachievement is a problem for educators and a loss to society (Ritchotte et al., 2014; Steenbergen-Hu & Olszewski-Kubilius, 2016). In this quantitative study, survey responses from gifted achievers and underachievers were analyzed to determine differences in educational experiences and attitudes toward school and learning. Additionally, data from teachers were analyzed to determine if they perceive themselves as properly trained to meet the affective and academic needs of gifted students. The Mann-Whitney *U* test was used to understand whether the perceived value of educational experiences and attitudes toward school and learning differed among achieving and underachieving gifted students. The test showed no statistically significant difference between the two groups. Frequency distribution indicated the mode of responses to the teacher surveys. While some teachers use effective strategies in their classrooms to meet the needs of gifted students, other do not. Most teachers admitted to having limited training in gifted education. With lack of specialized teacher training and underachievement of the nation's brightest students, a problem exists which needs to be addressed by educational systems to provide appropriate educational experiences to students with the potential for successful futures to benefit society.

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Chapter One: Introduction

They sit in classrooms going "through motions of the day without learning a thing" (Schultz, 2002, p. 205). They become bored and disengaged, often resulting in undesirable behaviors (Merriman, 2012). They are the bright minds who could be future leaders. They are gifted students who are underachieving in school.

Gifted students have the ability to excel in school, and some do; however, researchers have confirmed approximately 50% of middle school gifted students underachieve (Chinnis, 2016). These brilliant individuals considered to be underachievers refuse to turn in assignments and limit their academic risk-taking (Merriman, 2012). Many times, their behaviors become a problem and a distraction in the classroom (Ritchotte, Rubenstein, & Murry, 2015). When unchallenged, gifted students often become bored, act out, and are noncompliant in completing assignments they view as pointless (Merriman, 2012).

Underachievement in gifted students is a problem which needs to be addressed (Morisano & Shore, 2010). According to Morisano and Shore (2010), "Because of the hidden characteristics of underachievement, it may be hard for teachers to recognize underachievement when it is taking place" (p. 251). Gifted underachievers display characteristics unique in comparison to their achieving peers (Hoover-Schultz, 2005), and these characteristics are oftentimes overlooked (Morisano & Shore, 2010). Unless addressed no later than middle school, underachieving intelligent students quickly become travelers down a path of failure (Ritchotte, Matthews, & Flowers, 2014). If educators are adroit at recognizing the characteristics and causes of underachievement in gifted students, this problem can be reversed (Morisano & Shore, 2010).

While there are many causes of underachievement in gifted students (Schultz, 2002), this study included a review of previous research and focused on the perceptions underachievers had of their own educational experiences and attitudes toward school. These perceptions were compared with their achieving counterparts. The role educators play in meeting the needs of gifted underachievers was investigated.

Background of the Study

The development of structured gifted programs began in the 20th century; however, "the advocacy for gifted learners" has occurred throughout time (Bergstrom, 2015, p. 29). Even in ancient times, "great thinkers" wrote about "heavenly" children, emphasizing the role they can play in society with the appropriate support system (Sekowski & Lubianka, 2015, p. 624). The debate over the relationship between giftedness and school achievement, however, began in the 20th century (Sekowski & Lubianka, 2015). Underachievement in gifted students has been recognized and studied in the educational field for over 50 years (Veas, Gilar, Minano, & Casterjon, 2016). John Curtis Gowan studied underachievement in gifted students in the 1950s and concluded, "Underachievement of gifted children is the largest waste in society" (Tsai & Fu, 2016, p. 688). Present-day researchers have recognized the relevance of past experiences and understand the "social need to invest in the potential of gifted persons" (Sekowski & Lubianka, 2015, p. 624).

Since the 1950s, researchers have studied the behaviors of underachieving gifted students and have concentrated on three types of variables associated with such underachievement: home and parental, personality, and school-related (Tsai & Fu, 2016). School-related variables have been addressed by Davis and Rim, who argued gifted

students have “special needs, requiring special teaching methods and a tailored, mentally challenging learning environment” (as cited in Khalil & Accariya, 2016, p. 407). By elementary school age, gifted students have already achieved 50% of the skills they will be taught (Rosenberg, 2015b). Sylvia Rimm (2008) stated:

> The surest path to high self-esteem is to be successful at something you perceived would be difficult. Each time we steal our students’ struggle by insisting they do work that is too easy for them, we steal their opportunity to have an esteem building experience. Unless kids are consistently engaged in challenging work, they will lose their motivation to work hard. (p. 264)

Fifteen to 40% of at-risk gifted students perform far below their abilities (Figg, Rogers, McCormick, & Low, 2012). Furthermore, Siegle argued, “The greater their underachievement, the less likely they will reverse it” (as cited in Chinnis, 2016, p. 1).

For gifted students to stay motivated and perform to their highest potential, a necessity remains for educational systems to meet their special needs (dos Reis Taucei, Stoltz, & Gabardo, 2015). Renzulli ascertained as long ago as the late 1960s and early 1970s, literature explained the need for educational systems to offer differentiated instruction for “high potential students” (dos Reis Taucei et al., 2015, p. 2264). Dos Reis Taucei et al. (2015) argued:

> This need consists of providing development and enhancement to gifted students in a given area of performance and/or minimizing difficulties that may arise, as well as favouring the development of individuals who could possibly contribute to solving society’s problems, becoming producers of knowledge and art, and not just consumers of information that already exists. (p. 2264)

Providing gifted students with challenging learning opportunities contributes to motivation and invests in these potentially high-achieving students, as well as society (Sekowski & Lubianka, 2015).

In 1988, the Jacob K. Javits Gifted and Talented Students Education Act was passed by Congress (Chinnis, 2016). The scope to the act was to "support the development of talent in U.S. schools" and was the only federal program supporting gifted education (Chinnis, 2016, p. 9). The focus of schools changed just a few years later when the No Child Left Behind (NCLB) Act was introduced in 2001 and again when the Race to the Top initiative was launched in 2009 (Chinnis, 2016). Although gifted students were addressed in NCLB, the educational system focus had shifted (Chinnis, 2016). The focus was no longer on the needs of at-risk gifted students, but rather at-risk students performing below grade level (Chinnis, 2016).

Conceptual Framework

The needs of all students should be met in general education classrooms, but this is not always the case (Schultz, 2002). With traditional classroom settings and teaching strategies, "gifted students often are those who are the least likely to experience academic growth" (Brulles & Winebrenner, 2011, p. 38). As a result, some become gifted underachievers (Morisano & Shore, 2010). Brulles and Winebrenner (2011) proposed a Schoolwide Cluster Grouping Model (SCGM) to provide gifted students with "effective and consistent" educational experiences (p. 35). This model delivers educational experiences conducive to learning and achievement of gifted students, thus promoting positive school experiences and attitudes toward learning (Brulles & Winebrenner, 2011). The SCGM encompasses all the elements necessary to meet academic and affective needs

of gifted students; thus, the conceptual framework for this study was based on this model (Brulles & Winebrenner, 2011).

Schultz (2002) believed gifted students are not the underachievers, but rather the underachievers are schools not providing proper educational opportunities to meet the needs of talented, high-ability students. A fundamental task of the educational system is to provide learning opportunities to "flourish the various talents of students" (Farsimaden, Poorgholami, Safari, & Gharacheh, 2015, p. 297). Changes need to be made, and according to Brulles and Winebrenner (2011), "Schools today are experiencing dramatic changes in how they serve gifted students" (p. 35). Necessary changes to the educational system and the need to properly serve gifted students, thus preventing underachievement, provided the conceptual framework for this study.

Schools implement the SCGM by clustering gifted students in otherwise heterogeneous general education classrooms (Brulles & Winebrenner, 2011). Gifted students who are given the opportunities to learn adjacent to their intellectual peers take more academic risks and feel more confident when learning (Brulles & Winebrenner, 2011). Students placed in general education classrooms with other gifted students are engaged, challenged, accepted, and understood (Brulles & Winebrenner, 2011). Achievement levels of gifted students increase when provided opportunities to learn together (Brulles & Winebrenner, 2011).

Along with interaction with intellectual peers, gifted students who are clustered also receive differentiated instruction from teachers with specialized training (Brulles & Winebrenner, 2011). For the SCGM to be effective, teachers need special training to equip them with strategies beneficial to gifted students and effective with all students

(Brulles & Winebrenner, 2011). Classroom teachers become "complacent about challenging gifted students when in their homeroom classes" (Brulles & Winebrenner, 2011, p. 37). However, Brulles and Winebrenner (2011) also concluded teachers are more likely to provide educational experiences which accelerate and compact when a group of students demonstrate a need. Teachers who are willing to obtain specialized training to prepare for the academic and affective needs of gifted students will "enfranchise, engage, and challenge" gifted students in the classroom (Brulles & Winebrenner, 2011, p. 39).

Changes need to be made to the educational system to ensure gifted students are provided learning opportunities to keep them on a path of success (Farsimadan et al., 2015). Students are grouped in a classroom alongside intellectual peers with a teacher who has received specialized training to provide differentiated instruction and challenges necessary for gifted students (Brulles & Winebrenner, 2011). This learning environment can be established at no additional cost to schools (Brulles & Winebrenner, 2011).

Furthermore, the SCGM is parallel with research suggesting causes of underachievement and strategies used to reverse such underachievement in gifted students. The research conducted for this study encapsulates the criterion of the model. Researchers have identified various causes of underachievement in gifted students (Morisano & Shore, 2010; Reis & McCoach, 2015). The SCGM addresses these setbacks by moving away from traditional classroom settings and toward alternative educational experiences to satisfy the needs of gifted students (Brulles & Winebrenner, 2011). Educational environments designed to nourish groups of gifted students through challenges facilitated by teachers with specialized training produce positive experiences

and attitudes toward school and reduce the risk of underachievement (Brulles & Winebrenner, 2011). The responses to survey questions generated for this study relate to the elements of the SCGM, including interaction with peers, differentiated instruction, attitudes toward school and learning, and specialized training. The SCGM model accommodates the needs of gifted students daily, allowing gifted students in classrooms across the nation to be achievers rather than underachievers in school and life.

Statement of the Problem

Students identified as gifted possess high intellectual abilities (Snyder & Linnenbrink-Garcia, 2013). However, when gifted students are achieving below their expected abilities or there is a discrepancy between potential and actual performance, they are considered to be gifted underachievers (Ritchotte et al., 2015; Schultz, 2002; Snyder & Linnenbrink-Garcia, 2013). Morisano and Shore (2010) suggested, "Between fifteen percent and fifty percent of gifted children achieve significantly below their intellectual and creative potential in their personal, work-related and academic lives" (p. 250).

Per decades of research, the educational needs of gifted students are not being met (Brulles & Winebrenner, 2011; Porter, 2013). High-ability students may represent 7% to 10% of the entire school population, but the probability their educational needs are being accommodated is much lower than the probability for low-achieving students (Brulles & Winebrenner, 2011). An apparent problem exists when the educational system places importance on meeting the needs of lower-achieving students while failing to meet the needs of high-achieving students (Brulles & Winebrenner, 2011). McMath (2016) pointed out the failing efforts of the education system not only affect the future of high-

ability learners, but also the future of the nation. According to McMath (2016), "Schools are failing America's most gifted students; they are failing to provide equity; they are ignoring the needs of advanced learners; and they are failing to meet the nation's need for a talented workforce" (p. 7). High-achieving students are not receiving the proper education to satisfy their needs through differentiated and individualized instruction (Batdal Karaduman, 2013). Schultz (2002) boldly stated, "They [gifted students] are not underachieving. Rather, schools are underachieving in providing educational opportunities for these bright, yet unengaged individuals" (p. 220).

Previous researchers have revealed the causes of gifted underachievement. Underachievement results from a combination of factors (Morisano & Shore, 2010). While these causes have been extensively explored, prevention and reversal strategies are not being implemented (Morisano & Shore, 2010). Morisano and Shore (2010) stated:

> Extremely bright children have special needs that must be addressed by educators… arguably as much as children with developmental delays or other learning disorders. Both the child and society benefit when professionals search for solutions to increase the productivity and achievement of the underperforming bright student. (p. 249)

As reported by Ritchotte et al. (2015), "When gifted students begin to underachieve, it becomes increasingly difficult to break the pattern" (p. 103). Since "the process of disengagement and withdrawal occurs over many years," interventions should begin early (Landis & Reschly, 2013, p. 225). Ritchotte et al. (2015) agreed interventions should start no later than middle school; therefore, the pattern of change needs to begin with elementary school general education teachers.

To meet the needs of gifted students and to provide an educational experience in which they will excel, general education teachers need to have an understanding of the academic and affective needs of gifted students (Accariya, 2016; Al-Khayat & Al-Adwan, 2016). Although gifted underachievers present a potentially devastating loss to society, educators generally do not perceive this group as being "at risk" (Ritchotte et al., 2015, p. 183). Teachers carry the misconception gifted students can make it on their own (Ritchotte et al., 2015; Subotnik, Olszewski-Kubilius, & Worrell, 2012; Tilles, 2014). Underachievement in gifted students is often viewed as a "chronic phenomenon, one that most likely will not fix itself without appropriate interventions" (Ritchotte et al., 2015, p. 183).

Preventing or reversing underachievement in gifted students begins with teachers (Khalil & Accariya, 2016). Teachers need proper training to meet the needs of this high-ability group of students (Teno, 2000). Henderson and Jarvis (2016) explained, "Without professional learning in gifted education, teachers are ill-equipped to understand, identify and provide for gifted students" (p. 60).

Underachievement in gifted students is a problem and a potential loss to the student and society (Tsai & Fu, 2016). This problem of underachievement stems from a problem within the educational system (Schultz, 2002). Teachers have misconceptions of gifted students and may not be properly trained to meet the needs of these students (Satova, 2015). The problem can be solved by recognizing the needs of gifted students and implementing strategies resulting in a greater percentage of achieving gifted students who will potentially benefit society.

Purpose of the Study

If students' academic needs are not being met, there is a potential risk of underachievement (Brulles & Winebrenner, 2011). As stated by Morisano and Shore (2010), "It is estimated that nearly half of gifted youth achieve significantly below their potential… gifted children have special needs that must be addressed" (p. 249). Underachievement in gifted students results from a combination of factors (Morisano & Shore, 2010), which include the absence of a challenging curriculum and finding little or no value in school and academics (Merriman, 2012).

Teachers of gifted students should "provide instruction that takes into account the attributes of gifted learners, emphasize appropriately challenging material, and encourage divergent, critical thinking" (Brulles & Winebrenner, 2011, p. 38). Teachers who have misconceptions may also lack training necessary to meet the needs of gifted students, thus resulting in underachievement (Satova, 2015). Satova (2015) argued, "Special preparation is necessary for teachers to implement effective teaching strategies to meet the needs of gifted learners" (p. 45). Educators of gifted students should have in place "a curriculum that promotes intellectual, creative, spiritual development of the child" (Satova, 2015, p. 46). Researchers in the field of education established provisions in three main areas need to be present: instructional management, instructional delivery, and curricular services (Seedorf, 2014).

The purpose of this study was to determine if there is a difference between achieving and underachieving gifted students' perceptions of their educational experiences in the regular education classroom and of their attitudes toward school. Data were analyzed to compare the perceptions of achieving and underachieving gifted

students regarding their educational experiences and attitudes toward school. Additionally, the researcher determined if teachers believe they are properly trained to meet the needs of gifted students in their classrooms.

Research Questions and Null Hypotheses

The following research questions guided the study:

1. What is the difference in the perceived value of educational experiences in the regular education classroom between achieving and underachieving gifted students?

$H1_0$ There is no difference in the perceived value of educational experiences in the regular education classroom between achieving and underachieving gifted students.

2. What is the difference in attitudes toward school and learning between achieving and underachieving gifted students?

$H2_0$ There is no difference in attitudes toward school and learning between achieving and underachieving gifted students.

3. What are the perceptions of regular education teachers in regard to meeting the needs of gifted students in their classrooms in the following areas: social and emotional, academic, and training and professional development?

Significance of the Study

Students identified as gifted have the potential of high levels of achievement (Snyder & Linnenbrink-Garcia, 2013). Morisano and Shore (2010) suggested, "Between 15% and 50% of gifted children achieve significantly below their intellectual and creative potential in their personal, work-related and academic lives" (p. 250). These percentages confirm gifted underachievement is a problem. Unless this problem is addressed, not only is there a potential loss to the student, but also to society (Ritchotte et al., 2015).

According to research, the educational needs of gifted students are not being met (Brulles & Winebrenner, 2011). An apparent problem exits when the educational system does not place importance on proper educational experiences to satisfy the needs of gifted students (Batdal Karaduman, 2013). In order to meet the needs of gifted students and to provide an educational experience in which they will excel, general education teachers need to have an understanding of the academic and affective needs of these students.

As a result of this study, a greater awareness of the problem of underachievement in gifted students may be generated. The problem can be solved by diminishing preconceived ideas about gifted students and recognizing their needs. Implementation of strategies to benefit and meet the needs of gifted students will result in a greater percentage of gifted achievers who will potentially benefit society. Awareness of underachievement in gifted students and the equipping of teachers with knowledge and strategies will assist in closing the gap of gifted underachievement.

Definition of Key Terms

For the purposes of this study, the following terms are defined:

Academic achievement. Academic achievement is the performance outcome demonstrating the extent to which a student has accomplished specific goals (Steinmayr, Meißner, Weidinger, & Wirthwein, 2014).

Cluster grouping. Cluster grouping is the grouping together of gifted students depending upon their abilities, achievement levels, and interests (Brulles & Winebrenner, 2011).

Gifted. Gifted individuals are those who have high intellectual ability and an intelligence quotient (IQ) of 125 or above (Snyder & Linnenbrink-Garcia, 2013).

Rigor. Rigor describes instruction, assignments, learning experiences, and expectations which are "academically, intellectually, and personally challenging" (*The Glossary of Education Reform*, 2014, para. 1). Rigor encourages students to think critically, creatively, and flexibly (*The Glossary of Education Reform*, 2014).

Underachievement. Underachievement is the difference between potential performance and actual performance (Merriman, 2012).

Limitations and Assumptions

The following limitations were identified in this study:

Sample demographics. The study was limited by the sample size and the perceptions of the participants. Participants included teachers and students in one school district in southwest Missouri. The data were collected from gifted students in grades four through six and from general education teachers of grades one through six.

Response rate. The study was limited by the number of responses received from the participants. The convenience of an electronic survey may have increased the response rate; however, there were participants who felt they did not have the time to respond or simply chose not to be involved.

Instrumentation. Data were collected from responses to survey questions. Surveys limit the range of responses, as participants are forced to answer in a particular format (Simon & Goes, 2013). In addition, the survey did not allow for clarification by the respondents. The survey limited the participants in terms of where and how to respond (Simon & Goes, 2013).

The following assumptions were accepted:

1. The responses of the participants were offered honestly and without bias.

2. The participants understood the questions on the surveys.
3. The study sample was representative of the gifted population.
4. The inclusion criteria were appropriate for this study.
5. The participants had no other motives in agreeing to participate in the study.

Summary

Underachievement in gifted students has been studied for over 50 years (Veas et al., 2016). Through the years, researchers have determined there are a number of factors causing gifted underachievement (Morisano & Shore, 2010). The purpose of this study was to determine if there is a difference between achieving and underachieving gifted students' perceptions of their educational experiences in the regular education classroom and of their attitudes toward school. In addition, another purpose was to determine the perceptions of teachers in terms of their training and qualifications to meet the needs of gifted students.

Gifted students have needs which must be met for them to stay motivated and to perform to their highest potential (dos Reis Taucei et al., 2015). Educational systems not recognizing underachieving gifted students as being at-risk are not only providing a disservice to students, but also to society (Tsai & Fu, 2016). Therefore, schools must invest in high-ability students, which is also an investment in the future (Sekowski & Lubianka, 2015).

In Chapter Two, a review of current literature relating to underachievement in gifted students is provided. The causes of gifted underachievement and the relationship between educational experiences and underachievement are explored. An overview of conclusions of past research regarding the effect of attitudes toward school on

underachievement is provided. Professional development and training necessary for teachers to effectively meet the needs of gifted students is also discussed.

Chapter Two: Review of Literature

If students' academic needs are not being met, there is a potential risk of underachievement (Brulles & Winebrenner, 2011). Researchers have discovered nearly half of gifted students achieve below their potential (Morisano & Shore, 2010). Morisano and Shore (2010) further stated, "Gifted children have special needs that must be addressed" (p. 249). This diverse group of students require "educational provisions" to meet their unique needs (Henderson & Jarvis, 2016, p. 60). As stated by Rubenstein, Siegle, Reis, McCoach, and Burton (2012), "Because academic achievement is beneficial for both the individual and society, there should be increased attention paid to interventions for underachieving students, as it is important that all students' talents be realized" (p. 692).

Conceptual Framework

Placed in traditional classroom settings with teachers using traditional teaching strategies, "gifted students often are those who are the least likely to experience academic growth" (Brulles & Winebrenner, 2011, p. 38). As a result, some become gifted underachievers (Morisano & Shore, 2010). According to Schultz (2002), gifted students are not underachieving; rather, schools inadequately providing proper education to meet the needs of gifted and talented students are the underachievers. Hogrebe (2015) concurred, "Schools have also struggled to identify gifted students and appropriately educate this population of students" (p. 102). Changes need to be made in the way gifted students are served (Brulles & Winebrenner, 2011). Necessary changes to the educational system and the need to serve gifted students in order to reduce the risk of underachievement provided the conceptual framework for this study. The SCGM

provides the change necessary to reduce the risk of underachievement in gifted students, and for this reason, the model was selected as the conceptual framework for this study.

Brulles and Winebrenner (2011) proposed a Schoolwide Cluster Grouping Model (SCGM) to serve gifted students with "effective and consistent" educational experiences (p. 35). The SCGM provides gifted students with opportunities to learn together (Brulles & Winebrenner, 2011). Through interaction with intellectual peers and differentiated instruction, gifted students have positive school experiences (Brulles & Winebrenner, 2011). The SCGM provides gifted students with a class setting with intellectual peers where they are challenged, encouraged, accepted, and understood (Brulles & Winebrenner, 2011).

Brulles and Winebrenner (2011) confirmed classroom teachers are more likely to differentiate and provide educational experiences to accelerate and compact when gifted students are clustered. The SCGM requires teachers to receive training to equip them with teaching methods beneficial and effective not only to gifted students, but to all students (Brulles & Winebrenner, 2011). The model provides learning opportunities advantageous to gifted students through teachers who have specialized training in the knowledge of academic and affective needs of gifted students (Brulles & Winebrenner, 2011). Brulles and Winebrenner (2011) substantiated classroom teachers become "complacent about challenging gifted students when in their homeroom classes" (p. 37).

Changes necessary in the educational system to meet the needs of gifted students should be a priority, as a disservice exists, not only to the gifted students, but also to society (Karpinski, 2015). However, schools continue to fail to provide bright minds and future leaders the education they desire and deserve (Schultz, 2002). These students need

differentiated instruction in learning environments where they can collaborate with like-minded peers (Accariya, 2016). The absence of these learning conditions could result in underachievement in gifted students (Accariya, 2016).

The SCGM model addresses concerns which have been brought to the attention of previous researchers. The model provides gifted students with academic challenges while also meeting their affective needs (Brulles & Winebrenner, 2011). The design also requires specialized training for teachers (Brulles & Winebrenner, 2011). These elements are addressed in the literature review and research questions guiding this study and support the ideology behind the SCGM.

Characteristics of Gifted Students

There has been much debate over the definition of giftedness (Bakar, 2016; Henderson & Jarvis, 2016). To date, there is not a united definition of gifted (Hogrebe, 2015). Researchers and experts in the educational field have defined giftedness with various approaches (Accariya, 2016). Gifted students have been described as having high intellectual abilities and being more cognitively advanced than their same-age peers (Kakavand, Kalantari, Noohi, & Taran, 2017; Ritchotte et al., 2015; Snyder & Linnenbrink-Garcia, 2013). Nevo and Rachmel (2009) defined giftedness as being associated with exceptional academic achievement or high intelligence quotients.

Most identification methods recognize gifted students as those possessing "exceptional intellect and academic ability" (Wholuba, 2014, p. 3). Some gifted students have been identified in "areas of general intellectual abilities" (Teno, 2000, p. 47). However, Seedorf (2014) suggested, "The progression of identification of gifted and talented (GT) students has evolved from the rigid use of intelligence testing to examining

a body of evidence to show a student's gifted abilities and needs" (p. 248). Such abilities include learning at a faster pace, demonstration of high levels of mastery, and understanding high-level abstract concepts (Teno, 2000).

Gifted students exhibit unique but common traits (Bakar, 2016). These traits include a well-developed understanding of abstraction, conceptualization, and synthesis (Bakar, 2016). Reis and McCoach (2015) found insight, creativity, advanced interests, and sense of humor to be among common attributes of gifted students. Gifted students are flexible and fluent thinkers who use different problem-solving skills (Bakar, 2016). They hold the ability to easily identify similarities and differences and cause-and-effect relationships (Bakar, 2016). These distinct traits and characteristics require "various experiences" and an education to meet unique needs (Bakar, 2016; Rafatpanah, Seif, Alborzi, & Khosravani, 2016, p. 174).

Causes of Underachievement in Gifted Students

Underachievement occurs when academic performance falls well below ability level (Rosenberg, 2015b). Indicators of underachievement may include a high IQ score in combination with low grades and/or low achievement test scores or high achievement test scores in combination with low grades (Rosenberg, 2015b). Gifted learners frequently fail to perform to their ability levels (Chism, 2012). Post (2016) explained exhibition of underachievement in gifted students:

> Gifted underachievers vary in how they display their underachievement. They may exert just enough effort to coast through school, under the radar and ignored because of average or even below average grades. They become 'selective consumers' who choose to achieve only in classes they enjoy, or they may give

> up completely, perform poorly, fail or drop out. (Why does the gifted child struggle in school? section, para. 2)

Underachieving gifted students may retain one or more of the following characteristics: low self-esteem, depression, disruptive behavior, inattention, perfectionism, procrastination, disorganization, and social impairment (Post, 2016; Rosenberg, 2015b).

Underachievement in gifted students has "remained a mysterious concoction of factors" (Schultz, 2002, p. 206). As reported by Clinkenbeard (2012), "One of the most intriguing, and often frustrating, puzzles for those who study individuals with great intellectual and creative promise is why some bright students never reach the level of success of which they seem so capable" (p. 622). Researchers have revealed "some idea of *when* gifted students begin to underachieve, [but] *why* they underachieve remains unclear" (Ritchotte et al., 2014, p. 184).

There are several factors contributing to underachievement in gifted students (Schultz, 2002). Snyder and Linnenbrink-Garcia (2013) agreed, "Underachievement in gifted students is the result of complex interaction of factors including inappropriate academic curricula, social behavioral problems, learning problems and emotional problems" (pp. 221-222). Erisen, Sahin, Birben, and Yalin (2016) also acknowledged the challenges gifted students must overcome in school to be successful include emotional stresses, negative peer influence, and inadequate educational experiences. If the complex causes of underachievement develop in elementary school, the pattern continues into upper grades (Hoover-Schultz, 2005). Landis and Reschly (2013) confirmed dropouts can be predicted as early as the elementary grades based on attendance, academic performance, behavior, and attachment to school.

Fear of failure. Perfectionism is a character trait gifted students often possess (Merriman, 2012). Merriman (2012) explained, "Perfectionism can paralyze gifted students with fear of failure and reduce their academic self-efficacy, causing them to underachieve" (p. 5). Porter (2013) concurred, "Perfectionism is a trait common to gifted individuals that can lead to high performance levels, or to a total inability to perform because of fear of failure" (p. 32). Gifted students who strive to complete nothing less than perfect work often procrastinate to delay the possibility of failure (Rosenberg, 2015a). They have difficulty tolerating mistakes, criticism, or a less-than-perfect performance, thus hindering academic growth (Merriman, 2012).

Snyder and Linnenbrink-Garcia (2013) concurred, "To protect self-worth, individuals often engage in various coping mechanisms, such as academic self-handicapping" (p. 214). These things considered, gifted students often have different perceptions of pressures and higher standards than "normal" students (Kakavand et al., 2017, p. 121). As gifted students become more challenged, some may avoid situations or withdraw from academics completely to protect their self-worth, thus resulting in underachievement (Batdal Karaduman, 2013; Snyder & Linnenbrink-Garcia, 2013). Gifted students fear undesirable outcomes, looking stupid, or being exposed, which often results in the decision to underachieve (Ritchotte et al., 2014).

Those who have not previously been challenged are not prepared to cope with increased challenges (Snyder & Linnenbrink-Garcia, 2013). When unchallenged, gifted students often complete assignments with ease, always experiencing success (Merriman, 2012). As the curriculum becomes more arduous, successes may not be as regular, feelings of not being smart enough set in, and an alternative is to stop trying (Merriman,

2012). These gifted students do not possess the coping skills to accept and overcome challenges; thus, they are hesitant to accept new ones (Merriman, 2012; Ritchotte et al., 2015). Gifted students who have not had opportunities to fail become aware of their inadequacies and realize they may not be successful in all areas (Post, 2016). Underachievement occurs when challenges increase and students do not have the coping strategies to manage; they self-handicap and withdraw from academic engagement (Snyder & Linnenbrink-Garcia, 2013). When fear of failing takes over, anxiety occurs, and gifted students may easily give up on demanding tasks (Post, 2016). According to Ritchotte et al. (2015), "The inability to successfully triumph when faced with a frustrating or difficult to solve challenge leaves students vulnerable to poor self-efficacy and consequently, underachievement" (p. 105).

Some students do not receive challenging work until they reach high school or college (Snyder & Linnenbrink-Garcia, 2013). By this point, students are not sure how to confront challenging material and instead withdraw or refuse to engage (Snyder & Linnenbrink-Garcia, 2013). Snyder and Linnenbrink-Garcia (2013) confirmed, "The affective consequences of the threat of failure, or *psychological cost value,* may be too high to continue engaging in academics" (p. 218). Rosenberg (2015a) recommended teachers provide relevant and constant challenges, providing opportunities for failure while focusing on the strengths of students.

Lack of motivation. Motivation is "the process whereby goal-directed activity is instigated and sustained" (Clinkenbeard, 2012, p. 622). Motivation includes the combination of choosing certain goals over others, working toward chosen goals, and perseverance, ultimately leading to success (Clinkenbeard, 2012). A fulfillment of

interest, satisfaction, and enjoyment can drive motivation (Garn & Jolly, 2014). Highly motivated students take initiative, are persistent, and are actively involved in the learning process (Wholuba, 2014).

Academic motivation is a compelling determining factor in the success of gifted students (Morosanova, Formina, & Bondarenko, 2015; Siegle, Da Via Rubenstein, & Mitchell, 2014). Not all gifted students have the drive to achieve academically (Siegle et al., 2014). Among other factors, lack of motivation is linked to underachievement in gifted students (Wholuba, 2014). Some gifted students lack intrinsic motivation and are not willing to challenge themselves (Merriman, 2012). Motivation levels vary and are dependent upon the following factors: (1) perception of success upon completing a task, (2) the outcome, (3) value placed on the task, and (4) how useful and important the task is in relation to not doing the task (Clinkenbeard, 2012).

Most gifted students achieve in a variety of tasks, but underachieving gifted students are less inclined to engage in tasks of no interest or tasks they find to be too easy (Clinkenbeard, 2012). In a metaphorical study conducted by Erisen et al. (2016), the results indicated "students' motivation levels positively correlated with their perceptions of school" (p. 559). Altintas and Ozdemir (2015) suggested, "There exists negative motivation in learning academic lessons in addition to the deficiency of students' attention, without the enrichment and differentiation approaches that are aimed at adding richness and differences to academic lessons" (p. 200).

Ritchotte et al. (2014) explained a three-factor model for understanding motivation in students first proposed by Eccles and Wigfield in 1995 as goal valuation. A strong predictor of underachievement is low goal valuation (Ritchotte et al., 2014).

Ritchotte et al. (2014) further explained, “Goal valuation… is believed to lay the groundwork for increasing motivation in gifted underachievers” (p. 185). In the absence of goal valuation, motivation could potentially be lacking (Ritchotte et al., 2014).

Eccles and Wigfield (1995) theorized students become motivated to engage in tasks in which they find value. There must be an interest level in a task (intrinsic value), a perception of the importance of doing well (attainment), and a relation to future goals (utility) (Ritchotte el al., 2014). Students must “first value the goals of school before they can become motivated to achieve” (Ritchotte et al., 2014, p. 185).

To close the gap between potential performance and actual performance, teachers of gifted underachievers must identify motivators and support students through academic and affective teaching strategies (Cavilla, 2015). Motivation is increased when students receive “innovative and diverse instruction methods” that encourage creativity and present challenges (Accariya, 2016, p. 101). When compared to other less effective methods, students feel frustration, eradicating their motivation to learn (Accariya, 2016). This results in negative attitudes toward school, learning, and teachers (Accariya, 2016).

Teachers must understand the concepts behind student motivation (Bembenutty, 2012). Teachers have a “powerful influence” on student motivation (Bembenutty, 2012, p. 190). Educators who raise expectations and establish an understanding of value in assignments are more likely to increase students’ motivation (Siegle et al., 2014). Teachers who understand the expectancy-value theory can provide learning experiences which are meaningful, spark interest, and bring value and relevance to learning (Bembenutty, 2012).

Value of academics. Previous researchers postulated a lack of motivation or value of academics results in underachievement of gifted students (Snyder & Linnenbrink-Garcia, 2013). Rubenstein et al. (2012) found task value to be "the most effective in reversing underachievement patterns" (Siegle et al., 2014, p. 42). Cavilla (2015) asserted students need to detect value and relevance. When students are not provided "adequate reasoning" by educators explaining the value of an assignment, a decrease in motivation and engagement can occur (Egbert & Roe, 2014, p. 251).

Peters (2012) referred to the expectancy-value theory, theorizing even if students can do well on a task, they are less likely to engage unless there is some degree of value. Allan Wigfield, in his interview with Bembenutty (2012), explained the expectancy-value theory as dealing with "motivational influences on individuals' performance on different achievement activities and their choices of which activities to pursue" (p. 186).
In addition, learning activities coordinated with personal goals add meaning (Garn & Jolly, 2014).

Components of achievement motivation include competence beliefs and value-related beliefs (Snyder & Linnenbrink-Garcia, 2013). Gifted students spend time completing work they find to be boring or useless, such as "busy work," which is perceived to have low value in academics (Snyder & Linnenbrink-Garcia, 2013, p. 216). Curricula heavy with tedious "busy work" may result in lower perceived value of academic work for gifted students (Snyder & Linnenbrink-Garcia, 2013, p. 216). Ritchotte et al. (2014) established the following:

> Students who value academic goals are motivated to engage in academic tasks and to achieve their full potential. Conversely, students who do not see intrinsic,

> attainment, or utility value in academic goals have no reason to put forth the effort to achieve academically. Attainment value has been found to be low among gifted female underachievers, in particular. (p. 185)

If students do not value or see a point in what is being taught (content) or a reason for achievement in a certain area (relevance), they are prone to underachievement despite the effectiveness of the teaching style (process) (Peters, 2012).

Curriculum and class setting. Vogl and Preckel (2014) found curriculum and class setting are important factors in achievement and stated, "Academic achievement and learning progress depend on the fit of the learning environment to the specific needs of the individual learner" (p. 51). To prevent "motivational, emotional, and social" problems, gifted students require a challenging learning environment with their intellectual peers (Vogl & Preckel, 2014, p. 51). Gifted students who learn under these conditions continue to display an interest in school and learning (Vogl & Preckel, 2014).

One of the barriers gifted students often experience is an unchallenging curriculum (Garn & Jolly, 2014; Snyder & Linnenbrink-Garcia, 2013). Gifted students often find themselves sitting in classrooms with teachers catering to average and below average students and "wait, bored and under-challenged, for their age-mates to master the curriculum" (McMath, 2016, p. 1). When gifted students are presented with inadequate curriculum and instruction, undesirable behaviors may occur (Hollyhand, 2013).

Ultimately, school curriculum conflicting with the academic needs of gifted children can result in underachievement (Snyder & Linnenbrink-Garcia, 2013). Ritchotte et al. (2015) stated, "An unchallenging middle school curriculum may intensify gifted students' boredom, leading to academic underachievement" (p. 105).

Gifted underachievers become frustrated with easy tasks, as they crave a challenge (Snyder & Linnenbrink-Garcia, 2013). When courses are not appropriate or the instructional needs of gifted learners are not being met, they feel they are completing required "busy work" or become frustrated with "assignments they perceived to be meaningless and below their ability level" (Landis & Reschly, 2013, p. 237). Peters (2012) validated:

> Even if a student truly enjoys a given topic, values it highly, and is very skilled at it, if that topic is presented at far lower levels than at which the student is ready, the perceived value is likely to be negligible. Still, because this student has potential but is not performing, common definitions would call him an underachiever. (p. 178)

The frustration continues when gifted students are expected to complete additional work rather than appropriately challenging work (Snyder & Linnenbrink-Garcia, 2013). Students who experience decreased challenges may be pushed further toward underachievement (Snyder & Linnenbrink-Garcia, 2013).

Snyder and Linnenbrink-Garcia (2013) also confirmed the following to be true when gifted students are provided with educational experiences not appropriate for their high learning potential:

> Gifted adolescents view school work in typical classes to be more of a burden than schoolwork in gifted classes, reporting difficulties with teacher expectations that are too high, lack of recognition from teachers for good performance and having to carry a heavier burden in group work. (p. 221)

With varying levels of cognitive abilities grouped in one classroom, differentiation is imperative (van Donkergoed, 2016). When gifted students are forced into a classroom which lacks differentiation and in which their needs are not being met, they become "bored with school" (Hoover-Schultz, 2005, p. 49). Common reactions to an unchallenging curriculum are feelings of boredom and disengagement, ultimately leading to underachievement (Ritchotte et al., 2014). Boredom is a primary contributing factor to underachievement among gifted students and to the potential risk of dropping out (Landis & Reschly, 2013).

Class setting and social environment have a role in the learning process (Accariya, 2016). Gifted students who are placed in a class setting with their intellectual peers have more significant learning opportunities than those who are not (Accariya, 2016). Accariya (2016) further explained, "A positive atmosphere increases enjoyment, provides support and acceptance and gives students opportunities for peer learning and higher achievement" (p. 98).

When such learning environments are nonexistent, gifted children may begin to feel isolated and unaccepted, thus hindering them from achieving their potential (Accariya, 2016). Further, a supportive learning environment is one which focuses on providing gifted students with meaningful choices of interest, encouragement, and inclusion (Garn & Jolly, 2014). When a classroom environment is comprised of "positive social and academic organization," positive attitudes toward school and learning are present (Moreira, Bilimoria, Pedrosa, & De Fatima Pires, 2015, p. 362).

Attitudes toward school and learning. Gifted students often experience monotonous work below their capabilities, lack of intellectual peer interaction, and are

bored (Merriman, 2012). As gifted students become bored, they disengage, resulting in behavior issues or underachievement (Merriman, 2012). Snyder and Linnenbrink-Garcia (2013) confirmed, "It is possible that success in a very easy curriculum may not foster personal or attainment value for academics, as gifted underachiever students report feeling very detached from academics" (p. 217).

Gifted underachievers report low levels of interest in academics, resulting in negative attitudes toward school (Batdal Karaduman, 2013; Snyder & Linnenbrink-Garcia, 2013). These attitudes toward school intensify in middle school (Post, 2016; Ritchotte et al., 2015). Post (2016) suggested:

> An accumulation of apathy and disrespect for the system, built up after years of boredom, frustration, and feeling that their intellectual needs were never understood, appreciated or challenged. School may seem boring and pointless, and they may refuse to consider any possible benefits it could offer. (A perfect storm: Middle school section, para. 2)

Teachers who differentiate address the unique qualities of all students in the classroom and provide lessons applicable to individual needs (Altintas & Ozdemir, 2015). An increase in achievement takes place when differentiation is present in the classroom (Altintas & Ozdemir, 2015). According to Post (2016), "Without the necessary complexity, depth and pace of learning, without like-minded peers, and without teachers who are trained to understand and teach gifted children, they quickly lose interest in learning, and disrespect their teachers and school culture" (para. 4).

Social norms. Gifted students often experience conflict between the need for academic achievement and need for social acceptance (Chism, 2012). One of the

challenges gifted students often cope with in school is peer relations (Erisen et al., 2016). Marwaha (2015) endorsed, “Intellect of an individual is different from social skills” (p. 27). Individuals with higher IQs often lack social skills, resulting in the “inability to fit in socially” (Marwaha, 2015; Morisano & Shore, 2010, p. 251). They can often be “misunderstood by their peers’ (Erisen et al., 2016, p. 554). The lack of social skills often results in feelings of alienation and loneliness (Erisen et al., 2016). Hoover-Schultz (2005) supported previous research and stated, “Underachieving students often report peer influence as the single most important force blocking their achievement” (p. 47).

Highly intellectual students often experience feelings of separation and isolation (Chism, 2012; Porter, 2013). Gifted students “want to conform to the norm” (Merriman, 2012, p. 22) and often feel as if they do not belong with same-aged peers (Ritchotte et al., 2015). They experience “peer pressure to conform to ‘regular’ norms, to ‘be like everyone else’” (Batdal Karaduman, 2013, p. 169). With the presence of a strong desire to “fit in,” gifted students may “dumb themselves down” for popularity purposes (Post, 2016, para. 3). The pressures to conform and desire to fit in result in high-potential children never fully developing their abilities, “because they are not challenged but are instead captured by the potent messages from their peer culture to avoid work and be like everyone else” (Morisano & Shore, 2010, p. 256).

Role of Teachers

Motivation and achievement of students are influenced by external factors which include school, home, and peers (Siegle et al., 2014). In a study conducted by Siegle et al. (2014), students in a focus group discussed home and peers; however, “teachers were the determining factor in whether students did their best or just enough to get the grade

they wanted" (p. 44). Khalil and Accariya (2016) concurred, "The most important factor influencing the gifted student's academic success is the teacher" (p. 407). Teachers have a "crucial effect" on the educational experiences of gifted students (Ozcan, 2016, p. 131). Therefore, preparing teachers for their roles in the education of gifted students is essential (Ozcan, 2016).

Researchers have found gifted students prefer certain characteristics in their teachers such as empathy, rapport, and the willingness to listen (Siegle et al., 2014). Teachers of the gifted need to have a positive view of gifted students, enjoyment in teaching and interacting with high-ability learners, and a desire and willingness to advance their own teaching abilities (Shellenbarger, 2014). In addition, since gifted students are advanced academically, Siegle et al. (2014) asserted, "Effective teachers of gifted students are confident in their abilities" (p. 37). The use of diverse teaching strategies by ardent teachers increases motivation in gifted students (Siegle et al., 2014). Having teachers who care and understand gifted students is important (Clinkenbeard, 2012). The center of concern for educators should be the whole child, since IQ alone does not equate to success (Marwaha, 2015). Other factors playing a role in success include emotional and social intelligence (Marwaha, 2015).

As stated by Szymanski and Shaff (2013), "Teachers can provide opportunities for students to develop academic aptitudes if they understand student needs and how to modify curriculum and instruction to meet those needs" (Background section, para. 12). Teachers are fundamental in encouraging students of "diverse educational levels" by devising teaching strategies to flourish student competencies (dos Reis Taucei et al., 2015, p. 2263). Teachers who recognize the unique talents and needs of gifted students

and adapt in order to meet those needs are considered ideal teachers for gifted students (Accariya, 2016). Ideal teachers equip themselves with appropriate tools to create learning environments for gifted students not only to meet cognitive needs, but also social and emotional needs (Accariya, 2016). Accariya (2016) described an effective teacher:

> They will be authorities in their field, acquainted with the many learning and teaching styles, demonstrate originality and creativity, be fluent and skilled in rhetoric, and be able to manage "learning situations." Pedagogically, they furnish a personal example to their students, and guide, advise, and encourage the development of intellectual curiosity and learning motivation among their students. (p. 99)

Teachers who have gifted students in their classrooms "must have a positive attitude towards excellence…; enjoy working with students who require constant challenge and innovation; [and] be willing to adapt themselves to the social and emotional needs, and accomplishments of their students" (Accariya, 2016, p. 100).

In their research, Siegle et al. (2014) discovered effective teachers "encourage student growth and satisfaction, … make the content meaningful and challenging, … shape students' perception of support in their environment through building positive relationships and being knowledgeable about content" (p. 35). In addition, a relationship of mutual respect between student and teacher is necessary for social and academic advancement (Accariya, 2016). Students who respect their teachers are more ambitious to learn and successfully apply themselves academically (Accariya, 2016). Findings from a focus group of gifted students in a study conducted by Siegle et al. (2014)

confirmed students are inspired by teachers who care and establish meaningful relationships, know the students personally, and have a sincere interest in student success.

Teacher perceptions of gifted students. Teachers often have a perfunctory understanding of the characteristics and needs of gifted students in their classrooms (Szymanski & Shaff, 2013). The outcome of the development of talents in gifted students is dependent upon the teachers' discernment of giftedness (Szymanski & Shaff, 2013). Moon and Brighton (2008) further explained the consequences of having misconceptions of gifted students:

> In this way, *whether* a primary grade student receives support to develop his or talents, and *how* his or her talents are developed will depend in large measure on how that student's teacher conceptualizes giftedness in young children, including those from diverse backgrounds. (p. 449)

In their research, Moon and Brighton (2008) found teachers often have the misconception gifted students "learn quickly and easily" (p. 461). Relying upon their own beliefs about giftedness, "teachers often correlate giftedness with academic ability and/or achievement" (Hollyhand, 2013, p. 32).

While the assumption is that gifted students achieve at high levels, in truth, many "struggle in school" (Hogrebe, 2015, p. 1). Further, researchers have found possessing high abilities does not warrant success (Karpinski, 2015). Underachievement in gifted students is often neglected, because uninformed educators mistakenly believe "being gifted guarantees high success" (Erisen et al., 2016, p. 554). In addition, gifted students who have a great deal of energy or who have difficulty remaining focused and in their seats, are often not identified (Moon & Brighton, 2008).

Teachers' perceptions regarding expected behaviors influence achievement (Hollyhand, 2013). These false ideas have an impact on the educational experiences of gifted students (Moon & Brighton, 2008). Szymanski and Shaff (2013) summarized the impact of teachers who have misconceptions of giftedness:

> Thus, teachers who rely on their own understandings of giftedness may be at a disadvantage when interacting with students who do not conform to the teachers' expectations. Teachers with naïve beliefs about giftedness may fail to identify students using accepted criteria and instead indemnify students who conform to their expectations. (Background section, para. 3)

A lack of training in gifted education can have an impact on the perceptions teachers have of gifted students (Szymanski & Shaff, 2008). Teachers who receive insufficient training rely on their personal ideas and experiences, which are often invalid (Szymanski & Shaff, 2008). Szymanski and Shaff (2008) explained, "Using personal experience as a yardstick by which to measure giftedness could create barriers for identifying and serving diverse gifted learners" (Teachers use personal beliefs section, para. 1).

The paucity of knowledge can affect perceptions and fundamentally affect behaviors (Hollyhand, 2013; Ozcan, 2016). Ozcan (2016) explained, "Hence the perception of gifted children and their education and the behaviors of teachers towards these students are affected by negative attitudes about intellectual intelligence" (p. 126). Since teachers are an important factor in the development of gifted students, their mistaken beliefs due to lack of knowledge must be considered (Ozcan, 2016). Gifted students can be negatively academically, socially, and emotionally affected by teachers' deficient knowledge about gifted education (Ozcan, 2016).

Teachers have been noted to "show unconscious negative attitudes towards gifted students" (Khalil & Accariya, 2016, p. 408). These negative stereotypes have resulted in teachers' preference of average students (Henderson & Jarvis, 2016). Dos Reis Taucei et al. (2015) confirmed some teachers find it difficult to work with gifted students. Participants in a study conducted by Ozcan (2016) stated reasons teachers are reluctant or find it difficult to work with gifted students:

> 'They think intensive and quick, so it can be difficult to meet their needs …' 'They are bored quickly so teachers have to be dynamic to make lessons interactive,' 'These children have difficulty with their peers, and struggle greatly in their social areas,' and 'They behave like a leader in group studies, so this causes problems in the classroom.' (p. 131)

Teachers find it difficult to work with gifted students for both cognitive and affective reasons (Ozcan, 2016).

Lack of motivation of gifted students is often frustrating and concerning for teachers (Cavilla, 2015; Rubenstein et al., 2012). Uninformed teachers may place "unrealistically high expectations" on gifted students and become frustrated when students do not perform at high levels (Post, 2016, para. 5). According to dos Reis Taucei et al. (2015), "It is fundamental that education professionals perceive the need to treat and educate each student as being unique, considering their individual interests, abilities, learning styles and forms of expression" (p. 2271). In a study conducted by Karpinski (2015), a gifted student participant performed well in subjects of interest and became disconnected and unengaged in areas of no interest (Karpinski, 2015). This

resulted in teachers believing the participant was “distracted, lazy, and disorganized” (Karpinski, 2015, p. 20).

Gifted students are not usually considered “at risk for academic failure” (Rubenstein et al., 2012, p. 678). Teachers carry the misconception gifted students can make it on their own and need no additional support (Erisen et al., 2016; Ozcan, 2016; Post, 2016; Ritchotte et al., 2015; Tam & Phillipson, 2013). According to Rubenstein et al. (2012), “Although the students are gifted, they will not necessarily be successful without support” (p. 691). Unsupported gifted students may begin to underachieve and continue to do so, since teachers often have difficulty recognizing the “hidden characteristics” of underachievement (Morisano & Shore, 2010, p. 251).

For gifted students to receive educational experiences capable of meeting their special needs, the classroom teacher must possess the abilities to recognize those needs (Szymanski & Shaff, 2013). Perceptions teachers have of gifted student are often dependent upon individual experiences of both the teachers and the students (Szymanski & Shaff, 2013). Researchers have found links between the beliefs of teachers and certain characteristics they perceive portray giftedness (Hollyhand, 2013). In order to develop the skills needed to recognize and make appropriate recommendations, teachers need education and support (Szymanski & Shaff, 2013).

Understanding affective needs. Marwaha (2015) explained Emotional Intelligence (EQ) as “the ability to monitor one’s own and others’ feelings and emotions, to discriminate among them, and to use this information to guide one’s thinking and actions” (p. 27). Academic success is related to both IQ and EQ (Ebinagbome & Nizam, 2016; Marwaha, 2015). Marwaha (2015) concluded, “Emotional Intelligence holds

utmost importance to utilize, ameliorate and channelize the vital Intelligence Quotient for achieving success in academics" (p. 26). Emotional intelligence can influence students' academic performance (Ebinagbome & Nizam, 2016). Students with low emotional intelligence often "lack confidence, possess low self-esteem, lack self-control and have high anxiety," all of which can result in low performance in school (Ebinagbome & Nizam, 2016, p. 2).

Gifted students are entitled to an education appropriate to their academic, social, and psychological needs (Altintas & Ozdemir, 2015). Gifted students face emotional and social challenges more often than educators realize (Erisen et al., 2016). For educators to effectively meet the needs of gifted students, "it is vital to understand the emotional-social world of the gifted child" (Accariya, 2016, p. 98).

Educators have the propensity to nurture academic needs of gifted students but fail to recognize social and emotional needs (Accariya, 2016). When a deficiency in meeting social and emotional needs of gifted students is present, difficulties may arise (Accariya, 2016). When affective needs are ignored, gifted students often find it difficult to adjust and form relationships with peers, resulting in the display of undesirable behaviors (Accariya, 2016). To eliminate such behaviors, teachers should be "sensitive, concerned, understanding, encouraging, and supportive" (Accariya, 2016, p. 99).

Teachers who are attentive and involved should be able to easily identify the unique talents of gifted students in their classrooms and should encourage those talents in both academic and affective aspects (Accariya, 2016). A "good" teacher of gifted students demonstrates an awareness of individual needs (Accariya, 2016). Teachers who devote time and energy to students by listening to problems and displaying a sensitivity

to emotional, academic, and social needs increase motivation and academic achievement (Accariya, 2016).

A student participant in a study conducted by Rubenstein et al. (2012) stated he enjoyed "having someone actually listen to him and value his ideas" (p. 688). Teachers who believe in their students' abilities initiate conversations to encourage and assist when problems arise (Accariya, 2016). To students, this is often more important than academic achievement (Accariya, 2016). As a result, students acquire confidence, strengths are reinforced, and weaknesses are supported (Accariya, 2016).

Teachers who meet the affective needs of gifted students display affection, patience, and belief in the capabilities of their students (Accariya, 2016). They should "be willing to respond to various needs of the student, not just on an academic-intellectual level" (Accariya, 2016, p. 103). The Collaborative for Academic, Social and Emotional Learning (CASEL) has developed an awareness of the importance of affective development, suggesting without it, student abilities are restrained, thus not allowing students to reach their full potential (Cavilla, 2016).

Meeting the academic needs of gifted students. Due to the "specific and unique learning needs" of gifted students, they often encounter problems in the general educational system (Bakar, 2016, p. 55). Researchers have found gifted learners placed in mainstream classrooms view their educational experiences as being "too slow, full of repetitions, focused on memorizing instead of mastering the knowledge, and lacked opportunity to explore" (Bakar, 2016, p. 57). Educators can provide a "more favorable environment for gifted underachievers" by having smaller class sizes, using less conventional approaches to teaching, and allowing students more freedom and control of

learning (Hoover-Schultz, 2005, p. 48). Teachers who understand the academic needs of gifted students can "effectively plan curriculum, assessment, programs and provisions" appropriate for these needs (Henderson & Jarvis, 2016, p. 65).

Per Brulles and Winebrenner (2011), "Effective gifted programs ensure students' continual academic progress. With traditional grouping and teaching practices, gifted students often are those who are the least likely to experience academic growth in any given school year" (p. 38). Teachers of gifted students should be "capable of stimulating their students and developing their intellectual abilities" (Accariya, 2016, p. 99).

Effective teachers must customize learning by providing interesting and challenging activities designed to meet intellectual needs (Accariya, 2016; Heald, 2016). Gifted students require learning opportunities appealing to their curiosity and going beyond the required curriculum (Accariya, 2016). When presented with intriguing lessons, students are encouraged to learn (Accariya, 2016).

Past studies of underachievement focused on reversing the problem with behavior management, rewards, and punishment rather than "matching an appropriate education to the learners' needs" (Schultz, 2002, p. 208). Educators in the 1970s thought counseling, behavior modification, and reinforcement could reverse gifted underachievement (Schultz, 2002). More recent research has revealed teachers of gifted students should understand gifted attributes and provide appropriate instruction to emphasize challenging material and divergent and critical thinking (Brulles & Winebrenner, 2011). To ensure an effective learning environment for gifted students, teachers must be "proactive and creative" when preparing and implementing teaching strategies to meet the needs of these unique students (Bakar, 2016, p. 55).

In furtherance of meeting the needs of gifted students, teachers should be willing to "take risks and experiment with ways of sharing the learning process with students" (Accariya, 2016, p. 100). Teachers must feel inclined and able to "recognize different ability levels, learning styles, and areas of interest and plan their lessons accordingly" (Accariya, 2016, p. 100). Educators must have the knowledge and willingness to differentiate content and apply a variety of instructional strategies (Siegle et al., 2014).

Traditional approaches to teaching are often ineffective; therefore, teachers must differentiate instruction in order to "intensify the learning capacity of the gifted learner" (Bakar, 2016, p. 56). Some gifted students recognize differentiation taking place in the classroom; however, adjustments are typically made to accommodate the needs of lower-level learners rather than to meet the needs of gifted students (Siegle et al., 2014). School instruction often caters to average and below average learners, neglecting the needs of gifted students, thus culminating in underachievement (Hogrebe, 2015).

Meeting the unique needs resulting from the thinking and learning styles of gifted students requires an understanding of cognitive, social, and emotional development and a willingness to adjust curriculum and instructional methods (Accariya, 2016). Mevarech and Blass (1999) provided a list of qualifications teachers of gifted students should possess including the ability to properly identify learning levels, to provide learning opportunities which are interesting and challenging, to provide constructive feedback allowing the student to make adjustments to learning, and to cultivate motivation and self-esteem. Students who "built positive relationships with their teachers" and sensed

"their teachers were knowledgeable enough to teach them" felt they were in a supportive learning environment (Siegle et al., 2014, p. 41).

Professional development and training for teachers. In 2008, the Higher Education Opportunity Act was established to focus on teacher training and skills to meet the needs of students with special learning needs (Szymanski & Shaff, 2013). The act states:

> The term 'teaching skills' means skills that enable a teacher to employ strategies grounded in the disciplines of teaching and learning that focus on the identification of students' specific learning needs, particularly students with disabilities, students who are limited English proficient, students who are gifted and talented, and students with low literacy levels and the tailoring of academic instruction to such needs. (Higher Education Opportunity Act, 2008, p. 3132)

The law accentuates the requirement of teachers to possess special skills and training to meet the needs of learners with special needs (Szymanski & Shaff, 2013). However, teachers continue to enter classrooms with minimal training in gifted education (Szymanski & Shaff, 2013).

Teacher candidates lack crucial knowledge about gifted students to adequately meet their needs, often resulting in negative attitudes toward these high-ability students and programs designed to meet their needs (Ozcan, 2016). Educators often do not have the knowledge to properly recognize traits of gifted students and are ill-equipped to meet the needs of gifted learners due to the shortfall in training and preparation (Bergstrom, 2015). Colleges and universities continue to fail in preparing teachers to identify and

meet the needs of gifted students in classrooms (Assouline, Colangelo, & VanTassel-Baska, 2015).

The educational system places a greater focus on other "special populations" and "less interest in preparing teachers to support gifted learners" (Assouline et al., 2015, p. 43). While both low- and high-intellectual students require specialized approaches to learning, education dollars are mostly spent on students with below average IQs and not on the needs of high-ability students (Karpinski, 2015). Henderson and Jarvis (2016) concurred schools are applying their limited resources to the needs of below-average students. With nominal attention devoted to gifted learning, many teachers are entering classrooms with insufficient information related to gifted students (Assouline et al., 2015).

States require minimal references to gifted education for teachers in training. Only 14 states consider instruction for gifted students a priority (Assouline et al., 2015). A survey conducted by the Belin-Blank Center indicated 80% of the teachers' responses revealed they had no undergraduate training in gifted education (Assouline et al., 2015). Assouline et al. (2015) concluded, "Few teachers are prepared to identify and challenge gifted students" (p. 46). Szymanski and Shaff (2013) agreed, "Similarly, teachers who do not understand the cognitive, social, and emotional needs of gifted students may not believe that services are necessary to help these students develop their potential" (Background section, para. 12). Teachers are graduating from colleges and universities with minimal or no knowledge in gifted education (Henderson & Jarvis, 2016).

Professional development can "dispel teachers' misconceptions and negative attitudes towards gifted students" (Henderson & Jarvis, 2016, p. 65). Teachers who have

training in gifted education have more positive attitudes toward gifted learners, which results in positive outcomes for gifted students (Hollyhand, 2013; Ozcan, 2016; Shellenbarger, 2014). In addition, teachers with some training in gifted education use effective teaching strategies and better meet the needs of gifted students (Hollyhand, 2013).

Until gifted and talented education is a requirement of teacher training, gifted education will not be fully integrated into schools (Assouline et al., 2015). The nation has been challenged "to stop holding back its brightest students" (Assouline et al., 2015, p. 44). As reported by the National Association for Gifted Children (2015), 6% to 10% of the student population in schools across the country are identified as gifted. Consequently, three to five million students in the United States "rely upon effective and appropriate gifted education" (Hogrebe, 2015, p. 103). When the needs of gifted students are not met, "devastating consequences" can occur, impacting the student and society (Karpinski, 2015).

The responsibility of providing quality education for gifted students is placed upon the teacher (Satova, 2015). Siegle et al. (2014) concluded, "Students overwhelmingly attributed their interest and motivation to their experiences with their teachers" (p. 40). Teachers are important factors in the education of all students; therefore, it is imperative teachers are trained in meeting the needs of all students, including gifted learners (Assouline et al., 2015). Brulles and Winebrenner (2011) agreed teachers of gifted students should have specific training:

> Suggested training topics include: The Schoolwide Cluster Grouping Model, characteristics of gifted learners, identification procedures, social and emotional

> needs of gifted students, parent communication, differentiated instruction, formative and summative assessment practices, forming flexible learning groups, curriculum compacting, creating lesson extensions, creating tiered assignments, teaching holistic thinkers. (p. 43)

Special training is necessary for teachers to implement effective teaching strategies and meet the needs of gifted learners (Satova, 2015, p. 45). Without professional training in gifted education, "teachers are ill-equipped to understand, identify and provide for gifted students" (Henderson & Jarvis, 2016, p. 60).

Educators of gifted students need to teach more deeply, not more content (Merriman, 2012). They need to teach students *how* to learn (Merriman, 2012). Researchers have found teachers who receive more training in gifted education are better equipped to identify the characteristics and traits of gifted students (Szymanski & Shaff, 2013). Henderson and Jarvis (2016) suggested effective teacher training should be "ongoing, embedded in daily teaching practice, purposefully guided …, evidence based …, and be driven by the teacher's mindful and reflective approach to learning" (p. 74).

Teacher attitudes toward gifted learners can affect academic outcomes (Ozcan, 2016). According to Ozcan (2016), "To improve the attitudes towards giftedness, effective training implications that affect underlying, core beliefs are required" (p. 127). Researchers have found attitudes toward gifted students of teachers who have special training in both the affective and academic traits of gifted students are significantly affected (Szymanski & Shaff, 2013). However, in a study conducted by Szymanski and Shaff (2013), all teacher participants "expressed the opinion that they lacked sufficient training in working with gifted students and how to properly identify and support them in

the classroom" (Teachers experience differences in training section, para. 4). Moreover, the same participants asserted being confused regarding gifted characteristics (Szymanski & Shaff, 2013). In the absence of such training, teachers turn to their own perceptions of giftedness, which may limit their abilities to identify and meet the needs of these students (Szymanski & Shaff, 2013).

A necessity exists for teachers to understand the needs and learning styles of gifted children (Figg et al., 2012). Until teachers "make efforts to appropriately differentiate the curriculum, underachievement and unfulfilled potential will continue to be a problem in classrooms" (Figg et al., 2012, p. 57). Teachers have the power to embolden learning and must also be willing to differentiate instruction (Ozcan, 2016). However, through his study, Ozcan (2016) discovered teacher candidates lack knowledge regarding differentiation. Henderson and Jarvis (2016) advocated, "It is essential that we invest in the professional learning of teachers in gifted education" (p. 77).

Reversal Strategies

Recent research has been conducted to gain a better understanding of gifted underachievement (Rubenstein et al., 2012). However, research in intervention aimed at reversal is not as prominent (Rubenstein et al., 2012). Karpinski (2015) found, "Without intervention we risk wasting roughly half of our at-risk gifted children into academic and social apathy" (p. 21).

No one intervention will mitigate underachievement for all gifted students (Cavilla, 2015; Morisano & Shore, 2010; Ritchotte et al., 2015). According to Ritchotte et al. (2015), "To date, interventions aimed at reversing the underachieving behaviors of gifted middle school students have been inconsistent and inconclusive" (p. 103). The

school environment plays a role and should be carefully examined (Rubenstein et al., 2012). The curriculum and grouping of students may affect motivation and should be considered when creating interventions (Rubenstein et al., 2012).

The first step in reversing underachievement in gifted students is to identify and monitor students (Rubenstein et al., 2012). To be successful in doing this, educators need ongoing training "to understand what it means when a student underachieves, how to guide that student to ultimate success, and implement these approaches in the classroom" (Heald, 2016, p. 50). This may be difficult, since gifted underachievers do not always display characteristics of "usual at-risk categories" (Karpinski, 2015, p. 22). Additionally, adequate resources are not available to "identify a hidden troubled underachiever with high intelligence" (Karpinski, 2015, p. 21). Of high school dropouts, as many as 20% are gifted; therefore, early identification and interventions are imperative (Karpinski, 2015).

Commonly, underachievement is caused by more than one factor; therefore, to solve the problem, interventions at different levels must be considered (Post, 2016). Hogrebe (2015) stated, "In practice, high ability low achievers are often unidentified and therefore do not receive interventions to remediate their academic difficulties" (p. 2). Pre-service teachers do not receive the proper training to assist them in identifying and understanding gifted learners (Szymanski & Shaff, 2013). Bakar (2016) indicated, "Many of them [gifted students] have been wrongly diagnose [sic] and have received educational provision that is not supporting their learning needs" (p. 57).

Previous researchers revealed attempted approaches to reversing underachievement usually included one or more of the following:

> (a) working with parents to enhance self-esteem, (b) raising self-efficacy level, (c) elevating general psychological well-being, (d) improving work and study skills, (e) counseling, (f) early training in metacognitive skills, (g) subject and grade skipping, (h) increasing motivation, (i) individualizing goals within academic program. (Morisano & Shore, 2010, p. 251)

Furthermore, since dropout is a "process of disengagement and withdrawal that occurs over many years," interventions should begin early (Landis & Reschly, 2013, p. 224). Successful and engaging reversal programs focused on self-acceptance and on meaning and value in the curriculum produce opportunities for success (Rubenstein et al., 2012).

In a study regarding gifted students overcoming underachievement patterns, several factors that promote achievement were identified (Rubenstein et al., 2012). Rubenstein et al. (2012) identified among these factors are "outside interests, parents' approval and calm attitudes, more challenging and interesting classes, self-directed goals, and caring teachers" (p. 679). Positive outcomes result when implementing independent and authentic exploration as a reversal strategy (Rubenstein et al., 2012). This approach provides an opportunity for students to be involved in "interesting, independent, authentic projects" and gives students more control over the learning process (Rubenstein et al., 2012, p. 679).

Teachers and students also form deeper relationships when authentic, independent learning is implemented (Rubenstein et al., 2012). Through research focusing on the differences between gifted achievers and underachievers, the Achievement Orientation Model was developed (Siegle et al., 2014). This model includes components which may reverse underachievement and ensure students are engaged, motivated, have necessary

skills, find meaning in tasks, and are placed in a supportive environment (Siegle et al., 2014). Teachers who utilize the Achievement Orientation Model are building self-efficacy by acknowledging growth and offering encouragement, creating value in tasks by providing applicable content, and cultivating positive perceptions through the construction of effective classroom environments (Siegle et al., 2014).

Challenging curriculum. Snyder and Linnenbrink-Garcia (2013) suggested, "Underachievement should be reduced, and motivation enhanced, by placing the student in a challenging environment" (p. 209). Such an environment should include a curriculum emphasizing in-depth learning, critical thinking, and challenging content (National Association for Gifted Children, 2014). Educators of gifted students should have in place "a curriculum that promotes intellectual, creative, spiritual development of the child" (Satova, 2015, p. 46). For gifted students to gain an understanding of the effort necessary for high achievement, they need to be challenged (Clinkenbeard, 2012).

Researchers in the field of gifted education have corroborated provisions in three main areas need to be present: instructional management, instructional delivery, and curricular services (Seedorf, 2014). Seedorf (2014) acknowledged, "These three areas refer to the optimal environment for students based on individual need" (p. 249). In this model, students may work individually or in groups with same-age peers or intellectual peers (Seedorf, 2014). Instructional activities include individual or small group projects, self-instructed activities, hands-on activities, lectures, discussions, mentoring, pacing, and making necessary instructional modifications (Seedorf, 2014). Seedorf (2014) asserted, "GT [gifted and talented] students need a variety of instructional activities and learning

opportunities to stay engaged in the general curriculum. Modifying the process of learning is often the most effective method of keeping GT students engaged" (p. 249).

Both gifted educators and general education teachers need to differentiate to ensure appropriate content levels for all students regardless of ability levels (Seedorf, 2014). Students who have teachers who "empowered them" and "instilled a sense of pride in doing quality work" demonstrate professional growth and satisfaction in their educational experiences (Siegle et al., 2014, p. 44). These teachers are effective in changing the way students perceive the world by making real-world connections and developing the interests of students (Siegle et al., 2014).

Choices in learning. In their research on underachievement in gifted students, Morisano and Shore (2010) constituted, "It is imperative that children be encouraged and enabled to assume increasing responsibility for their own learning" (p. 256). Students are most productive when they are provided opportunities to select topics to investigate (Morisano & Shore, 2010). By allowing students to develop their own objectives, they can recognize their abilities and gain a better understanding of self (Morisano & Shore, 2010). Siegle et al. (2014) indicated the importance of teachers fostering autonomy and student ownership of learning and stated, "Students may value tasks in which they have more control" (p. 38). A focus on student interests can contribute to task value, ultimately influencing achievement levels (Siegle et al., 2014).

Figg et al. (2012), while researching selective consuming students and learning style preferences, concluded, "People learn more effectively when they can take advantage of their preferred ways of learning" (p. 56). Through his case study of two underachieving gifted students, Schultz (2002) ascertained, "Interest drives learning," and

students should be given choices in learning based upon interests and abilities in order to sustain their desires to be actively involved in the learning process (pp. 214-217). One of the participants in Schultz's (2002) study predicted fewer behavior problems would result if students were allowed to choose how to complete assignments. Choices in learning result in higher engagement levels (Garn & Jolly, 2014).

Self-regulated learning is "the degree to which students are metacognitively, motivationally, and behaviorally active participants in their own learning process" (Ritchotte et al., 2014, p. 185). Ritchotte et al. (2014) established the following:

> Self-regulation is a significant predictor of achievement. It consists of three components: (a) metacognitive strategies used to plan, monitor, and modify cognition; (b) management and effort control on academic tasks; and (c) cognitive strategies used to learn, remember, and understand academic material. (p. 185)

Self-regulated learners "proactively direct their behavior to achieve goals" (Hogrebe, 2015, p. 84).

Students who are granted the freedom to self-regulate their own learning seek information and implement strategies for mastering it (Ritchotte et al., 2014). Ritchotte et al. (2014) asserted, "Self-regulated learners set realistic goals, organize, self-monitor and self-evaluate" (p. 185). They see intrinsic value and possess high levels of self-efficacy (Ritchotte et al., 2014). By allowing students to self-regulate their learning at an early age, academic achievement is positively impacted (Hogrebe, 2015).

Active engagement. Student engagement involves active participation in school and commitment to learning (Landis & Reschly, 2013; Moreira et al., 2015). Active engagement involves students choosing how they will engage and the benefits they desire

from their educational experiences (Nelson, 2017). Landis and Reschly (2013) further explained, “Engagement is thought to be the key variable in understanding, predicting, and preventing high school dropout” (p. 225).

Disengagement becomes apparent in older students and can result in “an array of maladaptive or antisocial behaviors” (Nelson, 2017, p. 2). The effectiveness of student learning can be inhibited by student disengagement (Egbert & Roe, 2014). Nelson (2017) found, “The ramifications of disengaged students are costly and extensive at any level” (p. 1). Low engagement in school can lead to reduced academic performance and even school dropout (Henry, Knight, & Thornberry, 2012; Moreira et al., 2015). However, with positive links to academic achievement, engagement is important when intervening with students who are at a potential risk of underachieving (Landis & Reschly, 2013). Active engagement in school can produce positive results (Hoffman, 2017). With an absence of participation, school success, and identification, students begin to physically withdraw from school (Landis & Reschly, 2013).

Unfortunately, many schools still adhere to traditional teaching methods “emphasizing the passive absorption of the contents taught” (dos Reis Taucei et al., 2015, p. 2264). Rubenstein et al. (2012) noted, “Classroom engagement and meaningfulness are important ingredients to academic success” (p. 685). Regrettably, teachers admit time limitations put restraints on providing relevant and challenging content for individual students (Rubenstein et al., 2012).

Clustering. Pullout instruction is beneficial, but alone this type of instruction does not meet the needs of gifted students on a daily basis (Brulles & Winebrenner, 2011). Brulles and Winebrenner (2011) affirmed, “When pullout programs represent the

sole source of gifted services, classroom teachers may become more complacent about challenging gifted students when in their homeroom classes" (p. 37). By clustering gifted students, the group receive all instruction in one regular classroom (Teno, 2000).

Clustering takes place when four to 10 gifted students are grouped depending upon abilities and achievement levels (Brulles & Winebrenner, 2011). Teno (2000) expressed, "With cluster grouping, all gifted students at a grade level are assigned to one classroom because of similar learning needs" (p. 44). Teachers of gifted clusters must have specific training on instruction for gifted students (Teno, 2000). Effective gifted cluster teachers accelerate, compact, enrich, allow independent studies, use flexible grouping, and consistently use formal and informal assessments (Brulles & Winebrenner, 2011). The class is structured using the Most Difficult First model, which allows students to opt out of previously mastered content (Brulles & Winebrenner, 2011). Furthermore, classroom teachers who have gifted clusters in their otherwise heterogeneous classrooms are expected to provide differentiated learning activities (Brulles & Winebrenner, 2011).

Brulles and Winebrenner (2011) endorsed numerous advantages of cluster grouping. Teachers of gifted clusters are expected to learn strategies beneficial to gifted students but effective with all students (Brulles & Winebrenner, 2011). Clustering ensures gifted students receive appropriately challenging curriculum and instruction (Brulles & Winebrenner, 2011). Clustering provides a learning environment containing the elements of a successful gifted program such as intellectual peer interaction, flexible grouping, differentiation of curriculum and instruction, continuous academic progress, and continued support services for teachers with specialized training in gifted education

(Brulles & Winebrenner, 2011).

Brulles and Winebrenner (2011) posited, “Gifted students’ achievement increases when gifted students learn together” (p. 38). An underachieving gifted student interviewed by Schultz (2002) in a phenomenological study confirmed gifted students learn better when grouped together, stating, “I find it easy to work with others in Honors English, probably because I am with people of approximately the same ability level” (p. 216). Clustering provides gifted students with opportunities for acceleration and interaction with intellectual peers (Brulles & Winebrenner, 2011).

Freeman and Guenther concurred students of higher abilities not grouped with intellectual peers have difficulty adapting with few learning opportunities to develop their full potential (as cited in dos Reis Taucei et al., 2015). When placed in heterogeneous classrooms where different learning levels are present, gifted students often find themselves waiting for their classmates (dos Reis Taucei et al., 2015). They may quickly become annoyed and bored, resulting in loss of interest in school (dos Reis Taucei et al., 2015).

When grouped with their intellectual peers, gifted students take more academic risks, challenge each other, and are driven to achieve more highly (Brulles & Winebrenner, 2011). Brulles and Winebrenner (2011) reported, “When gifted students feel understood and accepted by their classroom teachers they are more likely to challenge themselves academically and feel more comfortable and confident when learning with like-ability peers” (p. 38). Gifted students who are in a cluster group “engage in meaningful and productive learning experiences” (Brulles & Winebrenner, 2011, p. 39).

Although pullout programs meet the needs of gifted students on a part-time basis, these high-ability learners' needs should be addressed every day (Heald, 2016). Clustering provides full-time attention to gifted students' learning needs (Brulles & Winebrenner, 2011). Brulles and Winebrenner (2011) revealed, "Although all teachers still have heterogeneous classes, the student achievement range in each class is slightly narrowed, which facilitates effective teaching" (p. 39). Besides being an "effective and consistent gifted service," clustering provides gifted students with challenging learning experiences and meets their needs without placing constraints on the budget (Brulles & Winebrenner, 2011).

Summary

Gifted students are those with high intellectual potential (Snyder & Linnenbrink-Garcia, 2013). However, not all gifted students perform to their high abilities (Morisano & Shore, 2010). Thus, underachievement in gifted students is a problem affecting both underachieving gifted students and society (McMath, 2016; Tsai & Fu, 2016).

Researchers have concluded numerous significant factors exist in the underachievement of gifted students (Schultz, 2002). These factors cannot be ignored for gifted underachievement to be reversed (Rubenstein et al., 2012). Several strategies are available and used in the reversal process; however, reversal begins with monitoring and understanding the gifted underachiever (Rubenstein et al., 2012).

Teachers play significant roles in student success (dos Reis Taucei et al., 2015). Teachers of gifted students must recognize the special needs of these students, and they must be willing to adapt the curriculum to challenge students and meet their needs (Accariya, 2016). To effectively meet the needs of gifted students, educators must

receive special training (Henderson & Jarvis, 2016; Satova, 2015). Teachers who receive such training can more effectively implement underachievement reversal strategies (Morisano & Shore, 2010). Gifted students need challenging curriculum and teaching approaches to change their educational experiences and prepare them for challenges they may encounter in the future (Bakar, 2016). Educators must provide opportunities that allow gifted students to "realize their potential and accomplish dreams" (Karpinski, 2015, p. 22). By providing high-ability learners with educational experiences which meet their needs, "We cannot only make a marked difference in their lives but also enrich the world as they become inspired to share their gifts and talents with us all" (Karpinski, 2015, p. 22).

In Chapter Three, the research design and methodology used for this study is discussed. An overview of the population and sampling methods used to determine participation is explained. The instrumentation used in this study is thoroughly elucidated. The development of the instrument is described, and an explanation linking each survey question to one of the three research questions is provided. Finally, the methods used for data collection and analysis are expressed.

Chapter Three: Methodology

Researchers have become intrigued, yet frustrated, in their attempts to discover why some students never reach the level of success to match their capabilities (Clinkenbeard, 2012). Underachievement in gifted students is a problem and a potential loss to students and society (Ritchotte et al., 2015; Siegle et al., 2014). Researchers have revealed this issue of underachievement stems from a problem within the educational system (Schultz, 2002). Teachers have misconceptions of gifted students and may not be properly trained to meet the needs of those students (Govan, 2012).

The problem can be solved by recognizing the needs of gifted students and implementing strategies resulting in a greater percentage of achieving gifted students who can benefit society (Brulles & Winebrenner, 2011). Bakar (2016) concurred, "Gifted individuals are the assets of any nations and civilizations; hence, society will always benefit from the offering of these individuals" (p. 56). Erisen et al. (2016) acknowledged, "The issue of developing the potential of giftedness into active contribution to society is the concern for administrators in national education" (p. 554). Educational programs are responsible for the possibility of gifted students becoming contributors to society (Erisen et al., 2016).

Problem and Purpose Overview

Gifted students have special needs which must be met so they may experience academic achievement in school (Khalil & Accariya, 2016; Ozcan, 2016). However, researchers have proclaimed the educational needs of gifted students are not being met (Brulles & Winebrenner, 2011). High-ability students may represent 7% to 10% of the entire school population, but the probability their educational needs are being

accommodated is much lower than for low-achieving students (Brulles & Winebrenner, 2011).

A common misconception exists gifted students will self-sustain academically (Govan, 2012). Although a proven misconception, educators continue to believe since gifted students have the abilities to succeed, they will, even in the absence of interventions or assistance (Govan, 2012). An apparent problem occurs when the educational system places importance on meeting the needs of lower-achieving students while failing to meet the needs of high-achieving students (Brulles & Winebrenner, 2011).

High-achieving students are not receiving education appropriate for their academic needs (Batdal Karaduman, 2013). A school curriculum conflicting with the academic demands of gifted students can result in underachievement (Snyder & Linnenbrink-Garcia, 2013). A curriculum lacking differentiated and individualized instruction does not meet the needs of gifted students (Batdal Karaduman, 2013). Schultz (2002) concluded, "They [gifted students] are not underachieving. Rather, schools are underachieving in providing educational opportunities for these bright, yet unengaged individuals" (p. 220).

To meet the needs of gifted students and provide an educational experience in which they will excel, general education teachers need to have an understanding of academic and affective needs of these students (Satova, 2015). Although gifted underachievers present a potentially devastating loss to society, educators generally do not perceive this group as being "at risk" (Ritchotte et al., 2015, p. 183). Ritchotte et al.

(2015) suggested, “Gifted underachievement… can be viewed as a chronic phenomenon, one that most likely will not fix itself without appropriate interventions” (p. 183).

The purpose of this study was to determine if a difference exists between achieving and underachieving gifted students’ perceptions of their own educational experiences in the regular education classroom and of their attitudes toward school. Data were analyzed to compare the perceptions of achieving and underachieving gifted students regarding their educational experiences and attitudes toward school. Additionally, the researcher determined if teachers believed they are properly trained to meet the needs of gifted students in their classrooms.

Research Questions and Null Hypotheses

The following research questions guided the study:

1. What is the difference in the perceived value of educational experiences in the regular education classroom between achieving and underachieving gifted students?

$H1_0$ There is no difference in the perceived value of educational experiences in the regular education classroom between achieving and underachieving gifted students.

2. What is the difference in attitudes toward school and learning between achieving and underachieving gifted students?

$H2_0$ There is no difference in attitudes toward school and learning between achieving and underachieving gifted students.

3. What are the perceptions of regular education teachers in regard to meeting the needs of gifted students in their classrooms in the following areas: social and emotional, academic, and training and professional development?

Research Design

Quantitative research methods objectively provide data analyzed and measured to assist educators in achieving goals (Creswell, 2014). The research method most appropriately answering the research questions and providing the most useful data should be utilized (Ary, Jacobs, Sorensen, & Walker, 2014). The quantitative method used in this study allowed the researcher to use surveys to collect close-ended data which were then analyzed and transformed into numerical data for descriptive purposes, comparison of groups, and demonstration of relationships between variables (Creswell, 2014).

Through student surveys, perceptions of educational experiences and attitudes toward school and learning of both achieving and underachieving gifted students were compared. The data collected using quantitative methods in this study statistically showed the differences in educational experiences and attitudes toward school between achieving and underachieving gifted students. Quantitative methods were also used to collect data from teacher surveys relating to perceptions of adequate preparation to meet the needs of gifted students.

To further enhance and validate the data collected through quantitative methods, data were collected through open-ended questions included on the teacher surveys. The data were analyzed for further theme development and to show relationships between themes (Creswell, 2014). The open-ended questions included on the teacher surveys provided an opportunity for the teacher participants to further explain their perspectives.

Ethical Considerations

To assure confidentiality and anonymity of the participants, safeguards were established throughout the data collection and analysis phase of the study.

To assure confidentiality. All data and documents are secured in a locked file under the supervision of the researcher. All electronic data and documents are saved in electronic files protected by a password on a personal computer on a secured site. All documents and files will be destroyed three years from completion of the research project.

To assure anonymity. Student surveys (see Appendix A) were administered by a third-party examiner. Data codes were used to lessen the possibility of identifying participants. Teacher surveys (see Appendix B) were electronically sent to building principals who were asked to forward the study information to the participants.

Overall. Each teacher participant received an Informed Consent form (see Appendix C), which described in detail the purpose of the research, any possible risks, and the opportunity to opt out of the study at any time without negative effects. Each student participant received an Assent to Participate in Research form (see Appendix D), which described the purpose of the research, any possible risks, and the opportunity to opt out of the study at any time without negative effects. Parents of each student participant received an Informed Consent from Parent form (see Appendix E), which described in detail the purpose of the research, any possible risks, and the opportunity to opt out of the study at any time without negative effects.

Population and Sample

The research site was a public school district in a town in southwest Missouri. The town was home to 26,000 residents, 5,776 of whom attended school in grades pre-kindergarten through 12 (Proximity, 2016). The school served 251 of those students in a gifted program (Proximity, 2016). The district served 2,000 students in grades four

through six in seven elementary and middle school buildings (Missouri Department of Elementary and Secondary Education [MODESE], 2016). Of those students, approximately 75 (4%) attended the gifted program.

The population represented in the study consisted of gifted students in fourth through sixth grades within the selected school district. For students to be considered gifted, they met the criteria of the gifted program of the district. To qualify for the gifted program, students needed an IQ score of 128 or higher. Within the selected district, approximately 75 students had been identified as gifted in fourth through sixth grades. Of the 75 students, approximately 5% were Asian, 1% was African American, 5% were Hispanic, 1% was Indian, 88 were Caucasian, 59% were male, and 41% were female.

At the elementary and middle school levels, grades kindergarten through six, the district employed 384 certified staff (MODESE, 2016). Approximately 130 certified teachers teaching first- through sixth-grade regular education accounted for 33% of the certified staff employed by the district. The teacher population represented in the study were general education teachers teaching first through sixth grades in the selected school district. Approximately 130 certified teachers in the population were eligible for participation.

The sample size was 30-75 students and 20-130 certified teachers. A minimum of 30 gifted students and 20 certified teachers were required for this study. The sample size increases the validity of the results (Fraenkel, Wallen, & Hyun, 2015). Fraenkel et al. (2015) suggested, “Researchers should try to obtain as large a sample as they reasonably can” (p. 102).

For this study, purposeful sampling was used. Purposeful sampling is a method which "involves identifying and selecting individuals or groups of individuals that are especially knowledgeable about or experienced with a phenomenon of interest" (Palinkas et al., 2015, p. 533). Mertens (2015) explained researchers "select their samples with the goal of identifying information-rich cases that will allow them to study a case in depth" (p. 331). Purposeful sampling was used in this study since the researcher was seeking information pertaining to specific groups: gifted students and teachers of gifted students. The purposefulness in the selection of participants in this study was more efficient, and the data collected were valid and pertinent to the purpose of the study.

Instrumentation

The main research instrument in this study was surveys. Close-ended and open-ended questions were the primary source for collecting data to "supplement each other and hence boost the validity and dependability of the data" (Zohrabi, 2013, p. 254). Quantitative data were collected through closed-ended questions on the surveys and were enhanced and supported through open-ended questions. The ease of analysis makes close-ended questions more efficient, while open-ended questions "can lead to a greater level of discovery" (Zohrabi, 2013, p. 255).

The survey instruments were developed by the researcher using the Qualtrics platform. All questions contained in the surveys were directly related to the research questions of this study and were designed to create responses described as correct, meaningful, and useful to the study. To ensure validity, the questions were based on knowledge gained through discovery in the literature relating to reasons for underachievement in gifted students and perceptions of teachers of gifted students. Per

Fraenkel et al. (2015), "Validity refers to the appropriateness, correctness, meaningfulness, and usefulness of the specific inferences researchers make based in the data they collect" (p. 158).

Zohrabi (2013) recommended applying other methods "to boost the internal validity of the research data and instruments" (p. 258). To further validate the survey instruments, the peer examination method was applied. Gifted and regular education teachers who were "nonparticipants in the field" and familiar with gifted underachievement were asked to "review and comment" on the questions contained in the surveys (Zohrabi, 2013, p. 259).

Scales developed by previous researchers may not always be appropriate; therefore, these scales are often adapted (Hartley, 2013). The Student Engagement Instrument (SEI) was used as a reference in the development of the questions used on the student surveys. The SEI was designed to "capture factors that affect engagement rather than indicators of engagement" (Veiga, Reeve, Wentzel, & Robu, 2014, p. 40). The purpose of this study was to determine the "indicators of engagement," or lack thereof, resulting in underachievement (Veiga et al., 2014, p. 40). Therefore, while the SEI is a valid and reliable instrument, the outcome of the responses would not be relevant (Appleton, Christenson, Kim, & Reschly, 2006). Thus, the scale previously developed for the SEI was adapted for this study.

Zohrabi (2013) suggested ambiguity, unclearness, and wording of questions might affect responses and lead to the collection of inaccurate or unrelated data. The questions contained on both the student and teacher surveys were clear and concise. To ensure

readability, the surveys were reviewed by colleagues not participating in the survey. The surveys were revised based on feedback from the pilot group.

A student survey (see Appendix A) was used to collect data relating to student perceptions of educational experiences and attitudes toward school. Students were asked to respond to a series of statements using a Likert-type five-point frequency scale. Likert-type scales are most commonly used to measure attitudes (McLeod, 2008). The responses allow for degrees of opinion and allow quantitative data to be gathered and analyzed (McLeod, 2008). The survey consisted of 10 statements to which the student participants responded related to educational experiences and 10 statements related to attitudes toward school. The responses of the two subgroups of achieving and underachieving gifted students were "meaningfully compared" (Hartley, 2013, p. 84).

Gifted student participants were asked to respond to survey statements designed to elicit responses correct, meaningful, and useful to the study. Students were asked to respond to the statement "I have choices in my learning." Students are most productive when they can select topics to investigate (Morisano & Shore, 2010). By allowing students to develop their own objectives, they are able to recognize their abilities and gain a better understanding of self (Morisano & Shore, 2010).

Students were asked to respond to the statement, "The activities I do in school are challenging." Snyder and Linnenbrink-Garcia (2013) suggested, "Underachievement should be reduced, and motivation enhanced, by placing the student in a challenging environment" (p. 209). Gifted students need to be challenged in order to recognize effort is necessary for success (Clinkenbeard, 2012).

Students were asked to respond to the statement, "I learn something new in school every day." Pullout instruction is beneficial, but alone, this type of instruction does not meet the needs of gifted students on a daily basis (Brulles & Winebrenner, 2011). High-ability students may represent 7% to 10% of the entire school population, but the probability their educational needs are being accommodated is much lower than for low-achieving students (Brulles & Winebrenner, 2011).

Students were asked to respond to the statement, "I complete the assignments I am given with little or no difficulty." Snyder and Linnenbrink-Garcia (2013) suggested, "It is possible that success in a very easy curriculum may not foster personal or attainment value for academics, as gifted underachieving students report feeling very detached from academics" (p. 217). Gifted underachievers develop frustration with easy tasks and long to be challenged (Snyder & Linnenbrink-Garcia, 2013).

Students were asked to respond to the statement, "My teacher(s) provide a variety of learning tools that are interesting to me." An increase in achievement takes place when differentiation is present in the classroom (Altintas & Ozdemir, 2015). Teachers who understand the needs of gifted learners can provide learning experiences which are meaningful, spark interest, and bring value and relevance to learning (Bembenutty, 2012).

Students were asked to respond to the statement, "My teacher provides alternative assignments for me when I already know the information being taught." Teachers should offer options to individualize learning via student interests but also remain within the curriculum (Schultz, 2002). Effective gifted cluster teachers accelerate, compact, enrich, allow independent studies, use flexible grouping, and consistently use formal and

informal assessments (Brulles & Winebrenner, 2011). Classes structured using the Most Difficult First model, allowing students to opt out of previously mastered content, are most beneficial to gifted students (Brulles & Winebrenner, 2011).

Students were asked to respond to the statement, "My teacher teaches the class things I already know." According to Post (2016), "Without the necessary complexity, depth and pace of learning, without like-minded peers, and without teachers who are trained to understand and teach gifted children, they quickly lose interest in learning, and disrespect their teachers and school culture" (para. 4). Both gifted educators and general education teachers need to differentiate content for all students regardless of ability level (Seedorf, 2014).

Students were asked to respond to the statement, "I get to work in small groups with my intellectual peers." When placed in heterogeneous classrooms where different learning levels are present, gifted students often find themselves waiting for their classmates (dos Reis Taucei et al., 2015). When grouped with intellectual peers, gifted students take more academic risks, challenge each other, and are driven to achieve more (Brulles & Winebrenner, 2011).

Students were asked to respond to the statement, "My teacher asks me to help other students in the classroom with assignments." Hoover-Schultz (2005) confirmed, "Underachieving students often report peer influence as the single most important force blocking their achievement" (p. 47). Gifted students often feel "out of step" socially, and feelings of difference from their peers can result in emotional stress (Ritchotte et al., 2014, p. 184). Teachers who do not understand the needs of gifted students often ask them to help lower-achieving students (Clinkenbeard, 2012). Clinkenbeard (2012)

reported, “Peer tutoring can be beneficial if limited; however, this does not provide challenges to the gifted student” (p. 626).

Students were asked to respond to the statement, “My teacher helps me when I have a problem.” Often, regular education teachers believe gifted students can make it on their own without any additional support and do not see gifted students as being at risk (Ritchotte et al., 2015). According to Figg et al. (2012), all students, including gifted students, depend on teachers for learning.

Students were asked to respond to the statement, “Getting good grades is important to me.” When left unchallenged, gifted students often find no value in school and lack motivation (Merriman, 2012). Therefore, through research, Merriman (2012) substantiated, “Some [gifted students] do not go beyond the curriculum because they do not see the benefit of exploring as outweighing the guarantee of a perfect grade” (p. 32).

Students were asked to respond to the statement, “My school is a fun, safe place to learn.” Motivation results from a combination of personal and environmental factors (Clinkenbeard, 2012). When gifted students are forced into a classroom setting where differentiation does not take place and their needs are not met, they become “bored with school” (Hoover-Schultz, 2005, p. 49). To protect self-efficacy, gifted students should avoid a setting which threatens their coping skills and should instead choose settings which are not intimidating and provide a sense of safety (Ritchotte et al., 2014)

Students were asked to respond to the statement, “I have a good relationship with my teachers.” Having teachers who care about and understand gifted students is important (Clinkenbeard, 2012). The center of concern for educators should be the whole child (Marwaha, 2015). Figg et al. (2012) established achievement levels can be “shaped

by adults…who…allowed (them) to pursue (their) interests according to (their) preferred learning styles" (p. 57). Landis and Reschly (2013), while investigating student engagement, found meaningful relationships with school-related adults as a "promising" intervention (p. 226).

Students were asked to respond to the statement, "I want do my best in school, and my work shows my abilities." Ritchotte et al. (2014) found students with academic goals are more motivated to engage in academic tasks. These students achieve to their full potential (Ritchotte et al., 2014). Contrarily, students absent of academic goals "have not reason to put forth the effort to achieve academically" (Ritchotte et al., 2014, p. 185).

Students were asked to respond to the statement, "I enjoy learning." Gifted underachievers report low levels of interest in academics (Snyder & Linnenbrink-Garcia, 2013). When gifted students are forced into a classroom which lacks differentiation and in which their needs are not being met, they become "bored with school" (Hoover-Schultz, 2005, p. 49). When placed in positive learning environments, enjoyment in learning is increased (Accariya, 2016).

Students were asked to respond to the statement, "I find my assignments to be interesting to me." Effective teachers must customize learning by providing interesting and challenging activities designed to meet intellectual needs (Accariya, 2016; Heald, 2016). By understanding the needs of gifted students, teachers can provide relevant, valuable, interesting, and meaningful learning experiences (Bembenutty, 2012).

Students were asked to respond to the statement, "I do my best even when I already know the information being taught." When courses are not appropriate for the instructional needs of gifted learners, they feel they are completing "busy work" or

become frustrated with “assignments… perceived to be meaningless and below their ability level” (Landis & Reschly, 2013, p. 237). A common reaction to an unchallenging curriculum is feelings of boredom and disengagement, ultimately resulting in underachievement (Ritchotte et al., 2014).

Students were asked to respond to the statement, “I do my best even when I do not see any value in or reason for doing the assignment.” Students must “first value the goals of school before they can become motivated to achieve” (Ritchotte et al., 2014, p. 185). Underachieving gifted students fail to complete assignments they deem pointless, which becomes a barrier to success (Merriman, 2012). If students do not value concepts or view concepts as pointless, underachievement is likely (Peters, 2012). Peters (2012) further explained even if students have the ability to do well, unless value is placed on the task, students are less likely to engage.

Students were asked to respond to the statement, “I do my best even when the assignment does not interest me.” Schultz (2002) came to the understanding “interest drives learning” (p. 214). A focus on student interests can contribute to task value, ultimately influencing achievement levels (Siegle et al., 2014).

Students were asked to respond to the statement, “I have a good attitude toward school.” Gifted underachievers report low levels of interest in academics (Snyder & Linnenbrink-Garcia, 2013), resulting in negative attitudes toward school (Batdal Karaduman, 2013). With the onset of underachievement in gifted students, negative attitudes toward school are developed (Ritchotte et al., 2014).

A teacher survey (see Appendix B) was used to collect data on educator perceptions of training and their abilities to meet the needs of gifted students in their

classrooms. Regular classroom teachers were asked to electronically respond to a series of statements using a combination of frequency scales and agreement scales. In addition, the teacher survey also included open-ended questions to gain a better understanding of perceptions. Zohrabi (2013) concluded, "It is better that any questionnaire includes both close-ended and open-ended questions to complement each other" (p. 255). Teacher participants were asked to respond to survey statements designed to elicit responses correct, meaningful, and useful to the study.

Teachers were asked to respond to the statement, "I understand the social and emotional, or affective, needs of gifted students." Having teachers who care and understand gifted students is important (Clinkenbeard, 2012). The center of concern for educators should be the whole child (Marwaha, 2015). Intelligent Quotient (IQ) alone does not equate to success; other factors play a role in success, such as emotional and social intelligence (Marwaha, 2015).

Teachers were asked to answer the question, "In what ways do you feel you meet the affective needs of gifted students in your classroom?" For educators to effectively meet the needs of gifted students, "it is vital to understand the emotional-social world of the gifted child" (Accariya, 2016, p. 98). According to Marwaha (2015), "Teaching emotional and social skills at school is important as these skills have long term effects on achievement" (p. 27).

Teachers were asked to respond to the statement, "I understand the academic needs of gifted students." A school curriculum conflicting with the academic needs of gifted students can result in underachievement (Snyder & Linnenbrink-Garcia, 2013). Teachers of gifted students should understand the attributes of gifted students and provide

appropriate instruction to emphasize challenging material and divergent and critical thinking (Brulles & Winebrenner, 2011).

Teachers were asked to respond to the statement, "I provide differentiated instruction and/or make adjustments to assignments to meet the needs of gifted students." Seedorf (2014) asserted, "GT [gifted] students need a variety of instructional activities and learning opportunities to stay engaged in the general curriculum. Modifying the process of learning is often the most effective method of keeping GT students engaged" (p. 249). Both gifted educators and general education teachers need to differentiate content for all students regardless of ability level (Seedorf, 2014).

Teachers were asked to answer the question, "What are some of the teaching strategies you use in your classroom to meet the academic needs of gifted students?" Peters (2012) stated:

> Even if a student truly enjoys a given topic, values it highly, and is very skilled at it, if that topic is presented at far lower levels than at which the student is ready, the perceived value is likely to be negligible. Still, because this student has potential but is not performing, common definitions would call him an underachiever. (p. 178)

To ensure an effective learning environment for gifted students, teachers must be "proactive and creative" when preparing and implementing teaching strategies to meet the needs of these unique students (Bakar, 2016, p. 55).

Teachers were asked to respond to the statement, "I am equipped with training and tools to meet the needs of an underachieving gifted student in my classroom."

Brulles and Winebrenner (2011) asserted teachers of gifted student should have special training:

> Suggested training topics include: The Schoolwide Cluster Grouping Model, characteristics of gifted learners, identification procedures, social and emotional needs of gifted students, parent communication, differentiated instruction formative and summative assessment practices, forming flexible learning groups, curriculum compacting, creating lesson extensions, creating tiered assignments, teaching holistic thinkers. (p. 43)

Elementary teachers do not always provide challenges to gifted students, resulting in underachievement in middle school, when a more challenging curriculum is introduced (Ritchotte et al., 2015).

Teachers were asked to answer the question, "What experiences have you had to assist you in meeting the needs of gifted students?" The responsibility of providing quality education for gifted students is that of the teacher (Satova, 2015). Teachers can create a more favorable learning environment for gifted students by using less-conventional teaching strategies and allowing students choices and control of learning (Hoover-Schultz, 2005).

Teachers were asked to answer the question, "If you attended college courses for gifted education, what are some of the teaching strategies you learned in those classes?" Educators often do not have the knowledge to properly recognize traits of gifted students and are ill-equipped to meet the needs of gifted learners due to the shortfall in training and preparation (Bergstrom, 2015). Teachers of gifted students need to be knowledgeable in gifted content including psychological needs of giftedness, gifted

models and approaches to development of personality of those who are gifted, and identification methods (Satova, 2015).

Teachers were asked to answer the question, “What professional development would you like for your district to offer relating to gifted education?” The responsibility of providing quality education for gifted students is that of the teacher (Satova, 2015). Schools are underachieving in providing engaging educational experiences for gifted students (Schultz, 2002).

Teachers were asked to answer the question, “In what ways could the gifted education teacher be a resource to you?” Both gifted educators and general education teachers need to differentiate content for all students, regardless of ability level (Seedorf, 2014). Clustering is a way to provide support to classroom teachers so they can meet the needs of gifted students (Brulles & Winebrenner, 2011).

Data Collection

Data from fourth- through sixth-grade gifted students and general education teachers were collected during the 2016-2017 school year. The data were collected from survey responses, standardized test scores, and standards-based grades. The data collected from Missouri Assessment Program (MAP) scores and standards-based grade cards were used to determine underachievement in gifted students. The MAP was designed to measure the achievement abilities of students (MODESE, 2015). The mean of the process goal indicators on the standards-based grade card was determined in both communication arts and math. Students who scored Advanced on the language arts and math sections of the MAP, but who had a mean score at or below average, were

considered underachievers. These data were used to identify the two subgroups of student participants: gifted achievers and gifted underachievers.

The data collected from the student survey responses assisted in comparing perceptions of educational experiences and attitudes toward school and learning between gifted achievers and underachievers. Student participants were asked to respond to statements using a five-point Likert-type scale regarding their perceptions of educational experiences and attitudes toward school. The survey was returned electronically to the researcher.

In addition, the data collected from teacher surveys provided a better understanding of the perceptions of teachers relating to training and to meeting the needs of gifted students. Individual teacher participants were asked to respond to both close-ended statements using a five-point Likert-type scale and open-ended questions to determine if teachers feel they have been properly trained and are equipped to meet the needs of gifted students. The survey was returned electronically to the researcher along with the informed consent form.

A research site permission letter (see Appendix F) was sent to the superintendent of the school district selected to participate in the study. Upon approval, a recruitment letter was then sent to administrators of elementary and middle school buildings seeking permission to survey first- through sixth-grade general education teachers and gifted students (see Appendix G). With permission granted, approximately 130 certified teachers and 75 gifted students were selected to participate.

To minimize researcher bias, building principals were asked to forward the study information to teachers. The selected teachers were emailed a recruitment letter (see

Appendix H), a consent for participation, and the survey. Individual participants completed the survey and returned it electronically to the researcher along with the informed consent form. The time of participation was estimated to be 15 minutes.

The parents of the selected students received a recruitment letter (see Appendix I) describing the study and requesting permission for their children to participate. The parents of the selected student participants also received a copy of the student assent form (see Appendix D), as well as an informed consent from parents (see Appendix E) describing the study and requesting permission for their children to participate. The selected student participants were given the assent to participate form describing the study. A third-party examiner distributed and reviewed the form with students and answered any questions.

Upon receipt of the signed assent from students and consent from parents, a third-party examiner collected data from MAP scores and standards-based grades. The third-party examiner was given instructions for collecting these data (see Appendix J). The third-party examiner compared the MAP scores to standards-based grades to determine underachievement. The participating students were divided into two subgroups: achieving gifted students and underachieving gifted students. Approximately 10% of the participants were identified as underachievers.

A third-party examiner administered the surveys and assigned numbers to the students to protect identities. The third-party examiner was given instructions for administering the electronic survey to students. The survey was administered during gifted education class; however, students were asked to respond to statements regarding

their educational experiences in regular education classrooms. A Likert-type five-point frequency scale was used. The time of participation was approximately 15 minutes.

Responses to both the teacher and student surveys were submitted electronically for analysis. Responses were stored electronically with password protection. To ensure confidentiality, upon completion of the study, responses were deleted.

Data Analysis

Quantitative data analysis involves "looking at your data graphically to see what the general trends in the data are, and fitting statistical models to the data" (Field, 2013, p. 19). Descriptive statistics, the Mann-Whitney *U* nonparametric test, and frequency distribution were used to analyze the quantitative data in this study. The data collected from MAP scores and standards-based grade cards were used to determine underachievement in gifted students. The mean of the process goal indicators on the standards-based grade card was determined in both language arts and math. Students scoring advanced on the language arts and math sections of the MAP, but with a mean score at or below average, were considered underachievers. These data were used to identify the two subgroups of student participants: gifted achievers and gifted underachievers.

A Mann-Whitney *U* test was used to show a comparison between the responses of gifted achieving and underachieving students. The median of each subgroup was determined from the responses to the student survey. The Mann-Whitney *U* test was used to further analyze the ranked data received from student responses. Milenovic (2011) explained, "In order for the Mann-Whitney *U* test to be applied, values need to be measurable on an ordinal scale and comparable in size" (p. 73). This nonparametric test

allowed the investigator to determine a difference, if any, in the perceptions of educational experiences and attitudes toward school between gifted achievers and gifted underachievers.

As required by the Mann-Whitney *U*, the median of the two groups were compared (Milenovic, 2011). This determined if the sums of the "pooled rankings for each group" were the same or different (Fraenkel et al., 2015, p. 237). If the summed ranks are "markedly different," then the differences between the perceptions of educational experiences and attitudes toward school of achieving and underachieving gifted students are "likely to be statistically significant" (Fraenkel et al., 2015, p. 237). The level of significance was determined by calculating the *U*-value with the sample and comparing this with the normal distribution (Statistics Solutions, 2013).

Frequency distribution was used to analyze data from the teacher surveys. The values of the data were analyzed showing the frequency each data set occurred (Field, 2013). The mode, or most common response, to each of the survey questions was identified to determine the perceptions teachers have related to their training and to meeting the needs of gifted students. Open-ended questions were included on the teacher surveys in order to gain a better understanding of perceptions regarding teacher readiness for meeting the needs of gifted students. The open-ended responses of the teacher participants provided a more in-depth explanation of teacher perceptions.

Statistical commentary of the results was included in the analysis to provide more meaning to the data. Patterns and trends to the responses of the teachers were recorded. Descriptive statistics were used to provide basic summaries of the data collected. Descriptive statistics "summarizes data in a meaningful way" (Laerd Statistics, 2013,

para. 1). The summarization of descriptive data included a combination of tabulated description, graphical description, and statistical commentary (Laerd Statistics, 2013). Graphical description and statistical commentary were used in the analysis of the responses to teacher surveys.

The responses to both the teacher and student surveys were submitted electronically for analysis. The data collected from the survey responses were analyzed. Quantitative data analysis methods were employed to gain a better understanding of underachievement in gifted students.

Summary

The research methods used in this study were guided by the research questions and purpose statement to discover differences in educational experiences and attitudes toward school between achieving gifted students and underachieving gifted students and to ascertain the preparedness of general education teachers for meeting the needs of gifted students. Quantitative data were used in the study in order to gain a better understanding of the needs of gifted students and whether or not those needs were being met. Comparisons were made using the Mann-Whitney *U* test and descriptive statistics to provide a meaningful summary of the data collected.

In Chapter Four, the results of the study are revealed. Each of the survey questions is statistically analyzed. The results of the student responses to each of the survey questions are discussed using descriptive statistics. The results are also analyzed in relation to the Mann-Whitney *U* to show a comparison between the responses of the two groups: achievers and underachievers. The responses to the teacher surveys are analyzed using frequency distribution and descriptive statistics. The results are discussed

illustrating the mode of each of the close-ended survey questions. Responses given by teachers to the open-ended questions are shared to gain insight and provide more meaning to the results.

Chapter Four: Analysis of Data

The educational needs of gifted students are not being met (Brulles & Winebrenner, 2011). The educational system is failing to meet the needs of these high-achieving students (Brulles & Winebrenner, 2011). According to Schultz (2002), the gifted students are not the underachievers, but rather the schools are underachieving in providing educational experiences for these bright learners. To meet the needs of gifted students and to provide an educational experience in which they will excel, general education teachers need specialized training to understand and effectively meet the academic and affective needs of these students (Satova, 2015).

This study was designed to compare the perceptions of achieving and underachieving gifted students regarding their educational experiences and attitudes toward school and learning. The study was also designed to gain a better understanding of the preparedness of teachers to meet the needs of gifted students. Surveys were developed to address each of the research questions in order to gain a better understanding of underachievement in gifted students, the causes stemming from this problem, and ways to close the gap between potential performance and actual performance.

Design of Study

The quantitative method was used in this study to collect close-ended and open-ended survey responses. The responses were then analyzed and transformed into numerical data for descriptive purposes, comparison of groups, and demonstration of relationships between variables (Creswell, 2014). Comparisons were made regarding the

perceptions of educational experiences and attitudes toward school and learning of both achieving and underachieving gifted students.

Quantitative methods were also used to collect data from teacher surveys relating to perceptions of adequate preparation to meet the needs of gifted students in their classrooms. The data collected through open-ended questions were used to further enhance the data from the close-ended statements included on the teacher surveys. The data were analyzed for theme development and to show relationships between themes (Creswell, 2014).

Surveys

Surveys were the main research instrument used in this study. Close-ended and open-ended questions were the primary source for collecting data. All questions contained in the surveys were directly related to the research questions of this study and were designed to create responses correct, meaningful, and useful to the study.

A student survey was used to collect data relating to student perceptions of educational experiences and attitudes toward school and learning. Students were asked to respond to a series of statements using a Likert-type five-point frequency scale. A teacher survey was used to collect data relating to perceptions of training and abilities to meet the needs of gifted students in their classrooms. Regular classroom teachers were asked to respond to survey statements and open-ended questions designed to elicit responses correct, meaningful, and useful to the study and related to the perceptions of their training and abilities to meet the needs of gifted students.

Respondent Demographics

The research site was a public school district in a town in southwest Missouri with a population of approximately 26,000 residents (Proximity, 2016). Of the residents, 5,776 were students attending school in grades pre-kindergarten through 12 (Proximity, 2016). Approximately 251 of those students were enrolled in the gifted program (Proximity, 2016). The district served 2,000 students in grades four through six in seven elementary and middle school buildings (MODESE, 2016). Of those students, approximately 75 (4%) attended the gifted program. Of the 75 gifted students in fourth through sixth grades, 13 (17%) were identified as underachievers.

At the elementary and middle school levels, grades kindergarten through six, the district employed 384 certified staff (MODESE, 2016). Approximately 130 certified first- through sixth-grade regular education teachers accounted for approximately 33% of the certified staff employed by the district. The teacher participants were general education teachers teaching first through sixth grades in the selected school district.

The sample size was 30-80 students and 20-130 certified teachers. Of the 75 gifted students, 48 completed the survey with a response rate of 64%. Of the 130 certified teachers, 24 completed the survey with a response rate of 18.5%. A minimum of 30 gifted students and 20 certified teachers were required for this study.

Research Question One: Educational Experiences

What is the difference in the perceived value of educational experiences in the regular education classroom between achieving and underachieving gifted students?

This question was analyzed using descriptive statistics and the Mann-Whitney *U* nonparametric test to show comparison of groups and relationships among variables.

Descriptive statistics were used to meaningfully describe and summarize the data to show patterns and trends. Forty-eight gifted students in fourth through sixth grades responded to the survey. Their responses to each of the close-ended questions on the survey regarding their educational experiences are discussed below.

When asked to respond to the survey statement, "I have choices in my learning," 6.25% (*n* = 3) indicated they always had choices, 18.75% (*n* = 9) said they had choices most of the time, 43.75% (*n* = 21) had choices sometimes, 29.17% (*n* = 14) responded they did not have choices very often, and 2.08% (*n* = 1) never had choices. The mode of this survey question relating to educational experiences of both achievers and underachievers was "sometimes." When the data from each group were analyzed separately, the mode among the gifted achievers was "sometimes" (45.24%, *n* = 19), while the most common response among gifted underachievers was "not very often" (50%, *n* = 3). Figure 1 provides a summary of the responses.

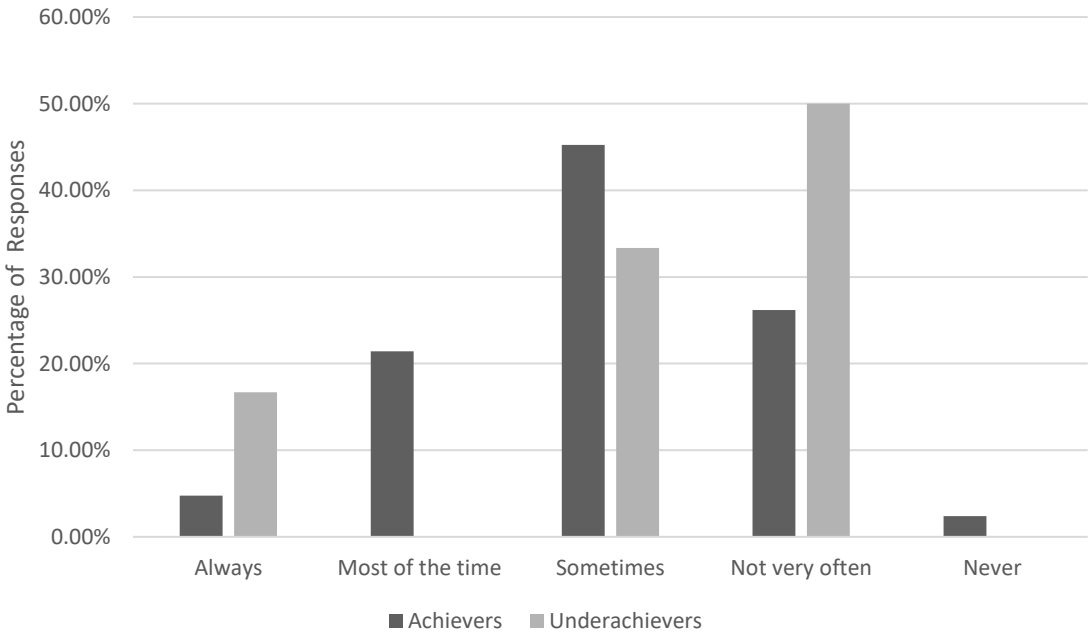

Figure 1. Student responses to survey statement, "I have choices in my learning."

When asked to respond to the survey statement, “The activities I do in school are challenging,” 2.08% (*n* = 1) indicated they were always challenged, 14.58% (*n* = 7) said they were challenged most of the time, 43.75% (*n* = 21) were challenged sometimes, 37.50% (*n* = 18) responded they were not challenged very often, and 2.08% (*n* = 1) were never challenged. The mode of this survey question for both achievers and underachievers was “sometimes.” When the data from each group were analyzed separately, the mode among gifted achievers was “sometimes” (40.48%, *n* = 17) and “not very often” (40.48%, *n* = 17), while the most common response among the gifted underachievers was “sometimes” (66.67%, *n* = 4). Figure 2 provides a summary of the responses.

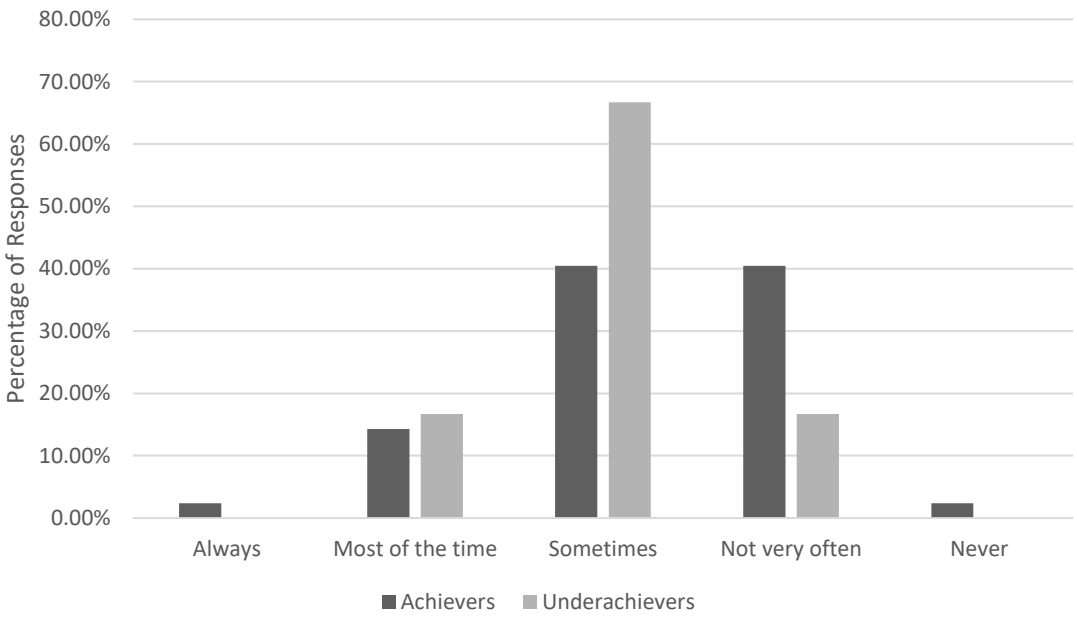

Figure 2. Student responses to survey statement, "The activities I do in school are challenging."

When asked to respond to the survey statement, "I learn something new in school every day," 14.58% (n = 7) indicated they always learned something new, 25% (n = 12) said they learned something new most of the time, 41.67% (n = 20) sometimes learned something new, 18.75% (n = 9) responded they did not learn something new very often, and 0% (n = 0) never learned something new. The mode of this survey question relating to educational experiences of both achievers and underachievers was "sometimes." When the data from each group were analyzed separately, the mode of the gifted achievers was "sometimes" (40.47%, n = 17), and the most common response among gifted underachievers was also "sometimes" (50%, n = 3). Figure 3 provides a summary of the responses.

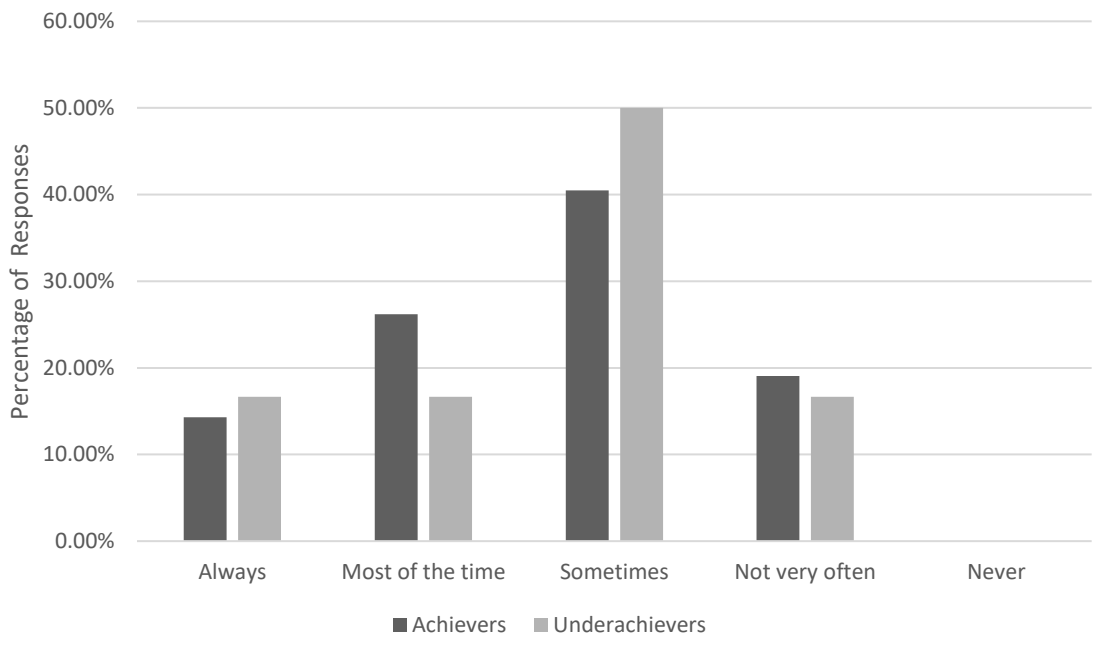

Figure 3. Student responses to survey statement, "I learn something new in school every day."

When asked to respond to the survey statement, "I complete the assignments I am given with little or no difficulty," 20.83% (n = 10) indicated they always completed assignments with little or no difficulty, 62.50% (n = 30) said they completed assignments with little or no difficulty most of the time, 12.5% (n = 6) sometimes completed assignments with little or no difficulty, 4.17% (n = 2) responded they did not complete assignments with little or no difficulty very often, and 0% (n = 0) never completed assignments with little or no difficulty. The mode of this survey question relating to educational experiences of both achievers and underachievers was "most of the time." When the data from each group were analyzed separately, the mode among the gifted achievers was "most of the time" (69.05%, n = 29), while the most common response

among gifted underachievers was “sometimes” (50%, *n* = 3). Figure 4 provides a summary of the responses.

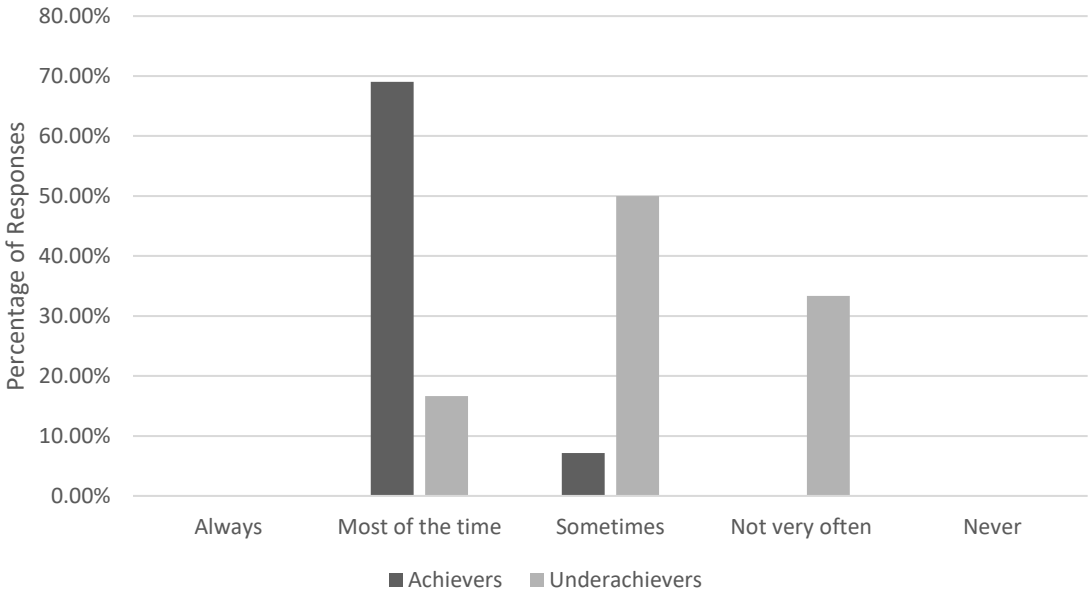

Figure 4. Student responses to survey statement, “I complete the assignments I am given with little or no difficulty.”

When asked to respond to the survey statement, “My teacher provides a variety of learning tools that are interesting to me,” 18.75% (*n* = 9) indicated they always had a variety of learning tools, 33.33% (*n* = 18) said they had a variety of learning tools most of the time, 22.92% (*n* = 11) had a variety of learning tools sometimes, 2.08% (*n* = 1) responded they did not have a variety of learning tools very often, and 2.08% (*n* = 1) never had a variety of learning tools. The mode of this survey question relating to educational experiences of both achievers and underachievers was “most of the time.” When the data from each group were analyzed separately, the mode among gifted

achievers was “sometimes” (40.48%, *n* = 17) and “not very often” (40.48%, *n* = 17), and the most common response among the gifted underachievers was “sometimes” (66.67%, *n* = 4). Figure 5 provides a summary of the responses.

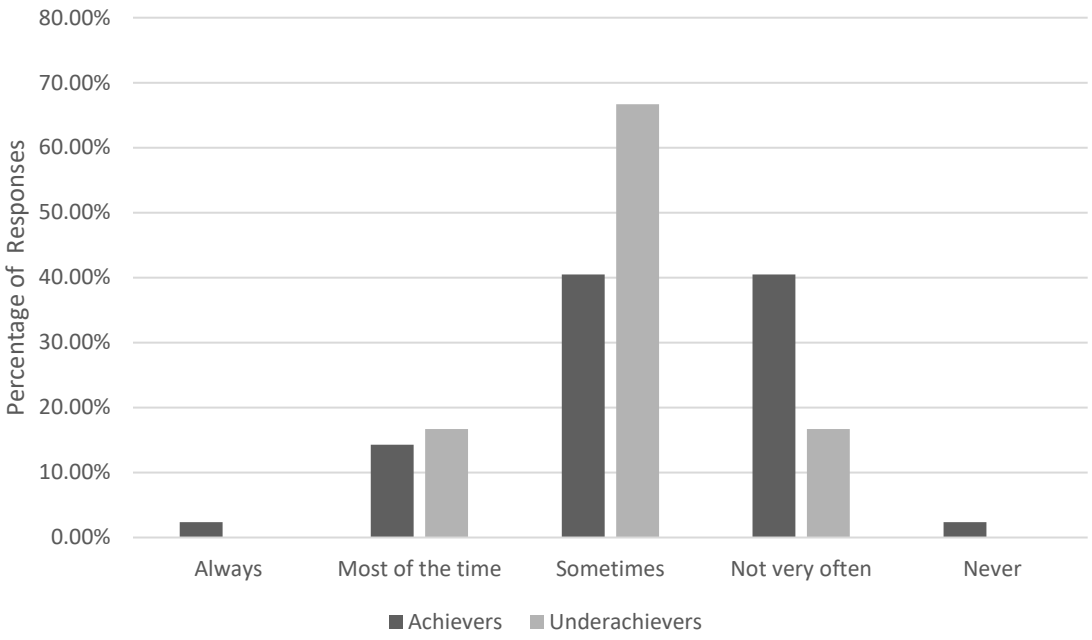

Figure 5. Student responses to survey statement, “My teacher provides a variety of learning tools that are interesting to me.”

When asked to respond to the survey statement, “My teacher provides alternate assignments for me when I already know the information being taught,” 0% (*n* = 0) indicated they always were provided with alternate assignments, 12.5% (*n* = 6) said they were provided with alternate assignments most of the time, 12.5% (*n* = 6) were provided with alternate assignments sometimes, 25% (*n* = 12) responded they were not provided with alternate assignments very often, and 50% (*n* = 24) were never provided with alternate assignments. The mode of this survey question relating to educational

experiences of both achievers and underachievers was "never." When the data from each group were analyzed separately, the mode among the gifted achievers was "never" (45.24%, *n* = 19), and the most common response among gifted underachievers was also "never" (83.33%, *n* = 5). Figure 6 provides a summary of the responses.

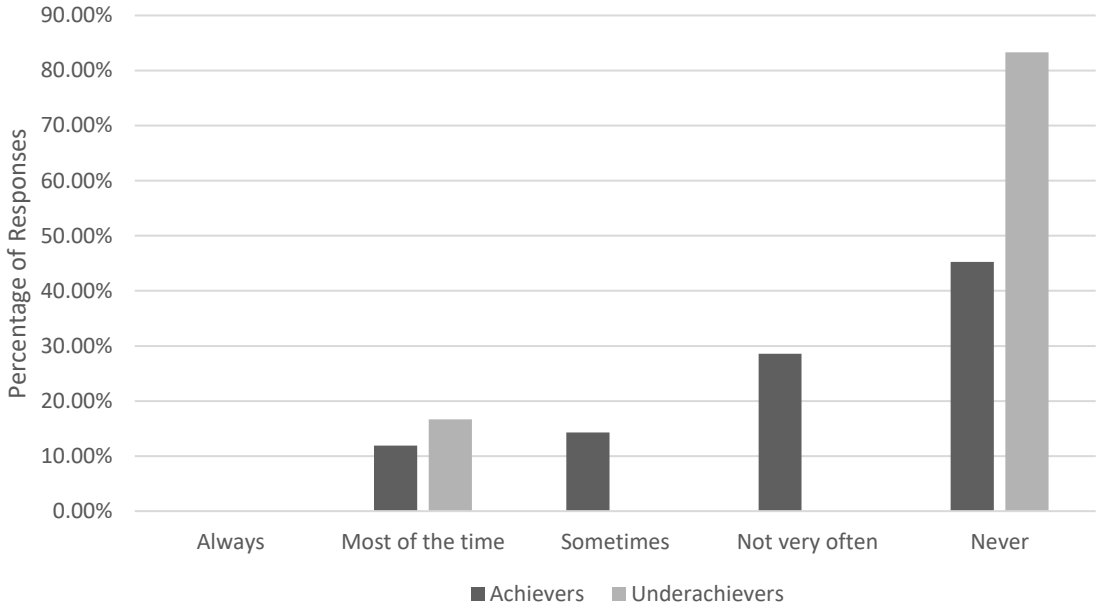

Figure 6. Student responses to survey statement, "My teacher provides alternative assignments for me when I already know the information being taught."

When asked to respond to the survey statement, "My teacher teaches the class things I already know," 2.08% (*n* = 1) indicated always, 33.33% (*n* = 16) said most of the time, 58.33% (*n* = 28) responded sometimes, 6.25% (*n* = 3) responded not very often, and 0% (*n* = 0) answered never. The mode of this survey question relating to educational experiences of both achievers and underachievers was "sometimes." When data from each group were analyzed separately, the mode among the gifted achievers was

"sometimes" (57.14%, *n* = 24), and the most common response among gifted underachievers was also "sometimes" (66.67%, *n* = 4). Figure 7 provides a summary of the responses.

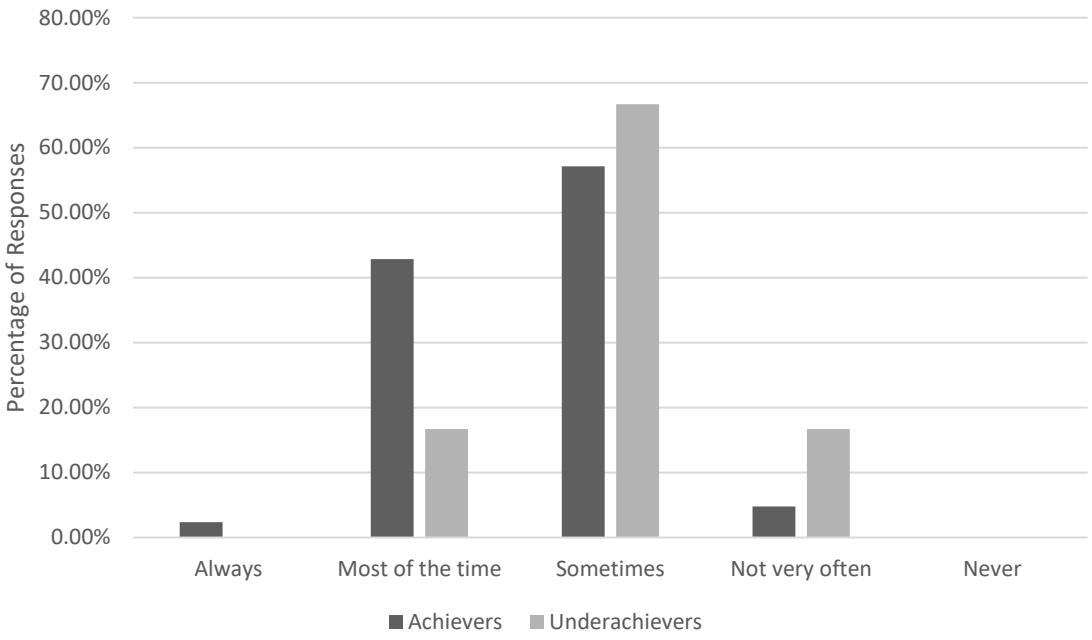

Figure 7. Student responses to survey statement, "My teacher teaches the class things I already know."

When asked to respond to the survey statement, "I get to work in small groups with my intellectual peers," 4.17% (*n* = 2) indicated they always got to work with their intellectual peers, 16.67% (*n* = 8) said they got to work with their intellectual peers most of the time, 18.75% (*n* = 9) got to work with their intellectual peers sometimes, 43.75% (*n* = 21) responded they did not get to work with their intellectual peers very often, and 16.67% (*n* = 8) never got to work with their intellectual peers. The mode of this survey question relating to educational experiences of both achievers and underachievers was

"not very often." When the data from each group were analyzed separately, the mode among the gifted achievers was "not very often" (47.62%, *n* = 20), while the most common response among gifted underachievers was "sometimes" (66.67%, *n* = 4). Figure 8 provides a summary of the responses.

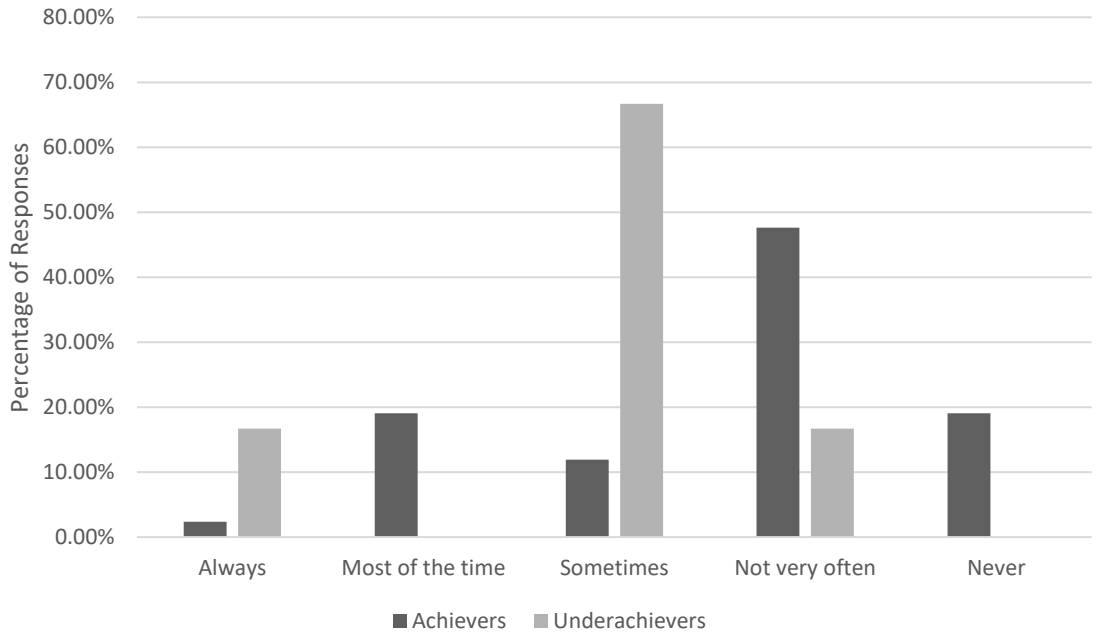

Figure 8. Student responses to survey statement, "I get to work in small groups with my intellectual peers."

When asked to respond to the survey statement, "My teacher asks me to help other students in the classroom with assignments," 4.17% (*n* = 2) indicated they were always asked to help other students, 25% (*n* = 12) said they were asked to help other students most of the time, 33.33% (*n* = 16) were asked to help other students sometimes, 25% (*n* = 12) were not asked to help other students very often, and 12.5% (*n* = 6) were never asked to help other students. The mode of this survey question relating to

educational experiences of both achievers and underachievers was "sometimes." When the data from each group were analyzed separately, the mode among the gifted achievers was "sometimes" (38.10%, *n* = 16), while the most common response among gifted underachievers was "not very often" (66.67%, *n* = 4). Figure 9 provides a summary of the responses.

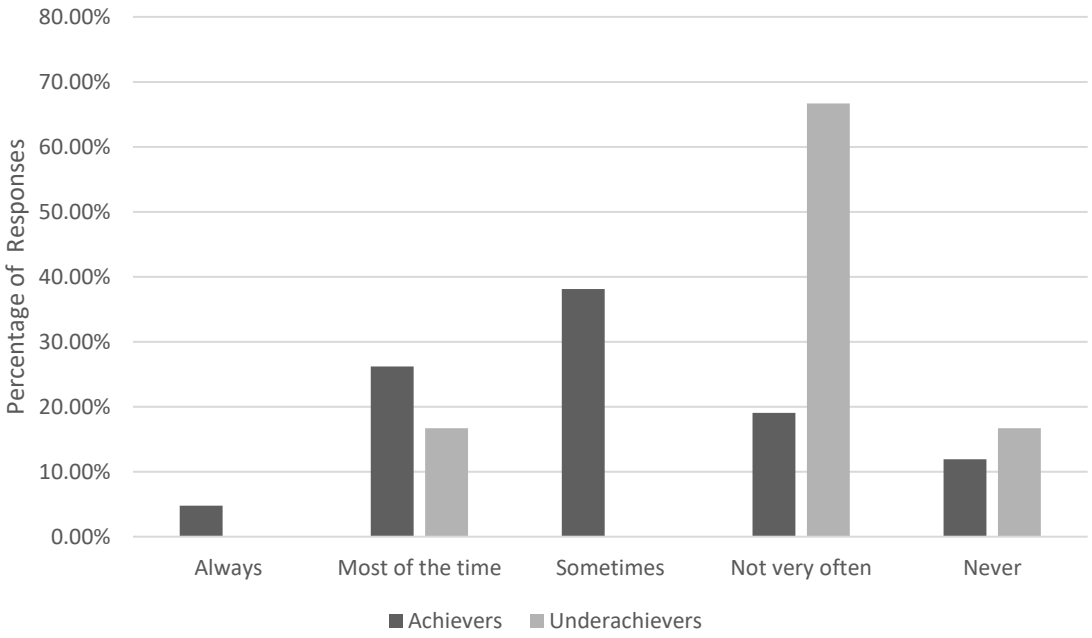

Figure 9. Student responses to survey statement, "My teacher asks me to help other students in the classroom with assignments."

When asked to respond to the survey statement, "My teacher helps me when I have a problem," 68.75% (*n* = 33) indicated they always received help with problems, 22.92% (*n* = 11) said they received help with problems most of the time, 4.17% (*n* = 2) receive help with problems sometimes, 4.17% (*n* = 2) responded they did not receive help with problems very often, and 0% (*n* = 0) were never helped with problems. The mode

of this survey question relating to educational experiences of both achievers and underachievers was "always." When the data from each group were analyzed separately, the mode among the gifted achievers was "always" (71.43%, *n* = 30), and the most common response among gifted underachievers was also "always" (50%, *n* = 3). Figure 10 provides a summary of the responses.

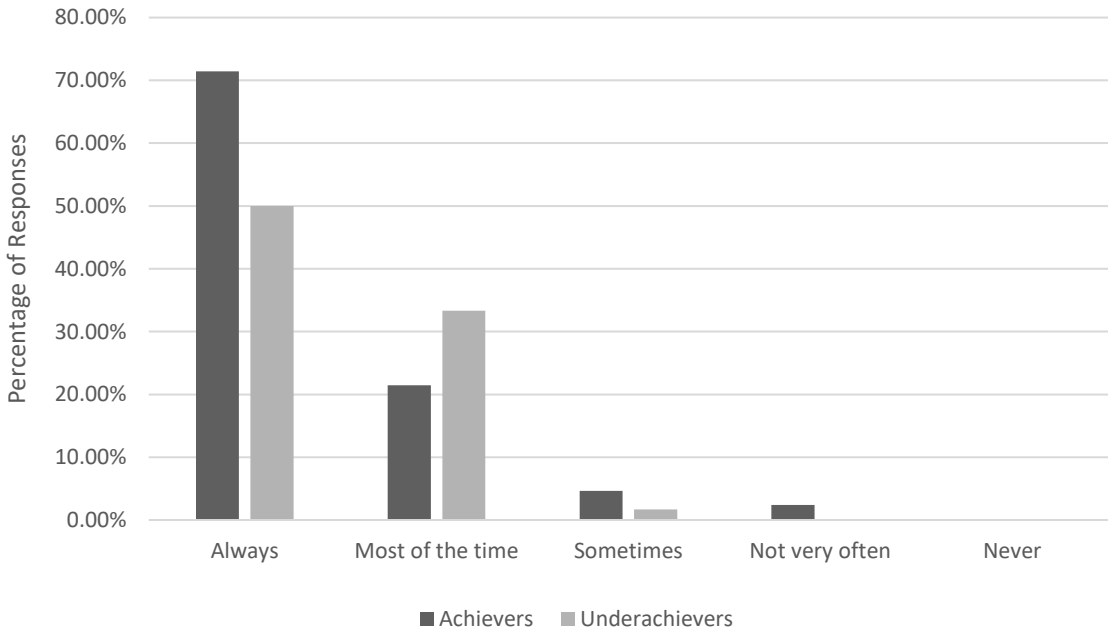

Figure 10. Student responses to survey statement, "My teacher helps me when I have a problem."

The Mann-Whitney *U* test was used to understand whether the perceived value of educational experiences differed between achieving and underachieving gifted students (Milenovic, 2011). The dependent variable, perceived educational experiences, was measured on an ordinal five-point Likert-type scale with responses ranging from always to never (Laerd Statistics, 2013). The dependent variable consisted of two groups:

achievers and underachievers. The Mann-Whitney *U* test was applied to each survey question to determine if there was a significant difference between the two groups (Fraenkel et al., 2015). With $\alpha = 0.05$ and the critical *z* value of ±1.96, the following resulted when students were asked to respond to survey statements relating to educational experiences in the regular education classroom (Laerd Statistics, 2013):

- *I have choices in my learning*. The mean of the combined ranks (25) showed no statistically significant difference, $U = 108$, $z = 0.6252$, $p = .5287$.
- *The activities I do in school are challenging*. The mean of the combined ranks (24.5) showed no statistically significant difference, $U = 98.5$, $z = -0.841$, $p = .4009$.
- *I learn something new in school every day*. The mean of combined ranks (24.5) showed no statistically significant difference, $U = 123$, $z = 0.0779$, $p = .93624$.
- *I complete the assignments I am given with little or no difficulty*. The mean of combined ranks (24.5) showed no statistically significant difference, $U = 64.5$, $z = -.9016$, $p = .05744$.
- *My teacher provides a variety of learning tools that are interesting to me*. The mean of combined ranks (24.5) showed no statistically significant difference, $U = 115$, $z = 0.3273$, $p = .7414$.
- *My teacher provides alternative assignments for me when I already know the information being taught*. The mean of combined ranks (23.5) showed no statistically significant difference, $U = 83$, $z = 1.1905$, $p = .23404$.

- *My teacher teaches the class things I already know*. The mean of combined ranks (25) showed no statistically significant difference, $U = 99.5$, $z = -0.826$, $p = .37886$.
- *I get to work in small groups with my intellectual peers (other gifted students)*. The mean of combined ranks (24) showed no statistically significant difference, $U = 70$, $z = -1.673$, $p = .09492$.
- *My teacher asks me to help other students in the classroom with assignments*. The mean of combined ranks (24.5) showed no statistically significant difference, $U = 75.5$, $z = -1.558$, $p = .11876$.
- *My teacher helps me when I have a problem.* The mean of combined ranks (24) showed no statistically significant difference, $U = 93.5$, $z = 0.9244$, $p = .35758$.

The Mann-Whitney *U* test was used to understand whether the perceived value of educational experiences and attitudes toward school and learning differed between achieving and underachieving students. Table 1 shows the summary of Mann-Whitney *U* rank sum analysis of the survey responses related to perceptions of educational experiences. The test showed no statistically significant difference between the two groups.

Table 1

Summary of Mann-Whitney U Rank Sum Analysis Relating to Educational Experiences

Survey Question	*U*	*z*	*p*	Sum of Ranks	Mean of Ranks	Result	
1	108	0.6252	.5287	1225	25	$p > .05$	NS
2	98.5	-0.841	.4009	1176	24.5	$p > .05$	NS
3	123	0.0779	.93624	1176	24.5	$p > .05$	NS
4	64.5	-.9016	.05744	1176	24.5	$p > .05$	NS
5	115	0.3273	.7414	1176	24.5	$p > .05$	NS
6	83	1.1905	.23404	1081	23.5	$p > .05$	NS
7	99.5	-0.826	.37886	1225	25	$p > .05$	NS
8	70	-1.673	.09492	1128	24	$p > .05$	NS
9	75.5	-1.558	.11876	1176	24.5	$p > .05$	NS
10	93.5	0.9244	.35758	1128	24	$p > .05$	NS

Note. The critical value for *U* is based on the alpha level of 5% and a two-tailed null hypothesis. The value of *z* and the associated value of *p* for the Mann-Whitney *U* test at .05 level of significance is 1.96.

The results of the responses of all 10 survey statements relating to educational experiences indicated no difference between the ranks of the group of gifted achievers and the group of gifted underachievers. Therefore, the null hypothesis was not rejected.

Research Question Two: Attitudes Toward School and Learning

What is the difference in attitudes toward school and learning between achieving and underachieving gifted students?

This question was analyzed using descriptive statistics and the Mann-Whitney *U* nonparametric test to show comparison of groups and relationships among variables. Descriptive statistics were used to meaningfully describe and summarize the data to show patterns and trends. Forty-eight gifted students in fourth through sixth grades responded to the survey. Their responses to each of the closed-ended questions on the survey regarding attitudes toward school and learning are discussed below.

When asked to respond to the survey statement, "Getting good grades is important to me," 85.42% (n = 41) indicated grades were always important, 10.42% (n = 5) said grades were important most of the time, and 4.17% (n = 2) indicated getting good grades was important sometimes. None of the participants responded to the statement with "not very often" or "never." The mode of this survey question relating to the importance of good grades was "always." When the data from each group were analyzed separately, the mode among the gifted achievers was "always" (85.71%, n = 36), and the most common response among gifted underachievers was also "always" (83.33%, n = 5). Figure 11 provides a summary of the responses.

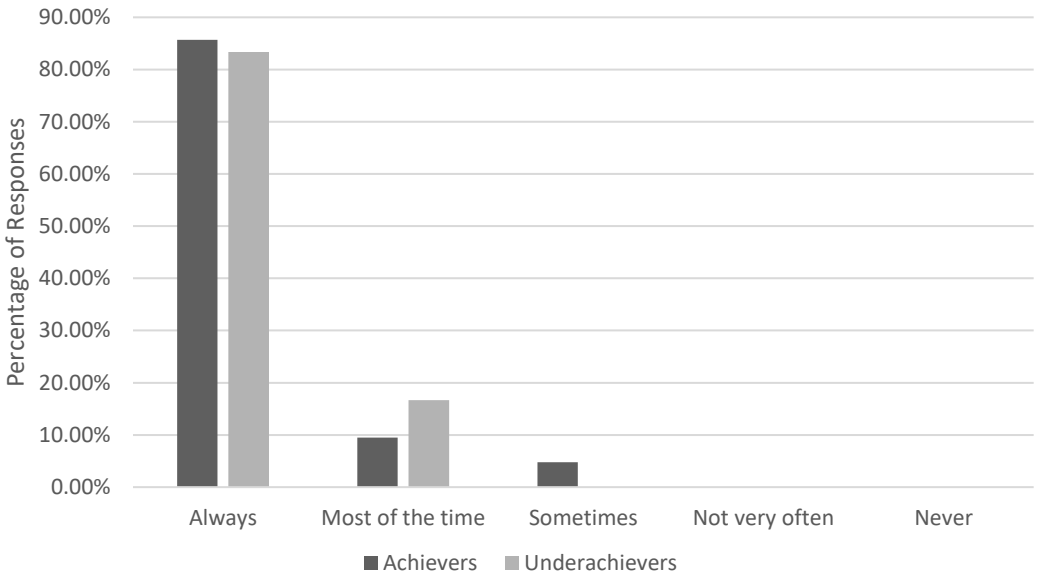

Figure 11. Student responses to survey statement, "Getting good grades is important to me."

When asked to respond to the survey statement, "My school is a fun, safe place to learn," 43.75% (n = 21) indicated their school is always a fun, safe place to learn; 37.5% (n = 18) responded most of the time; 8.33% (n = 4) responded sometimes; 8.33% (n = 4) stated their school was not a fun, safe place to learn very often; and 2.08% (n = 1) responded never. The mode of this survey question relating to attitudes toward school and learning of both achievers and underachievers was "always." When the data from each group were analyzed separately, the mode among the gifted achievers was "always" (45.24%, n = 19), while the most common responses among gifted underachievers were "always" (33.33%, n = 2) and "not very often" (33.33%, n = 2). Figure 12 provides a summary of the responses.

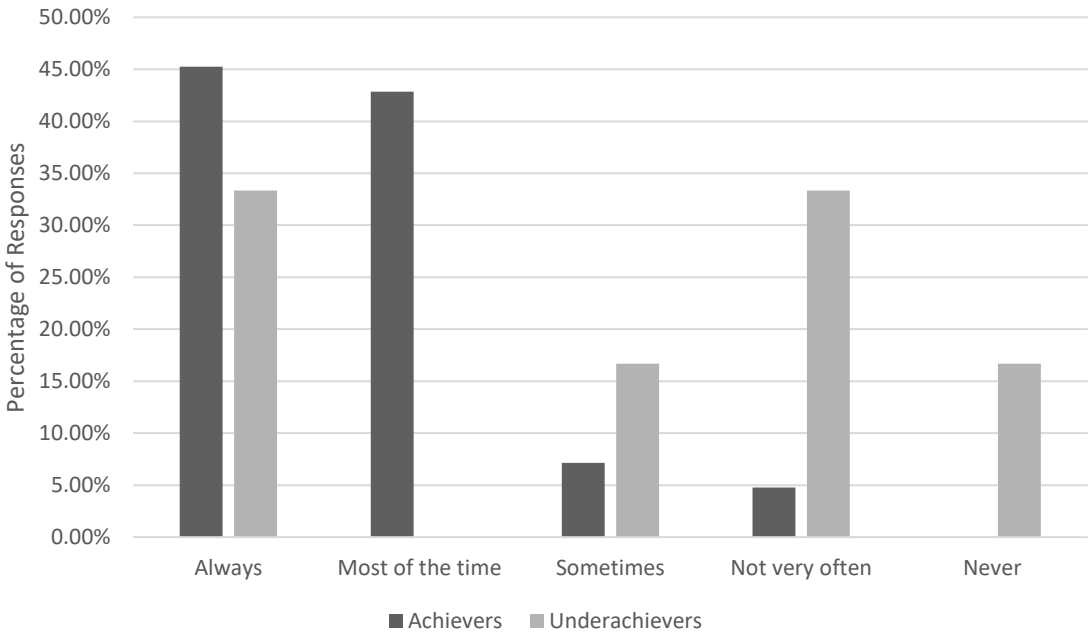

Figure 12. Student responses to survey statement, "My school is a fun, safe place to learn."

When asked to respond to the survey statement, "I have a good relationship with my teachers," 56.25% (*n* = 27) indicated always, 37.50% (*n* = 18) said they had a good relationship with their teachers most of the time, 6.25% (*n* = 3) sometimes felt they had a good relationship with their teachers, and none of the participants responded with "not very often" or "never." The mode of this survey question relating to attitudes toward school and learning of both achievers and underachievers was "always." When the data from each group were analyzed separately, the mode among the gifted achievers was "always" (61.90%, *n* = 26), and the most common response among gifted underachievers was "most of the time" (50%, *n* = 3). Figure 13 provides a summary of the responses.

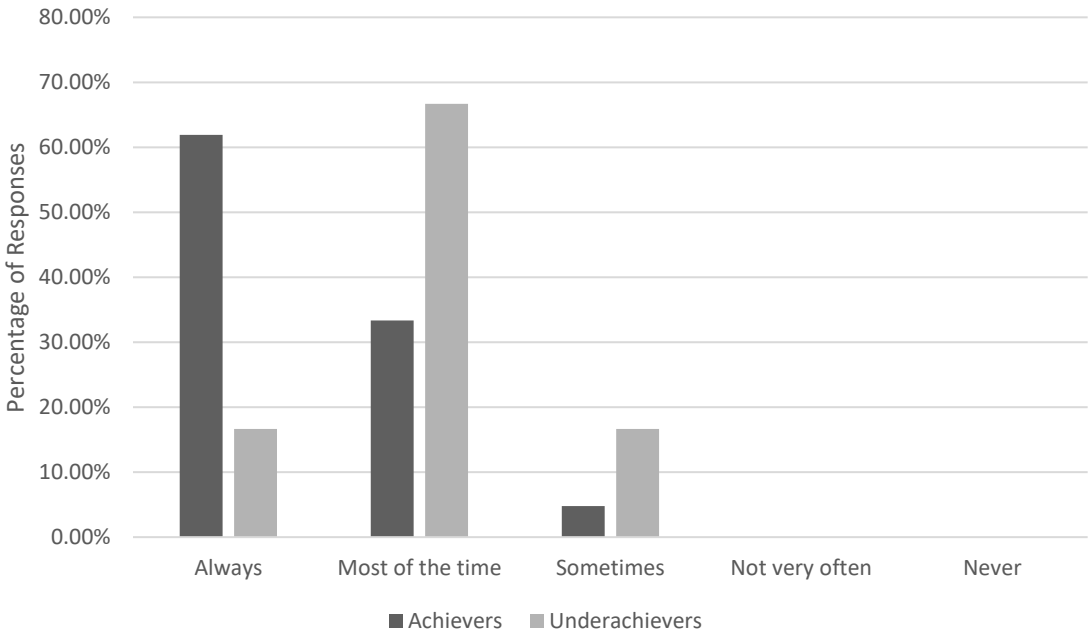

Figure 13. Student responses to survey statement, "I have a good relationship with my teachers."

When asked to respond to the survey statement, "I want to do my best in school and my work shows my abilities," 75% (n = 36) indicated they always wanted to do their best, 16.67% (n = 8) said they wanted to do their best most of the time, 8.33% (n = 4) sometimes did their best, and none of the participants responded with "not very often" or "never." The mode of this survey question relating to attitudes toward school and learning of both achievers and underachievers was "always." When the data from each group were analyzed separately, the mode among the gifted achievers was "always" (76.19%, n = 32), and the most common response among gifted underachievers was also "always" (66.67%, n = 4). Figure 14 provides a summary of the responses.

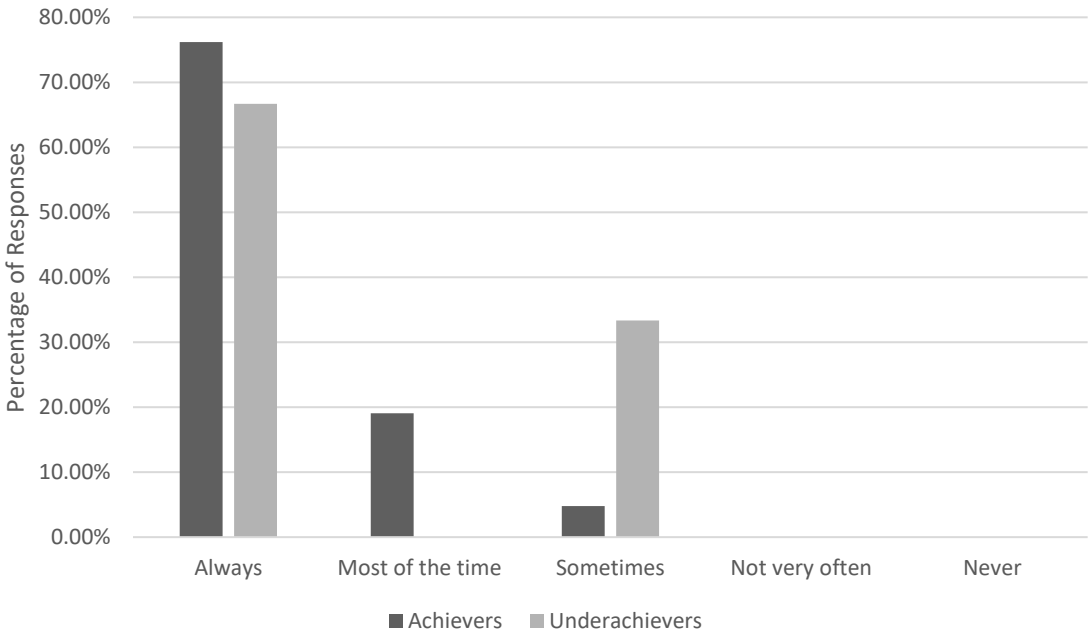

Figure 14. Student responses to survey statement, "I want to do my best in school, and my work shows my abilities."

When asked to respond to the survey statement, "I enjoy learning," 35.42% (*n* = 17) revealed they always enjoyed learning, 37.50% (*n* = 18) said they enjoyed learning most of the time, 12.50% (*n* = 6) enjoyed learning sometimes, 8.33% (*n* = 4) responded they did not enjoy leaning often, and 6.25% (*n* = 3) never enjoyed learning. The mode of this survey question relating to attitudes toward school and learning of both achievers and underachievers was "most of the time." When the data were analyzed separately, the mode among the gifted achievers was "most of the time" (40.48%, *n* = 17), while the most common response among gifted underachievers was "sometimes" (33.33%, *n* = 2). Figure 15 provides a summary of the responses.

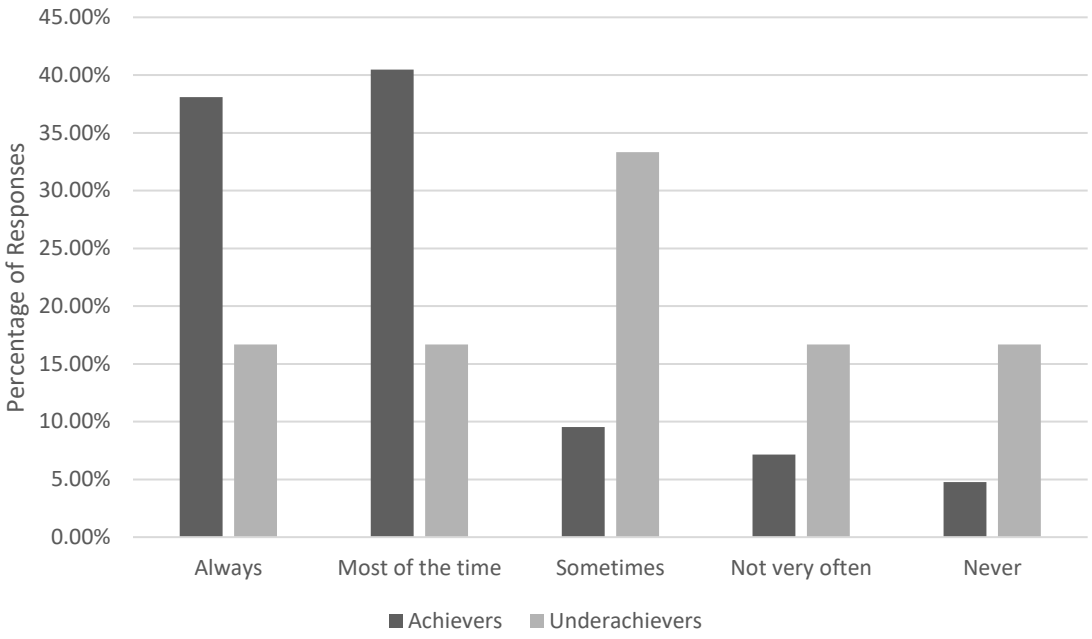

Figure 15. Student responses to survey statement, "I enjoy learning."

When asked to respond to the survey statement, "I find my assignments to be interesting to me," 12.5% (*n* = 6) indicated they always found assignments to be interesting, 39.58% (*n* = 19) said they found assignments to be interesting most of the time, 33.33% (*n* = 16) replied sometimes, 14.58% (*n* = 7) responded they did not find assignments to be interesting very often, and 0% (*n* = 0) never found assignments to be interesting. The mode of this survey question relating to attitudes toward school and learning of both achievers and underachievers was "most of the time." When the data from each group were analyzed, the mode among the gifted achievers was "most of the time" (42.86%, *n* = 18), while the most common response among gifted underachievers was "sometimes" (50%, *n* = 3). Figure 16 provides a summary of the responses.

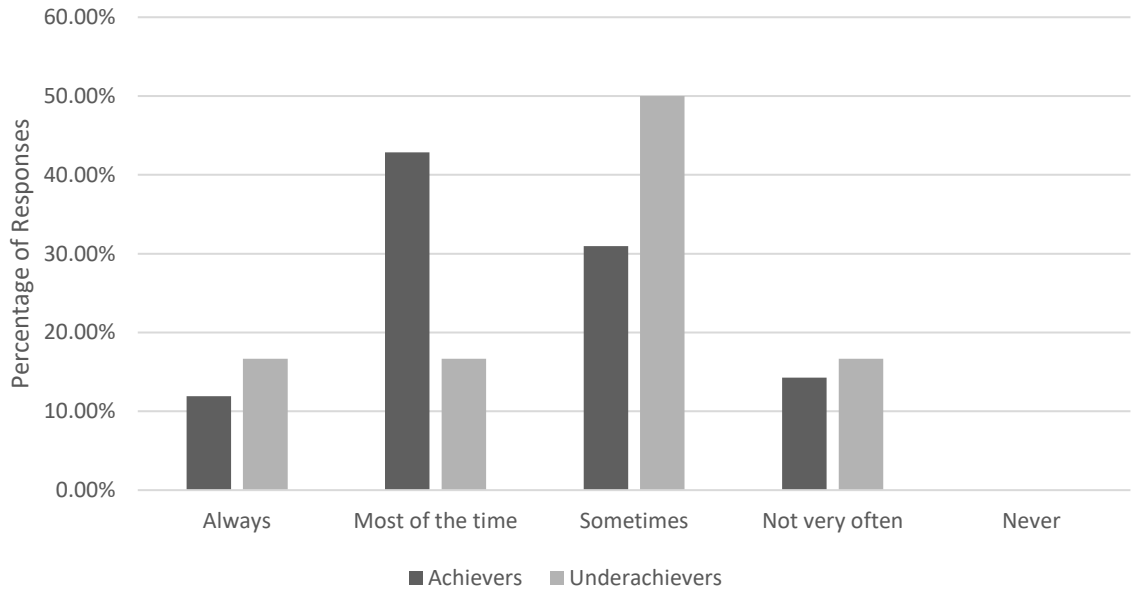

Figure 16. Student responses to survey statement, "I find my assignments to be interesting to me."

When asked to respond to the survey statement, "I do my best even when I already know the information being taught," 62.5% (n = 30) indicated always, 27.08% (n = 13) said most of the time, 8.33% (n = 4) responded sometimes, 2.08% (n = 1) responded not very often, and 0% (n = 0) said never. The mode of this survey question relating to attitudes toward school and learning of both achievers and underachievers was "always." When the data from each group were analyzed separately, the mode among the gifted achievers was "always" (61.9%, n = 26), and the most common response among gifted underachievers was also "always" (66.67%, n = 4). Figure 17 provides a summary of the responses.

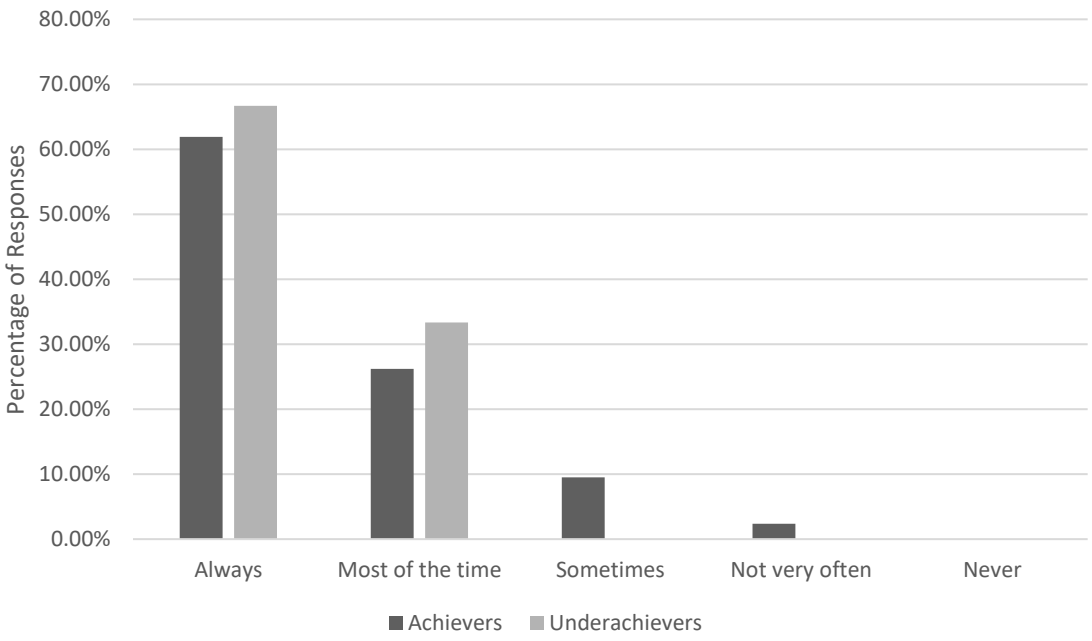

Figure 17. Student responses to survey statement, "I do my best even when I already know the information being taught."

When asked to respond to the survey statement, "I do my best even when I do not see any value in or reason for doing the assignment," 62.5% (n = 30) indicated they always did their best even when they saw no value, 20.83% (n = 10) said they did their best most of the time, 10.42% (n = 5) stated sometimes, 6.25% (n = 3) responded not very often, and 0% (n = 0) indicated never. The mode of this survey question relating to attitudes toward school and learning of both achievers and underachievers was "always." When the data from each group were analyzed separately, the mode among the gifted achievers was "always" (61.90%, n = 26), and the most common response among gifted underachievers was also "always" (66.67%, n = 4). Figure 18 provides a summary of the responses.

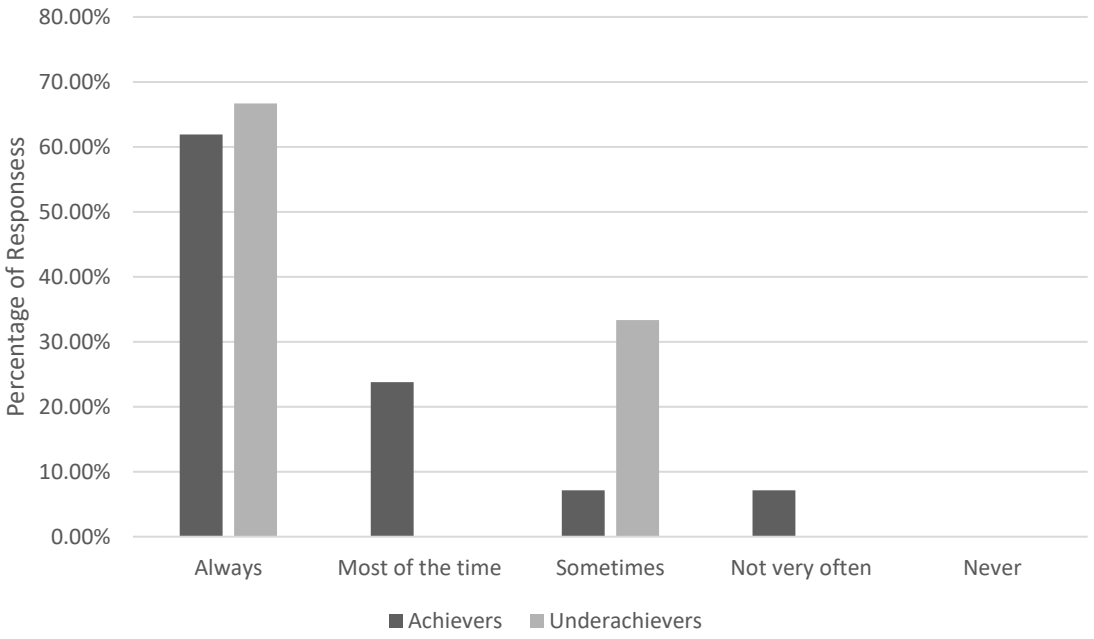

Figure 18. Student responses to survey statement, "I do my best even when I do not see any value in or reason for doing the assignment."

When asked to respond to the survey statement, "I do my best when the assignment does not interest me," 56.25% (n = 27) indicated they always did their best, 31.25% (n = 15) said they did their best most of the time, 8.33% (n = 4) did their best sometimes, 4.17% (n = 2) responded they did not do their best very often, and 0% (n = 0) indicated never. The mode of this survey question relating to attitudes toward school and learning of both achievers and underachievers was "always." When the data from each group were analyzed separately, the mode among the gifted achievers was "always" (57.14%, n = 24), and the most common response among gifted underachievers was also "always" (50%, n = 3). Figure 19 provides a summary of the responses.

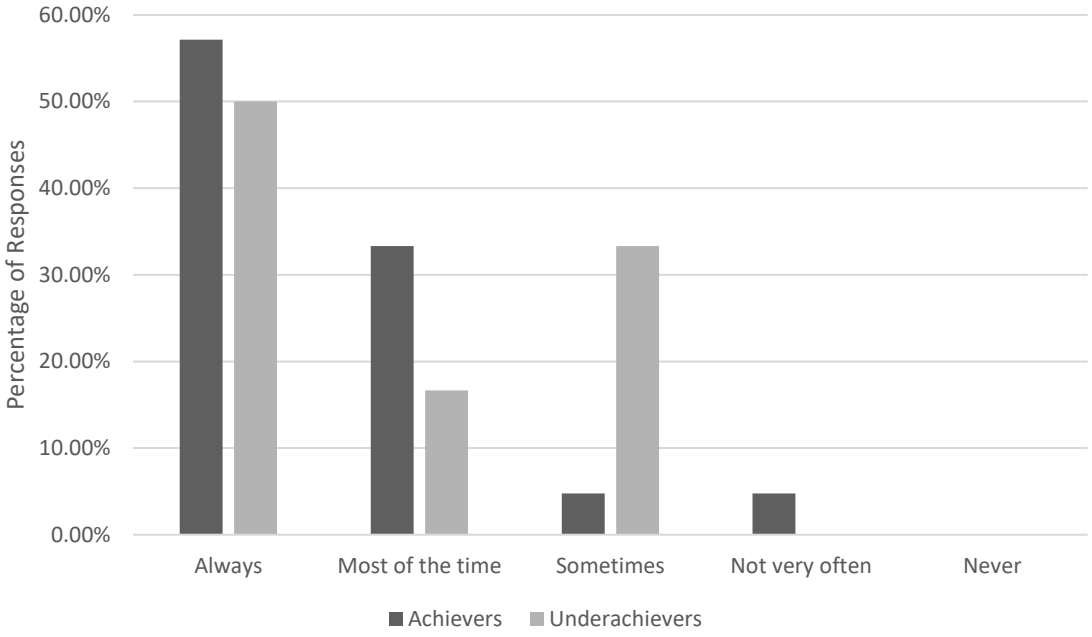

Figure 19. Student responses to survey statement, "I do my best even when the assignment does not interest me."

When asked to respond to the survey statement, "I have a good attitude toward school and learning," 43.75% (*n* = 21) indicated they always had a good attitude, 37.50% (*n* = 18) said they had a good attitude most of the time, 10.42% (*n* = 5) had a good attitude sometimes, 6.25% (*n* = 3) responded they did not have a good attitude very often, and 2.08% (*n* = 1) never had a good attitude. The mode of this survey question relating to attitudes toward school and learning of both achievers and underachievers was "always." When the data from each group were analyzed separately, the mode among the gifted achievers was "always" (47.62%, *n* = 20), while the most common responses among gifted underachievers were "most of the time" (33.33%, *n* = 2) and "sometimes" (33.33%, *n* = 2). Figure 20 provides a summary of the responses.

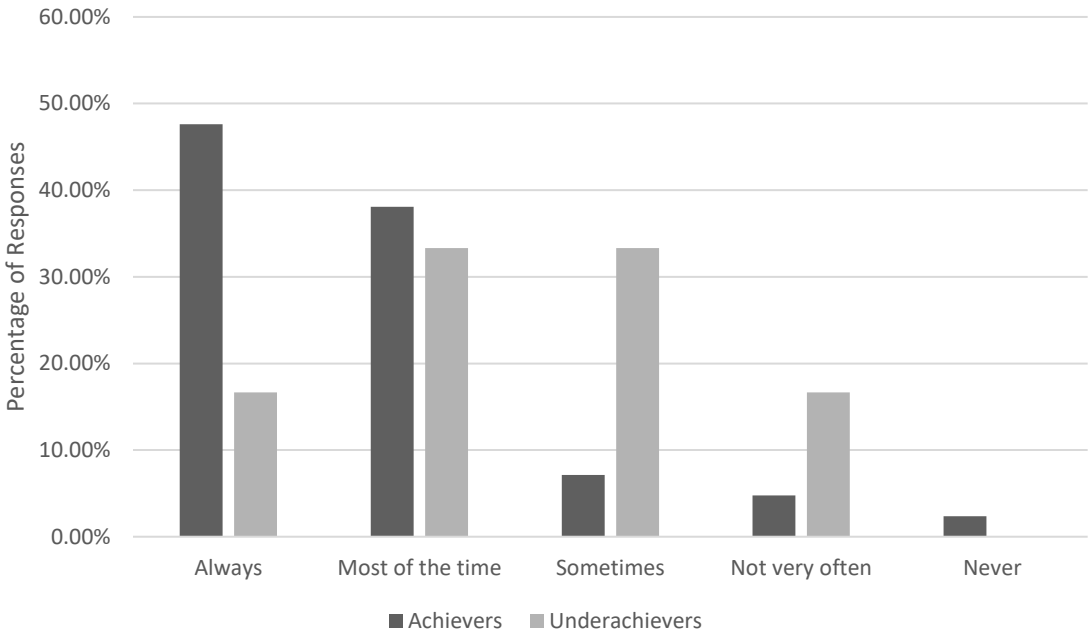

Figure 20. Student responses to survey statement, "I have a good attitude toward school and learning."

The Mann-Whitney *U* test was used to understand whether attitudes toward school and learning differed between achieving and underachieving gifted students (Milenovic, 2011). The dependent variable, attitudes toward school and learning, was measured on an ordinal five-point frequency scale with responses ranging from always to never (Laerd Statistics, 2013). The dependent variable consisted of two groups: achievers and underachievers. The Mann-Whitney *U* test was applied to each survey question to determine if there was a significant difference between the two groups (Fraenkel et al., 2015). With the $\alpha = 0.05$ and the critical z value of ± 1.96, the following resulted when students were asked to respond to survey statements relating to attitudes toward school and learning (Laerd Statistics, 2013):

- *Getting good grades is important to me.* The mean of combined ranks (24) showed no statistically significant difference, $U = 107$, $z = -0.4941$, $p = .62414$.
- *My school is a fun, safe place to learn.* The mean of combined ranks (24) showed no statistically significant difference, $U = 68.5$, $z = 1.7214$, $p = .08544$.
- *I have a good relationship with my teachers.* The mean of combined ranks (23) showed no statistically significant difference, $U = 59$, $z = 1.9198$, $p = .05486$.
- *I want to do my best in school, and my work shows my abilities.* The mean of combined ranks (24) showed no statistically significant difference, $U = 104$, $z = 0.5897$, $p = .5552$.
- *I enjoy learning.* The mean of combined ranks (24.5) showed no statistically significant difference, $U = 70$, $z = 1.7301$, $p = .08364$.
- *I find my assignments to be interesting to me.* The mean of combined ranks (24.5) showed no statistically significant difference, $U = 108$, $z = 0.5455$, $p = .58232$.
- *I do my best even when I already know the information being taught.* The mean of combined ranks (24.5) showed no statistically significant difference, $U = 129.5$, $z = -0.0935$, $p = .92828$.
- *I do my best even when I do not see any value in or reason for doing the assignment.* The mean of combined ranks (24.5) showed no statistically significant difference, $U = 125$, $z = 0.0155$, $p = .98404$.

- *I do my best even when the assignment does not interest me.* The mean of combined ranks (24.5) showed no statistically significant difference, $U = 107$, $z = 00.5767$, $p = .56192$.
- *I have a good attitude toward school and learning.* The mean of combined ranks (24.5) showed no statistically significant difference, $U = 101$, $z = 0.7637$, $p = .44726$.

The Mann-Whitney *U* test was used to understand whether the perceived value of educational experiences and attitudes toward school and learning differed between achieving and underachieving students. Table 2 shows the summary of Mann-Whitney *U* rank sum analysis of the survey responses related to perceptions of attitudes toward school and learning. The test showed no statistically significant difference between the two groups.

Table 2

Summary of Mann-Whitney U Rank Sum Analysis Relating to Attitudes Toward School

Survey Question	*U*	*z*	*p*	Sum of Ranks	Mean of Ranks	Result	
11	107	-0.4941	.62414	1128	24	$p > .05$	NS
12	68.5	1.7214	.08544	1128	24	$p > .05$	NS
13	59	1.9198	.05486	1035	23	$p > .05$	NS
14	104	0.5897	.5552	1128	24	$p > .05$	NS
15	70	1.7301	.08364	1176	24.5	$p > .05$	NS
16	108	0.5455	.58232	1176	24.5	$p > .05$	NS
17	129.5	-0.0935	.92828	1176	24.5	$p > .05$	NS
18	125	0.0155	.98404	1176	24.5	$p > .05$	NS
19	107	0.5767	.56192	1176	24.5	$p > .05$	NS
20	101	0.7637	.44726	1176	24.5	$p > .05$	NS

Note. The critical value for *U* is based on the alpha level of 5% and a two-tailed null hypothesis. The value of *z* and the associated value of *p* for the Mann-Whitney *U* test at .05 level of significance is 1.96.

The results of the responses of all 10 survey statements relating to attitudes toward school and learning indicated no difference existed between the ranks of the group of gifted achievers and the group of gifted underachievers. Therefore, the null hypothesis was not rejected.

Research Question Three: Teacher Training

What are the perceptions of regular education teachers in regard to meeting the needs of gifted students in their classrooms in the following areas: social and emotional, academic, and training and professional development?

This question was analyzed using frequency distribution and descriptive statistics to show the mode of the responses to the survey questions in order to determine patterns and trends (Laerd Statistics, 2013). Twenty-four certified teachers of fourth through sixth grades responded to the survey. Their responses to the close-ended questions on the survey in regard to meeting the needs of gifted students are illustrated in Figure 21.

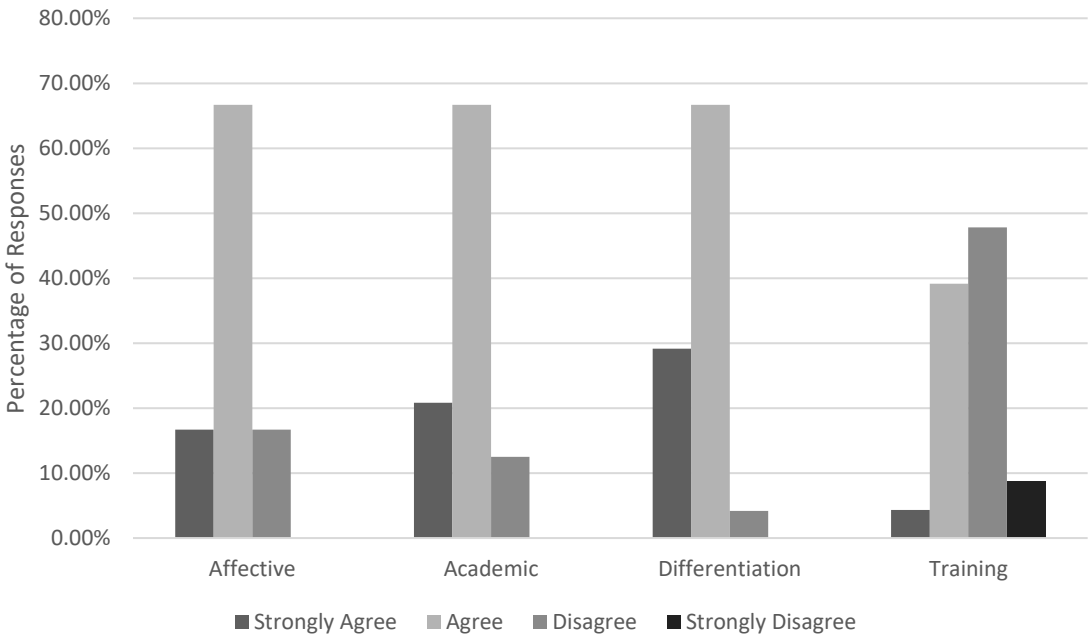

Figure 21. Teacher responses to survey statements relating to meeting the needs of gifted students.

Of the 24 participants responding to the survey statement, “I understand the social and emotional, or affective needs, of gifted students,” 16.67% (*n* = 4) strongly agreed, 66.67% (*n* = 16) agreed, 16.67% (*n* = 4) disagreed, and none strongly disagreed. The mode was teachers “agree” they understood the affective needs of gifted students with a variance of 0.33.

To gain insight, teachers were asked to state ways in which they meet the affective needs of gifted students in their classrooms. Of those who responded, 83.3% (*n* = 20) strongly agreed or agreed they understood the affective needs of gifted students. Of those who strongly agreed or agreed, 45% (*n* = 9) stated they addressed those needs as follows: (a) listening and working through problems, (b) providing leadership roles in the classroom, (c) recognizing the unique qualities in individual students, (d) forming relationships by “learning about interests,” (e) observing social interactions, (f) being flexible, (g) providing “structured, safe opportunities for social interaction and cooperative learning,” (h) supporting and facilitating risk-taking, (i) empathizing with students’ feelings, and (j) teaching coping skills. However, 55% (*n* = 11) of the teachers who reported they strongly agreed or agreed stated they were meeting affective needs as follows: (a) using technology to add enrichment, (b) providing challenging activities and higher-order thinking questions, (c) teaching based on needs, (d) providing “projects and discussions that allow students to push themselves to a higher level,” and (e) differentiating.

Of the 24 participants responding to the survey statement, “I understand the academic needs of gifted students,” 20.83% (*n* = 5) strongly agreed, 66.67% (*n* = 16)

agreed, 12.50% (*n* = 3) disagreed, and none strongly disagreed. The mode was teachers "agree" they understood the academic needs of gifted students with a variance of 0.33.

Teachers were asked to respond to the statement "I provide differentiated instruction and/or make adjustments to assignments to meet the needs of gifted students." Of the 24 participants responding, 29.17% (*n* = 7) strongly agreed, 66.67% (*n* = 16) agreed, 4.17% (*n* = 1) disagreed, and none strongly disagreed. The mode was "agree" with a variance of 0.27.

To attain a better understanding of the teaching methods used to meet the academic needs of gifted students, teachers were asked to describe those strategies. Differentiated strategies teachers incorporated in their classrooms to meet the academic needs of gifted students included higher-order thinking, choice boards, leveled questioning, independent studies, choice of topics of individual interest, project-based learning, flexible grouping, accelerated learning, and inquiry-based projects.

Teachers were asked to respond to the statement "I am equipped with training and tools to meet the needs of an underachieving gifted student in my classroom." Of the 23 responses, only 4.35% (*n* = 1) strongly agreed, 39.13% (*n* = 9) agreed, 47.83% (*n* = 11) disagreed, and 8.70% (*n* = 2) strongly disagreed. The mode was "disagree" with a variance of 0.50. Figure 22 demonstrates the types of training experienced.

Only 17.65% (*n* = 3) had attended one or more college courses, 35.29% (*n* = 6) had attended professional development opportunities offered by the district in which they were employed, 58.83% (*n* = 10) had received training through collaboration with gifted education teachers, and 23.53% (*n* = 4) participated in a book study. Most commonly, teachers obtained information and strategies by collaborating with gifted education

teachers. The three responses from those teachers who had attended one or more college courses indicated the teaching strategies learned from those courses included differentiated instruction, student choice, and acceleration.

Teacher participants indicated professional development opportunities relating to gifted education in which they would be interested included gifted underachievement, affective needs, differentiation strategies, project-based learning, and motivating gifted students. Further, teachers indicated they would like to collaborate more with gifted education teachers. As a result of collaboration with gifted teachers, classroom teachers indicated they would like to learn more about the gifted curriculum in order to make connections in the regular classroom. Classroom teachers reported their gifted students would benefit from ideas for higher-level thinking and more challenging activities. Teachers also showed a need for and were interested in better understanding gifted students and their needs.

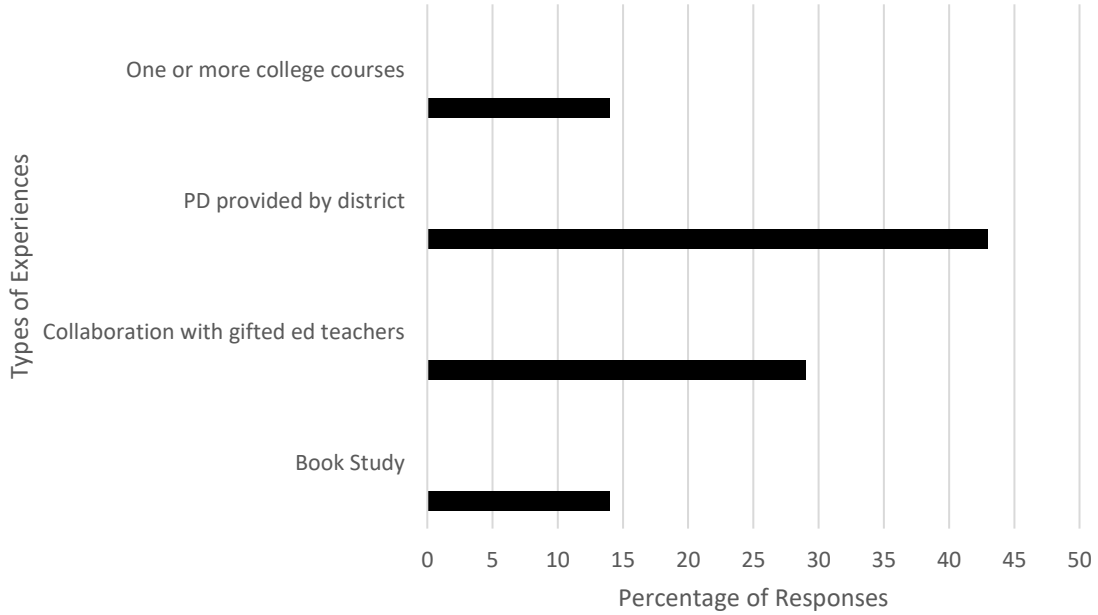

Figure 22. Teacher responses to survey statements relating to training received to meet the needs of gifted students.

Summary

This quantitative study was designed to evoke the perceptions of gifted students regarding their own educational experiences in regular education classrooms and their attitudes toward school and learning. The responses from the student surveys were analyzed and each survey response was summarized, showing the comparison between the responses from both achievers and underachievers. The responses to the teacher surveys were analyzed and summarized using descriptive statistics showing frequency distribution, patterns, and trends.

Chapter Five includes a detailed discussion of the findings and addresses each research question. Conclusions are revealed and aligned with and compared to previous

research. Implications of practice are discussed, as well as recommendations for future research.

Chapter Five: Summary and Conclusions

When the academic needs of gifted students are not being met on a regular basis, underachievement can occur (Brulles & Winebrenner, 2011; Snyder & Linnenbrink-Garcia, 2013). As much as half of the gifted population achieve below their potential (Morisano & Shore, 2010). Gifted students have unique characteristics and needs which must be satisfied (Bakar, 2016). Teachers often enter classrooms with the absence of proper training to adequately meet these needs; thus, the onset of underachievement occurs (Hogrebe, 2015; Szymanski & Shaff, 2013).

There are several factors contributing to underachievement in gifted students including fear of failure, lack of motivation, perceived value of academics, insufficient challenges in the curriculum, class setting, peer influence, and negative attitudes toward school and learning (Erisen et al., 2016; Schultz, 2002; Snyder & Linnenbrink-Garcia, 2013). In order to diminish or reverse underachievement in gifted students, teachers must understand the academic and affective needs of gifted students (Heald, 2016; Ozcan, 2016). The educational system must place more focus on the needs of gifted students, equipping teachers with the proper training and skills to provide positive learning environments for gifted students (Szymanski & Shaff, 2013).

The purpose of this quantitative study was to determine if there is a difference between perceptions of educational experiences in regular education classrooms and attitudes toward school and learning between achieving and underachieving gifted students. In addition, this study was designed to determine if regular education teachers believe they are properly trained to meet the needs of the gifted students in their classrooms. Data were analyzed to show comparisons, relationships, and patterns and

trends in gifted students' perceptions of educational experiences and attitudes toward school. In this chapter, the findings, supported by data, are discussed. Conclusions, implications for practice, and recommendations for future research are included.

Findings

This quantitative study involved the exploration of gifted students' perceptions of their educational experiences in the regular classroom and of their attitudes toward school and learning. The perceptions of regular education teachers were also elicited in regard to meeting the needs of gifted students in their classrooms. Surveys were completed by students, and the responses were analyzed to determine the differences between gifted achievers and underachievers pertaining to educational experiences and attitudes toward school and learning. Surveys were completed by teachers, and the responses were analyzed to determine perceptions of their training and knowledge in meeting the needs of gifted students. The results were summarized, and each research question was addressed.

Research question one. What is the difference in the perceived value of educational experiences in the regular education classroom between achieving and underachieving gifted students?

The gifted students who participated in the study were asked to respond to 10 survey statements using a five-point Likert-type scale relating to their perceptions of educational experiences in regular education classrooms. The survey statements referred to educational experiences including choices in learning, challenging activities, value and interest of assignments, differentiation, curriculum, and collaboration with intellectual peers. The results from the group of achieving gifted students were compared to those of

the group of underachieving students using the Mann-Whitney *U* nonparametric test. The results of the test were analyzed and indicated no statistical significant difference between the two groups. Therefore, the null hypothesis was not rejected, and there was no statistical significant difference in the perceived value of educational experiences in the regular education classroom between achieving and underachieving gifted students.

While there was no significant difference between the two groups, previous researchers have indicated educational experiences are among the factors relating to underachievement in gifted students. Brulles and Winebrenner (2011) found students placed in traditional classroom settings with traditional teaching strategies do not grow academically. Upon further review of the responses to the survey statements relating to educational experiences, while no significant statistical differences were found, there were some dissimilarities in the responses of the achieving and underachieving groups.

The responses to the survey statement, "I have choice in my learning" indicated some difference between the two groups of students. The mode of the achieving students was "sometimes" (45.24%), while the mode of the underachieving students was "not very often" (50%). Half of the gifted underachievers stated they did not have choices in their learning very often. The responses coincide with previous research. Garn and Jolly (2014) concluded a learning environment supporting the needs of gifted students is one which provides meaningful choices of interest, thus resulting in higher engagement levels. The responses of the underachieving students confirm the conclusions of Schultz (2002), who stated in order for students to remain actively involved in the learning process, they must be given choices in learning. By allowing choices in learning, academic achievement can be positively impacted (Hogrebe, 2015).

The responses to the survey statement, “My teacher provides a variety of learning tools that are interesting to me” indicated some difference between the two groups. The mode of the responses of the achieving students was “sometimes” (40.48%) and “not very often” (40.48%). Of the underachieving students’ responses, 66.67% responded “sometimes.” These responses correspond with research conducted by Siegel et al. (2014), who found a variety of instructional strategies are necessary for meeting the needs of gifted students. Seedorf (2014) also concurred in order for gifted students to remain engaged, they “need a variety of instructional activities” (p. 249).

The responses to the survey statement, “My teacher provides alternative assignments for me when I already know the information being taught” indicated no differences between the two groups. However, the responses of the underachieving students confirm previous research indicating the need for differentiated instruction. Teachers who differentiate address the unique qualities of all students in the classroom and provide lessons applicable to individual needs (Altintas & Ozdemir, 2015). All but one (88.3%) of the gifted underachievers responded they were never provided alternative assignments when they had already mastered information being introduced. One of the barriers for gifted students is an unchallenging curriculum (Garn & Jolly, 2014; Snyder & Linnenbrink-Garcia, 2013). When gifted students are not challenged, they become “bored with school” (Hoover-Schultz, 2005, p. 49), which can lead to academic underachievement (Ritchotte et al., 2015).

The responses to the survey statement, “I get to work in small groups with my intellectual peers” indicated some difference between the two groups. The mode of the responses of the achieving group was “not very often” (47.62%), while the mode for the

underachieving group was “sometimes” (66.67%). Accariya (2016) found gifted students who are placed in class settings with their intellectual peers have more significant learning opportunities. When gifted students are grouped with their intellectual peers, they are driven to high achievement (Brulles & Winebrenner, 2011).

Research question two. What is the difference in attitudes toward school and learning between achieving and underachieving gifted students?

The gifted students participating in the study were asked to respond to 10 survey statements using a five-point Likert-type scale relating to their attitudes toward school and learning. The survey statements referred to specific attitudes toward school including grades, learning environment, relationships with teachers, motivational factors, and enjoyment in learning. The results from the group of achieving gifted students were compared to those of the group of underachieving students using the Mann-Whitney *U* nonparametric test. The results of the test were analyzed and showed no statistical significant difference between the two groups. Therefore, the null hypothesis was not rejected, and there was no difference in attitudes toward school and learning between achieving and underachieving gifted students.

While there was no significant statistical difference between the two groups, Brulles and Winebrenner (2011) indicated attitudes toward school and learning are among the factors relating to underachievement in gifted students. Upon further review of the responses to the survey statements relating to attitudes toward school and learning, there were some dissimilarities in the responses of the achieving and underachieving groups.

The responses to the survey statement, “My school is a fun, safe place to learn” indicated some difference between the two groups. The mode of the responses of the achieving group was “always” (45.24%), while the mode for the underachieving group was “always” (33.33%) and “not very often” (33.33%). The most common responses within the underachieving group were significantly different. The responses indicated the achieving group of gifted students had a more positive attitude toward their learning environments with over half stating their school was always or most of the time a fun, safe place to learn. Over half of the underachieving group stated their school was rarely or never a fun, safe place to learn. These results confirm similar conclusions made by previous researchers. Accariya (2016) found a positive, supportive, accepting environment provides opportunities for higher achievement. A positive social and academic setting produces more positive attitudes toward school and learning (Moreira et al., 2015).

The responses to the survey statement, “I enjoy learning” indicated some difference between the two groups. The mode among the gifted achievers was “most of the time” (40.48%), while the mode of the gifted underachievers was “sometimes” (33.33%). Over half of the achieving group of students stated they enjoy learning always or most of the time. These results confirm previous research, which indicated positive learning environments increase enjoyment in learning and higher achievement levels (Accariya, 2016).

The responses to the survey statement, “I find my assignments to be interesting to me” indicated some difference between the two groups. The mode among gifted achievers was “most of the time” (42.86%), while the most common response among

gifted underachievers was “sometimes” (50%). There was only a slight difference in the mode between the two groups of students; however, over half of the gifted achievers found their assignments to be interesting sometimes, most of the time, or always. Over half of the gifted underachieving group found their assignments to be interesting sometimes or not very often. These responses confirm previous findings indicating effective teachers provide interesting activities designed to meet intellectual needs (Accariya, 2016; Heald, 2016). Accariya (2016) also found students are more encouraged to learn when presented with intriguing lessons. Snyder and Linnenbrink-Garcia (2013) concurred gifted underachievers have low interest in academics.

The responses to the survey statement, “I have a good attitude toward school and learning” indicated some differences between the two groups. The mode among gifted achievers was “always” (47.62%), and the mode among gifted underachievers was “most of the time” (33.33%) and “sometimes (33.33%). While there was only a slight difference between the responses of achievers and underachievers, overall the achieving group had a more positive attitude towards school and learning with 85.71% stating “always” or “most of the time.” The results confirm prior research by Ritchotte et al. (2014), who found negative attitudes toward school begin to develop at the onset of underachievement.

Research question three. What are the perceptions of regular education teachers in regard to meeting the needs of gifted students in the following areas: social and emotional, academic, and training and professional development?

The certified teachers participating in the survey were asked to respond to five open-ended and five close-ended survey questions. The teachers used a five-point Likert-

type scale to respond to the close-ended questions. The mode of each of the close-ended questions was discovered, and the results were analyzed using frequency distribution. The open-ended survey responses provided a better understanding of perceptions.

When teacher participants were asked about their understanding of the social and emotional needs of gifted students, the most common response was "agree." Over half of the teachers surveyed agreed they understand the affective needs of gifted students in their classrooms. These responses were analyzed and compared to previous research in this area. Just under half (45%) of those who perceived themselves to have an understanding provided responses proven effective by previous researchers.

Teachers who are attentive and involved should be able to identify the unique talents of gifted students in their classrooms and should encourage those talents in both academic and affective aspects (Accariya, 2016). The responses from the teacher participants included listening and recognizing individual needs and interests, aligning to the findings of Rubenstein et al. (2012), who found affective needs are met by teachers who listen and show an interest in their students. The responses also included the importance of building relationships, which has also been proven effective in meeting the affective needs of gifted students. Landis and Reschly (2013) found meaningful relationships with teachers to be a valid intervention.

The most common response to the survey statement regarding the understanding of academic needs of gifted students in the classroom was "agree." Of the teachers surveyed, 66.67% agreed they understand the academic needs of gifted students, while 12.5% disagreed. A common strategy used in meeting academic needs of gifted students is differentiated instruction. The most common response to the survey statement

regarding differentiation was “agree.” Of the teachers surveyed, 66.67% agreed they provide differentiated instruction and adjust assignments to meet the needs of gifted students, whereas 4.17% disagreed.

Prior research confirms the open-ended questions provided data indicating a majority of the teachers surveyed who answered “agree” had a grasp on understanding the academic needs of gifted students and addressing those needs through differentiation. Educators of gifted students need to teach more deeply, not more content (Merriman, 2012). The teacher responses including higher-order thinking, independent studies, choices in learning, project-based learning, flexible grouping, and acceleration, all of which coincide with the effective teaching strategies for gifted students found in previous research. According to the National Association for Gifted Children (2014), students placed in environments where in-depth learning, critical thinking, and challenges are present are less likely to underachieve. Seedorf (2014) further explained an optimal environment for gifted students includes individual or small group self-instructed activities, hands-on activities, and modifications. According to research, the above-mentioned teacher responses provide a learning environment conducive to meeting the needs of gifted students. However, two responses indicated misperceptions of differentiation and challenging gifted students.

One teacher indicated he or she met the academic needs of gifted students by “not making them make up assignments they have missed while they are gone to their gifted class.” Another stated, “I will add extra questions to an assignment.” These teachers agreed they had an understanding of the academic needs of gifted students and differentiated in the classroom; however, according to previous research, there was no

indication either was taking place. Snyder and Linnenbrink-Garcia (2013) found giving gifted students extra or "busy" work does not meet their academic needs (p. 216). Furthermore, gifted students become frustrated when they are expected to complete additional work rather than appropriately challenging work (Snyder & Linnenbrink-Garcia, 2013).

When asked to respond to a survey statement regarding teacher training in gifted education, the mode of responses was "disagree." While 39.13% agreed they had proper training and tools to meet the needs of gifted students, 47.83% disagreed. Very few indicated having attended college courses on this topic. Although 35.29% had received professional development opportunities, over half of the teachers received training through collaboration with gifted education teachers. Others participated in book studies relating to gifted students.

These results confirm previous research conducted in teacher training in gifted education. Heald (2016) concluded teachers need ongoing training in order to understand underachievement in gifted students, provide proper guidance, and implement effective strategies for reversal. Although ongoing training is recommended, Szymanski and Shaff (2013) discovered teachers are not receiving the proper training to assist them in these areas. Brulles and Winebrenner (2011) concurred teachers need specialized training in order to effectively meet the needs of gifted students in their classrooms.

Conclusions

Conclusions were based on participant responses to survey questions. The responses were compared to results from previous research. Analysis of the data, along with the findings of previous research, resulted in the following conclusions.

Research question one addressed the difference in the perceived value of educational experiences in the regular education classroom between achieving and underachieving gifted students. Analysis of the data resulted in no significant difference between achieving and underachieving gifted students. However, Brulles and Winebrenner (2011) discovered gifted students, regardless of achievement levels, need and deserve effective educational experiences. The results of the study revealed the needs of all students surveyed are not consistently being met. The discrepancies in the responses could be dependent upon the teacher and classroom environment. Siegle et al. (2014) found in their study teachers were the "determining factor" in the achievement levels of their students (p. 44). Khalil and Accariya (2016) concurred, stating a gifted student's academic success is influenced by the teacher.

The responses to survey statements relating to educational experiences ranged from "always" to "never" from both the gifted achievers and underachievers. The responses could be an indication those receiving the educational experiences conducive to meeting the needs of gifted students are placed in positive classroom environments with interaction with intellectual peers and teachers implementing effective teaching strategies to meet their needs. Bakar (2016) found unless the unique learning needs of gifted students are being met, gifted students will encounter problems in regular education classrooms. Brulles and Winebrenner (2011) discovered gifted students grouped with their intellectual peers are more likely to take academic risks, challenge each other, and work to high achievement. In addition, educators who provide more favorable environments for gifted students use less-conventional approaches to teaching and are more apt to differentiate instruction (Hoover-Schultz, 2005).

Upon review of the survey statements relating to educational experiences of gifted underachievers, 86% gave similar responses and reported they sometimes, rarely, or never receive choices in learning, differentiated instruction, and/or a challenging curriculum. Based upon the responses, the following assumption can be made: the 14% of students who often or always perceive their educational experiences as being conducive to meeting their needs could be placed in classrooms with teachers who understand their needs and implement effective strategies.

Research question two addressed the difference in attitudes toward school and learning between achieving and underachieving gifted students. Analysis of the data resulted in no significant difference between achieving and underachieving gifted students. While there was no significant statistical difference between the two groups, researchers have indicated factors relating to underachievement in gifted students include attitudes toward school and learning.

The discrepancies in the results and the previous research could be due to sample size, teacher knowledge, classroom environment, and/or motivation levels. Altintas and Ozdemir (2015) found achievement increases when teachers address the unique qualities of all students and differentiate instruction to meet their needs. Accariya (2016) found motivation increases when students receive "innovative and diverse instruction methods" encouraging creativity and when they are presented with challenges (p. 101). When compared to other less effective methods, students feel frustration, eradicating their motivation to learn and resulting in negative attitudes toward school and learning (Accariya, 2016).

The results of the responses showed no significant difference between the achieving and underachieving groups relating to school environment and enjoyment in learning. When asked about their school environment, there were discrepancies within each group with responses of achievers ranging from "always" to "not very often" and responses from underachievers ranging from "always" to "never." The wide range of responses could again be due to the teacher and class setting.

Accariya (2016) found the class setting has a role in the learning process. By placing students in a positive atmosphere with their intellectual peers, enjoyment and achievement increase (Accariya, 2016). When comparing the responses to previous research, the following assumption could be made: the "always" and "most of the time" responses could indicate those students are placed in a positive classroom environment with intellectual peers and teachers who understand their affective and academic needs and implement effective strategies. Students placed in a classroom environment less conducive to their needs may have responded with "not very often" or "never."

The most surprising results of the survey responses were those relating to students working to their abilities. The data indicated getting good grades was important to a majority of both achieving and underachieving gifted students. Most students of both groups said they desire to always do their best and that their work demonstrates their abilities. However, data from standards-based grades contradict the responses of the underachieving groups. The students selected to participate in the study had been identified as gifted with high potential; however, their average or below average grades indicated they were not working to their abilities.

Gifted students are unique in their abilities, talents, and achievement levels. Perhaps this is the reason underachievement in gifted students has "remained a mysterious concoction of factors" (Schultz, 2002, p. 206). Regardless of whether identified as achieving or underachieving, there was no significant difference in the educational experiences or attitudes toward school and learning between the participant groups in the study. Siegle et al. (2014) concluded not all gifted students have the drive to achieve academically. The responses confirmed previous research, as some underachieving gifted students may enjoy school and learning and are receiving educational experiences conducive to their needs, but they are lacking the drive to succeed.

Research question three addressed the perceptions teachers have regarding their understanding and training to meet the needs of gifted students. To provide educational experiences in which gifted students will excel, general education teachers need to understand academic and affective needs of these students (Accariya, 2016). Some teacher participants had a grasp on understanding the needs of gifted students, while others do not. Those who understand the needs of gifted students provided responses indicating they recognize the unique qualities of gifted students and are using differentiated instruction and effective teaching strategies to meet the needs of the gifted students in their classrooms.

Altintas and Ozdemir (2015) found teachers who differentiate address the unique qualities of all students and apply applicable teaching strategies to meet those individual needs. The teacher participants who had a misunderstanding of the needs of gifted students provided responses indicating they provide busy or extra work to meet the needs

of gifted students in their classrooms. Landis and Reschly (2013) concluded when left unchallenged, gifted learners feel they are completing busy work and become frustrated with meaningless assignments. Ritchotte et al. (2014) concurred, stating a common reaction is disengagement, ultimately leading to underachievement.

A concern of researchers in the field of gifted education is that teachers are not being properly trained to meet the needs of exceptionally bright students (Assouline et al., 2015; Bergstrom, 2015; Ozcan, 2016). The results from this study confirm such concern. The study revealed some teachers are meeting those needs, others are not, and some think they are, but from their responses, in reality are not.

Szymanski and Shaff (2008) concluded a lack of training in gifted education can have an impact on the perceptions teachers have of gifted students. Teachers with insufficient training rely on their personal ideas and experiences, which are often invalid (Szymanski & Shaff, 2008). The responses implied some teachers had misperceptions of the affective and academic needs of gifted students. Henderson and Jarvis (2016) found professional development for teachers can correct misperceptions and have a positive impact on the gifted students.

The study confirmed teachers are not properly trained to meet the needs of the gifted students in their classrooms. Ozcan (2016) found teachers lack crucial knowledge beneficial to properly educating gifted learners. Szymanski and Shaff (2013) found teachers are entering classrooms with minimal training in gifted education. The results confirmed the same conclusions previously made by researchers. The teacher participants indicated they are not offered college courses and very few receive professional development in gifted education. Until this problem is solved, it will be

difficult to fully meet the needs of gifted students or to provide them with the educational experiences they deserve in order to avoid underachievement.

Implications for Practice

The purpose of this study was to determine if there is a difference between achieving and underachieving gifted students' perceptions of their own educational experiences in the regular education classrooms and of their attitudes toward school. In addition, the purpose was to determine if teachers believe they are properly trained to meet the needs of gifted students in their classrooms. Student and teacher participants completed surveys, and the data were analyzed. The information obtained from the survey questions was informative and assisted in the advancement of research in the area of gifted underachievement.

Although the data showed no statistically significant difference in the educational experiences and attitudes toward school and learning between gifted achievers and underachievers, previous research indicates these factors contribute to underachievement in gifted students. A number of factors have been determined to cause underachievement in gifted students (Morisano & Shore, 2010). The absence of a challenging curriculum and students finding little or no interest or value in school and academics are among these factors (Merriman, 2012). As a result of this study, greater awareness of this problem could bring about change in teacher training, better preparing teachers with strategies to reverse or eliminate underachievement in gifted students. Based on the findings, the following implications are apparent.

Teachers have insufficient training to properly meet the needs of gifted students in their classrooms. Awareness of the significance of this problem to gifted students and

society should induce colleges and universities to be proactive in reducing or eliminating the problem. Courses should be offered, better preparing pre-service teachers with knowledge and strategies to challenge gifted students and to provide them with educational experiences conducive to their needs. Teachers trained in differentiated instruction could heighten the quality of education received by gifted students.

Awareness should place pressure on school districts to provide quality educational experiences to all students, including gifted students. Since these students are often not considered to be at risk, they are of low priority in the educational system (Ritchotte et al., 2015). The results of this study indicated teachers need and desire professional development opportunities to better equip them to meet the needs of gifted students in their classrooms. This can be done through presentation and collaboration with gifted educators.

Moreover, teachers did not fully understand the difference between the academic and affective needs of gifted students. Some believed they had an understanding, but their responses indicated otherwise. Teachers need to recognize gifted students have unique social and emotional needs that must be met for them to achieve academically. Awareness of the problem of underachievement brings forth the importance of recognizing and meeting affective needs of gifted students. Training for teachers in affective needs through college courses and professional development should have an impact on the relationships of teachers with gifted students in their classrooms. In addition, teachers empowered with knowledge regarding affective needs could eliminate the negative misconceptions often associated with gifted students.

The results of this study intimated there was no significant difference between the educational experiences and attitudes toward school and learning between gifted achievers and underachievers. Self-motivation could be an implied factor of these results. The results of the study did signify teachers are in need of training in gifted education, as the needs of gifted students are not always met in the regular education classroom. Awareness brought about by this study will hopefully have an impact on the educational experiences gifted students receive in the future.

Recommendations for Future Research

This quantitative study focused on underachievement of gifted students and teacher training in gifted education. Underachievement in gifted students is a problem affecting not only students, but also society (Karpinski, 2015; McMath, 2016; Tsai & Fu, 2016). Teachers play an important role in the education of the nation's brightest students, and understanding and meeting the needs of these students should be priority within every school system. Unfortunately, the importance placed on the education of gifted students is inferior to the emphasis placed on the education of below-average students (Karpinski, 2015; Henderson & Jarvis, 2016).

Researchers have proven educational experience and attitudes toward school and learning are factors contributing to underachievement (Brulles & Winebrenner, 2011). Teachers have the responsibility to understand affective and academic needs of gifted students and to address those needs consistently in a regular education classroom. However, a large gap exists regarding the training teachers receive in order to meet those needs.

Recommendations for future research include further investigation of pre-service teacher training and preparedness to serve gifted students upon entering the classroom. Further research into courses in gifted education offered in colleges to pre-service teachers is recommended. Areas of the study should include the following.

- The number of colleges and universities offering and/or requiring gifted education for pre-service teachers.
- The extent of the gifted curriculum covered in those courses.
- The teaching strategies used by teachers who have attended courses relating to gifted education in comparison to those who have not.

Previous research has also indicated the process of disengagement and withdrawal from school and learning occurs over a number of years (Landis & Reschly, 2013). Underachievement and negative attitudes toward school often increase in middle school (Ritchotte et al., 2015). Therefore, recommendations for future research include a more extensive investigation of achieving and underachieving gifted students beginning at an early age. The areas of study should include the following.

- Involvement of students in first through sixth grades.
- A comparison of the number of students identified as underachievers in primary grades to the number in upper grades.
- A comparison of the teaching strategies used at different grade levels.
- Time to follow students involved in the study to determine if any patterns of underachievement occur or are reversed.
- Follow-up with students in secondary grades to determine if any patterns in achievement and/or underachievement exist.

The responses from both groups of students (achieving and underachieving) showed no significant difference between the groups, and upon further review, the responses within each group varied. The following recommendations for future research could give insight on the insignificant differences between the two groups of gifted students:

- Knowing the grade level and teacher of each student would possibly explain some of the responses to the student surveys. Asking students to list their grade levels and teachers would provide identifying information which could be used to compare the responses from both groups. If students from both groups with the same teacher provided the same or similar responses, a good indicator would be the teaching strategies and classroom environment.
- Observations of the students in their regular classroom would be beneficial to the study. The researcher could gain a better understanding of not only the classroom environment, but also of teaching strategies, interaction with peers, and levels of motivation. This process could be implemented using a checklist of behaviors for the observer to document.
- Observations of the students identified as underachievers in the gifted classroom would also be beneficial to the study. The researcher would be able to compare the differences in instruction and the behavior and motivational levels of the underachieving students in both learning environments.

Summary

Underachievement in gifted students is a problem which must be addressed. The educational system is responsible for providing these bright minds and future leaders with

educational experiences to pave a path to success. If adequate education for gifted students is not made a priority, the risk of underachievement will become a substantial problem for educators and a loss to society (Ritchotte et al., 2014; van Donkergoed, 2016).

Underachievement occurs when actual academic performance falls below potential academic performance and can result from a combination of factors (Morisano & Shore, 2010). Fear of failure, lack of motivation, value of academics, curriculum, class setting, peers, and attitudes toward school and learning are all elements researchers have discovered to be causes of underachievement (Erisen et al., 2016; Snyder & Linnenbrink-Garcia, 2013). Researchers have found bright students who do not perform to their abilities are both intriguing and frustrating (Clinkenbeard, 2012).

Teachers play an important role in the education of gifted students. Often, regular education teachers believe gifted students can make it on their own without any additional support and do not see gifted students as being at risk (Ritchotte et al., 2015). These misconceptions need to be addressed, and teachers need to recognize the needs of gifted students and aspire to meet those needs in the regular classroom on a daily basis. To meet the needs of gifted students and to provide an educational experience in which they will excel, general education teachers need to understand the academic and affective needs of these students (Accariya, 2016).

The problem of gifted underachievement can be reversed, but not without effort. Appropriate interventions need to be in place in order to address underachievement in gifted students and to provide learning opportunities to meet their needs (Ritchotte et al., 2015). Preventing or reversing underachievement in gifted students begins with the

teacher (Khalil & Accariya, 2016). Teachers need to be properly trained to meet the needs of gifted students (Teno, 2000). Without this training, teachers are ill-equipped to understand and provide gifted students with educational experiences to prepare them for successful futures.

This quantitative study was designed to compare the perceptions of achieving and underachieving gifted students relating to educational experiences and attitudes toward school and learning. Additionally, the study was constructed to determine the perceptions of teachers of their abilities to properly meet the needs of gifted students in their classrooms. Survey questions were created to acquire responses from gifted students and certified general education teachers. The results from the group of achieving gifted students were compared to those from the group of underachieving students using the Mann-Whitney *U* nonparametric test. The results of the test were analyzed and showed no statistical significant difference between the two groups regarding educational experiences and attitudes toward school and learning.

The certified teachers participating in the survey were asked to respond to five open-ended and five close-ended survey questions. The results of the surveys indicated most commonly teachers agree they understand the affective and academic needs of gifted students. Most teachers agree they use differentiation strategies in the classroom to benefit gifted students. The results of the survey also indicated teachers had not received adequate training in gifted education. Few had attended professional development, while even fewer had taken college courses relating to gifted education.

Conclusions were drawn based on the responses from the student and teacher participants. The responses indicated underachievement is a problem; however, there

was not a significant difference between achieving and underachieving gifted students. While some underachieving gifted students may enjoy school and learning and are receiving educational experiences conducive to their needs, they are lacking the drive to succeed.

Some teachers had an understanding of the needs of gifted students, while others did not. Differentiated instruction and teaching strategies conducive to meeting the needs of gifted students was taking place in some classrooms, but not in others. Teachers are not properly trained to meet the needs of the gifted students in their classrooms.

Underachievement in gifted students is a problem, not just for individual students, teachers, or administrators, but for society. The brightest minds of the future are falling through the cracks. They sit in classrooms without challenge and with teachers who have insufficient training in understanding and meeting their needs. The school system is failing these students, and more must be accomplished in this area in order to secure a successful future for gifted students, which will in turn contribute to the betterment of society.

Appendix A

Student Survey

Please answer the following statements as they relate to your regular classroom experiences.

1. I have choices in my learning.
    A. Always
    B. Most of the time
    C. Sometimes
    D. Not very often
    E. Never
2. The activities I do in school are challenging.
    A. Always
    B. Most of the time
    C. Sometimes
    D. Not very often
    E. Never
3. I learn something new in school every day.
    A. Always
    B. Most of the time
    C. Sometimes
    D. Not very often
    E. Never

4. I complete the assignments I am given with little or no difficulty.

    A. Always

    B. Most of the time

    C. Sometimes

    D. Not very often

    E. Never

5. My teacher provides a variety of learning tools that are interesting to me.

    A. Always

    B. Most of the time

    C. Sometimes

    D. Not very often

    E. Never

6. My teacher provides alternative assignments for me when I already know the information being taught.

    A. Always

    B. Most of the time

    C. Sometimes

    D. Not very often

    E. Never

7. My teacher teaches the class things I already know.

    A. Always

    B. Most of the time

    C. Sometimes

D. Not very often

E. Never

8. I get to work in small groups with my intellectual peers (other gifted students).

A. Always

B. Most of the time

C. Sometimes

D. Not very often

E. Never

9. My teacher asks me to help other students in the classroom with assignments.

A. Always

B. Most of the time

C. Sometimes

D. Not very often

E. Never

10. My teacher helps me when I have a problem.

A. Always

B. Most of the time

C. Sometimes

D. Not very often

E. Never

The following survey questions for students relate to their attitudes toward school and learning.

11. Getting good grades is important to me.
    A. Always
    B. Most of the time
    C. Sometimes
    D. Not very often
    E. Never
12. My school is a fun, safe place to learn.
    A. Always
    B. Most of the time
    C. Sometimes
    D. Not very often
    E. Never
13. I have a good relationship with my teachers.
    A. Always
    B. Most of the time
    C. Sometimes
    D. Not very often
    E. Never
14. I want to do my best in school, and my work shows my abilities.
    A. Always
    B. Most of the time

C. Sometimes

D. Not very often

E. Never

15. I enjoy learning.

A. Always

B. Most of the time

C. Sometimes

D. Not very often

E. Never

16. I find my assignments to be interesting to me.

A. Always

B. Most of the time

C. Sometimes

D. Not very often

E. Never

17. I do my best even when I already know the information being taught.

A. Always

B. Most of the time

C. Sometimes

D. Not very often

E. Never

18. I do my best even when I do not see any value in or reason for doing the assignment.

A. Always

B. Most of the time

C. Sometimes

D. Not very often

E. Never

19. I do my best even when the assignment does not interest me.

A. Always

B. Most of the time

C. Sometimes

D. Not very often

E. Never

20. I have a good attitude toward school and learning.

A. Always

B. Most of the time

C. Sometimes

D. Not very often

E. Never

Appendix B

Teacher Survey

1. I understand the social and emotional, or affective, needs of gifted students.

    A. Strongly Agree

    B. Agree

    C. Disagree

    D. Strongly Disagree

2. In what ways do you feel you meet the affective needs of gifted students in your classroom?

3. I understand the academic needs of gifted students.

    A. Strongly Agree

    B. Agree

    C. Disagree

    D. Strongly Disagree

4. I provide differentiated instruction and/or make adjustments to assignments to meet the needs of gifted students.

    A. Strongly Agree

    B. Agree

    C. Disagree

    D. Strongly Disagree

5. What are some of the teaching strategies you use in your classroom to meet the academic needs of gifted students?

6. I am equipped with training and tools to meet the needs of an underachieving gifted student in my classroom.

A. Strongly Agree

B. Agree

C. Disagree

D. Strongly Disagree

7. What experiences have you had to assist you in meeting the needs of gifted students? Check all that apply.

- One or more college courses
- Professional development opportunities provided by my district
- Collaboration with gifted education teachers
- Book study

8. If you attended college courses for gifted education, what are some of the teaching strategies you learned in those classes?

9. What professional development would you like for your district to offer relating to gifted education?

10. In what ways could the gifted education teacher be a resource to you?

Appendix C

Informed Consent for Participation in Research Activities

INFORMED CONSENT FOR PARTICIPATION IN RESEARCH ACTIVITIES

Underachievement in Gifted Students: Understanding Perceptions of Educational Experiences, Attitudes Toward School, and Teacher Training

Principal Investigator: Paula Macy
Telephone: [redacted] E-mail: [redacted]

Participant_____
Contact info _____

1. You are invited to participate in a research study conducted by Paula Macy under the guidance of Dr. Brad Hanson. The purpose of this research is to determine the potential risk of underachievement in gifted students and to identify appropriate teaching strategies and interventions that would reduce this risk.

2. a) Your participation will involve completing a survey about the following: your understanding of the needs of gifted students you currently have or have had in your classroom; the teaching strategies you use in order to meet those needs; and professional development opportunities regarding gifted students. The survey consists of 15 questions and will be completed electronically. No personal identification information will be asked, so your responses will remain anonymous.

b) The amount of time involved in your participation will be approximately 15 minutes or less.

3. There is a very minimal risk that participants' identities will be revealed.

4. There are no direct benefits for you participating in this study. However, your participation will contribute to the knowledge about the risk of underachievement in gifted students.

5. Your participation is voluntary, and you may choose not to participate in this research study or to withdraw your consent at any time. You may choose not to answer any questions that you do not want to answer. You will NOT be penalized in any way should you choose not to participate or to withdraw.

6. We will do everything we can to protect your privacy. As part of this effort, your identity will not be revealed in any publication or presentation that may result from this study, and the information collected will remain in the possession of the investigator in a safe location.

7. If you have any questions or concerns regarding this study, or if any problems arise, you may call the Investigator, Paula Macy, at [redacted] or the Supervising Faculty, Dr. Brad Hanson, at [redacted]. You may also ask questions of or state concerns regarding your participation to the Lindenwood Institutional Review Board (IRB) through contacting Dr. Marilyn Abbott, Provost, at mabbott@lindenwood.edu or 636-949-4912.

I have read this consent form and have been given the opportunity to ask questions. I will also be given a copy of this consent form for my records. I consent to my participation in the research described above.

_____		_____	
Participant's Signature	Date	Participant's Printed Name	
_____		_____	
Signature of Principal Investigator	Date	Investigator Printed Name	

Appendix D

Assent to Participate in Research

Lindenwood University

ASSENT TO PARTICIPATE IN RESEARCH

Underachievement in Gifted Students: Understanding Perceptions of Educational Experiences, Attitudes Toward School, and Teacher Training

1. My name is Paula Macy.

2. We are asking you to take part in a research study because we are trying to learn more about your regular classroom experiences and how you feel about school and learning.

3. If you agree to be in this study, you will be asked to complete an electronic survey. The survey will have questions about learning activities you do in your regular classroom and how you feel about school and learning.

4. There is a very minimal risk that participants' identities will be revealed.

5. There will be no direct benefits if you participate.

6. Please talk this over with your parents before you decide whether or not to participate. We will also ask your parents to give their permission for you to take part in this study. But even if your parents say "yes," you can still decide not to do this.

7. If you don't want to be in this study, you don't have to participate. Remember, being in this study is up to you, and no one will be upset if you don't want to participate or even if you change your mind later and want to stop.

8. You can ask any questions that you have about the study. If you have a question later that you didn't think of now, you can call me [insert your telephone number] or ask me next time.

9. Signing your name at the bottom means that you agree to be in this study. You and your parents will be given a copy of this form after you have signed it.

_____ _____

Name of Student Date

Appendix E

Informed Consent for Parents to Sign for Student Participation in Research Activities

INFORMED CONSENT FOR PARENTS TO SIGN FOR
STUDENT PARTICIPATION IN RESEARCH ACTIVITIES

Underachievement in Gifted Students: Understanding Perceptions of Educational Experiences, Attitudes Toward School, and Teacher Training

Principal Investigator: Paula Macy
Telephone: [redacted] E-mail: [redacted]

Participant _____
Parent Contact info _____

Dear Parent,

1. Your child is invited to participate in a research study conducted by Paula Macy under the guidance of Dr. Brad Hanson. The purpose of this research is to determine the potential risk of underachievement in gifted students and to identify appropriate teaching strategies and interventions that would reduce this risk.

2. a) Your child's participation will involve completing a survey about his or her educational experiences and attitude toward school and learning. The survey consists of 20 questions. No personal identification information will be asked, so responses will remain anonymous. Approximately 75 subjects may be involved in this research.

b) The amount of time involved in your child's participation will be approximately 15 minutes during his or her gifted class.

3. There is a very minimal risk that participants' identities will be revealed.

4. There are no direct benefits for your child's participation in this study. However, your child's participation will contribute to knowledge about the risk of underachievement in gifted students.

5. Your child's participation is voluntary, and you may choose not to let your child participate in this research study or to withdraw your consent for your child's participation at any time. Your child may choose not to answer any questions that he or she does not want to answer. You and your child will NOT be penalized in any way should you choose not to let your child participate or to withdraw your child.

6. We will do everything we can to protect your child's privacy. As part of this effort, your child's identity will not be revealed in any publication or presentation that may result from this study.

7. If you have any questions or concerns regarding this study, or if any problems arise, you may call the Investigator, Paula Macy, at [redacted] or the Supervising Faculty, Dr. Brad Hanson, at [redacted]. You may also ask questions of or state concerns regarding your participation to the Lindenwood Institutional Review Board (IRB) through contacting Dr. Marilyn Abbott, Provost, at mabbott@lindenwood.edu or 636-949-4912.

I have read this consent form and have been given the opportunity to ask questions. I will also be given a copy of this consent form for my records. I consent to my child's participation in the research described above.

Parent's/Guardian's Signature Date	Parent's/Guardian's Printed Name
Child's Printed Name	
Signature of Investigator Date	Investigator Printed Name

Appendix F

Permission Letter to Research Site

Dear Superintendent,

My name is Paula Macy, and I am in the process of obtaining my Doctorate in Instructional Leadership through Lindenwood University. As part of this process, I am conducting research for my dissertation titled, *Underachievement in Gifted Students: Understanding Perceptions of Educational Experiences, Attitudes Toward School, and Teacher Training.* The purpose of this study is to determine the potential risk of underachievement in gifted students and to identify appropriate teaching strategies and interventions that would reduce this risk.

I am requesting your permission to invite first- through sixth-grade regular education teachers in your district to participate in my study by completing an online survey regarding the following: their understanding of the needs of gifted students they currently have or have had in their classrooms; the teaching strategies they use in order to meet those needs; and professional development opportunities regarding gifted students. I am also requesting your permission to survey gifted students in fourth through sixth grades while in their gifted classrooms.

The student surveys consist of questions regarding their educational experiences and attitudes toward school and learning. Please find attached the surveys that I plan to use for my research. The surveys do not ask for any personally identifying information. To further protect the identity of the participants, I would ask the building principals to forward the surveys to teachers and another gifted teacher in the district to proctor the students while completing the surveys in their gifted education classes. The identification of the participants will be completely anonymous.

Should you grant me permission to conduct the above described research on your site, please sign below. I would welcome the opportunity to discuss this with you by phone if that would be helpful. In addition, I would be happy to provide any further information you may require in order to make a decision

Thank you for your time and support.

Sincerely,

Paula Macy
[redacted]

I have read the request from the researcher to conduct research and have been given the opportunity to ask questions. I will also be given a copy of this form for my records. I consent to the research as described above.

_____		_____	
Superintendent's Signature	Date	Superintendent's Printed Name	
_____		_____	
Signature of Principal Investigator	Date	Investigator Printed Name	

Appendix G

Recruitment Letter to Administrator

Dear Administrator,

My name is Paula Macy, and I am in the process of obtaining my Doctorate in Instructional Leadership through Lindenwood University. As part of this process, I am conducting research for my dissertation titled, *Underachievement in Gifted Students: Understanding Perceptions of Educational Experiences, Attitudes Toward School, and Teacher Training.* The purpose of this study is to determine the potential risk of underachievement in gifted students and to identify appropriate teaching strategies and interventions that would reduce this risk.

I am requesting your permission to invite first- through sixth-grade regular education teachers in your district to participate in my study by completing an online survey regarding the following: their understanding of the needs of gifted students they currently have or have had in their classrooms; the teaching strategies they use in order to meet those needs; and professional development opportunities regarding gifted students. I am also requesting your permission to survey gifted students in fourth through sixth grades while in their gifted classrooms. The student surveys consist of questions regarding their educational experiences and attitudes toward school and learning. Please find attached the surveys that I plan to use for my research.

Should you grant permission, I would ask you to email my letter of invitation, informed consent for participation, and survey to teachers on my behalf. With your permission, I would also ask a non-participant gifted teacher to forward a letter and an informed consent for parents to sign for student participation. The surveys do not ask for any personally identifying information. The identification of the participants will be completely anonymous.

I would welcome the opportunity to discuss this with you by phone if that would be helpful. In addition, I would be happy to provide any further information you may require in order to make a decision.

Thank you for your time and support.

Sincerely,

Paula Macy
[redacted]

Appendix H

Recruitment Letter to Teachers

Dear Educator,

My name is Paula Macy, and I am the fifth- and sixth-grade gifted teacher in the district. I am in the process of obtaining my Doctorate in Instructional Leadership through Lindenwood University. As part of this process, I am conducting research for my dissertation titled, *Underachievement in Gifted Students: Understanding Perceptions of Educational Experiences, Attitudes Toward School, and Teacher Training.* The purpose of this study is to determine the potential risk of underachievement in gifted students and to identify appropriate teaching strategies and interventions that would reduce this risk. Because of your expertise and experience, I am inviting you to participate in the study.

Participation in this research includes taking a survey about the following: your understanding of the needs of gifted students you currently have or have had in your classroom; the teaching strategies you use in order to meet those needs; and professional development opportunities regarding gifted students. The survey consists of just 15 questions and should not take much of your time. No personal identification information will be asked, so your responses will remain anonymous.

Attached you will find an Informed Consent for Participation in Research Activities form. Your consent to participate in this study is acknowledged by completing the survey.

Should you have any questions about the study or your participation, please contact me.

Thank you for your time and support.

Sincerely,

Paula Macy
[redacted]

Appendix I

Recruitment Letter to Parents

Dear Parent or Guardian,

My name is Paula Macy, and I am the fifth- and sixth-grade gifted teacher in the district. I am in the process of obtaining my Doctorate in Instructional Leadership through Lindenwood University. As part of this process, I am conducting research for my dissertation. The purpose of this study is to determine the potential risk of underachievement in gifted students and to identify appropriate teaching strategies and interventions that would reduce this risk. I am requesting your permission for your child to participate in the study.

Student participants will be asked to complete a survey regarding their educational experiences and attitudes toward school and learning. The survey will consist of 20 questions and will be administered by a gifted teacher who is not participating in the study. No personal identification information will be asked, so your child's responses will remain anonymous with identity protected.

If you would allow your child to participate, please complete the attached Informed Consent for Parents to Sign for Student Participation in Research Activities form at your earliest convenience.

Should you have any questions regarding the study or your child's participation, please feel free to contact me. Thank you for your time, support, and consideration.

Sincerely,

Paula Macy
[redacted]

Appendix J

Third-Party Examiner Instructions

1. Record the MAP scores in Math and Communication Arts of the gifted students with consent from parents to participate.

2. Using the process goal indicators on the standards-based grade cards of those students, average the scores in Math and Communication Arts.

3. Compare the grade averages to the MAP scores. For the purpose of this study, those students who scored Advanced but have at or below grade-level process goal indicator averages are considered to be underachieving.

4. Separate the participants into two subgroups: achievers and underachievers. Assign a series of numbers to each group. In order to identify underachievers on the survey responses, include a zero at the beginning of their identification numbers.

5. When administering the survey, ask students to place their identification numbers on the survey. Remind students that when responding to the statements, they should think about their regular classroom experiences.

Appendix K

Disposition Letter from IRB Committee

IRBNet Board Action

1 message

Michael Leary <no-reply@irbnet.org> Wed, Feb 22, 2017 at 2:22 PM
Reply-To: Michael Leary <mleary@lindenwood.edu>
To: Paula Macy <paulamacy1004@gmail.com>, Sherry DeVore <sdevore@lindenwood.edu>, Bradley Hanson <bhanson@monett.k12.mo.us>, Kathy Grover <kgrover@lindenwood.edu>

Please note that Lindenwood University Institutional Review Board has taken the following action on IRBNet:

Project Title: [1028937-1] Underachievement in Gifted Students: Understanding Perceptions of Educational Experiences, Attitudes Toward School, and Teacher Training
Principal Investigator: Paula Macy

Submission Type: New Project
Date Submitted: February 15, 2017

Action: APPROVED
Effective Date: February 22, 2017
Review Type: Exempt Review

Should you have any questions you may contact Michael Leary at mleary@lindenwood.edu.

Thank you,
The IRBNet Support Team

www.irbnet.org

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Vita

Paula Macy, a native of Missouri, has a passion for teaching and learning. Paula has been in the educational field for 15 years. She began her career as a kindergarten teacher and currently teaches middle school gifted students. She has shared her knowledge as both a presenter and published author at various local and state educational conferences and workshops. She has written supplementary educational materials for a well-known publisher.

Paula Macy graduated with a Bachelor of Science in Education from Missouri State University in Springfield, Missouri, in 2002. She continued her education and received a Master of Arts in Educational Administration from Lindenwood University in St. Charles, Missouri, in 2006. In 2014, Paula received a Masters in Education-Gifted Education degree from Drury University in Springfield, Missouri. As a life-long learner, Paula plans to continue her academic and professional growth.