

2016

Ability and Performance Comparisons of Gifted Students in Homogeneous and Heterogeneous Settings

Cindy Rochelle Schwartz
Walden University

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Cindy Rochelle Schwartz

has been found to be complete and satisfactory in all respects,
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Dr. George Smeaton, Committee Chairperson, Education Faculty

Dr. Wendy LaRue, Committee Member, Education Faculty

Dr. Beate Baltes, University Reviewer, Education Faculty

Chief Academic Officer

Eric Riedel, Ph.D.

Walden University

2016

Abstract

Ability and Performance Comparisons of Gifted Students in Homogeneous and
Heterogeneous Settings

by

Cindy Rochelle Schwartz

EdS, Lincoln Memorial University, 2005

MSEd, Fort Valley State University, 2001

BSEd, University of Georgia, 1989

Doctoral Study Submitted in Partial Fulfillment
of the Requirements for the Degree of
Doctor of Education

Walden University

June 2016

Abstract

To meet the educational needs and acceleration of talented and gifted (TAG) students, it is important to determine the best learning environment to afford optimal academic success during their educational experience. A study at a Bartow County school district in Georgia has been conducted in order to establish this best learning environment. This study investigated if Lexile scores (ability) and academic averages (performance) differ for 6th grade TAG students in homogeneous classes compared to TAG students in heterogeneous settings. Vygotsky's theory of social constructivism, which proposes that students need to feel socially and cognitively supported by their environment, was the theoretical foundation of this study. Using a time series, quasi-experimental, between-group comparison, and a 2-group, nonequivalent control group design, this study analyzed archival data for reading, language arts, and social studies from sixth grade middle school TAG students ($n = 43$) who were enrolled in both homogenous and heterogeneous settings depending on the scheduling of the courses. The results revealed no significant differences in either the reading or language arts classes but did reveal a significant difference ($p = .03$) in the level of academic performance for social studies in homogeneous classes compared to students in heterogeneous classes. The findings may contribute to positive social change by informing educators about the utility of specific curricular content for TAG students in a particular setting.

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Dedication

First and foremost, I would like to dedicate all that I am, all that I have become, and all that I will become to the glory of God from whom I derive my strength, my perseverance, and my inspiration.

Secondly, I would like to dedicate the success and completion of this paper and of my degree to my loving and supportive family: my adoring and larger-than-life husband, Michael and our kind-hearted, beautiful, and passionate daughter, Gracie. Both of them sacrificed so much to make sure I had all that I needed to be successful. During these past few years, I know that collectively we were all the wind beneath the wings of one another. We have held each other up and celebrated life's challenges and successes. I did this for you.

Finally, I want to dedicate this mountainous milestone to my parents who believed so strongly in me that I had to keep working even when I wanted to quit. It wasn't just that they had confidence in me when I thought I couldn't do it, they knew that I could, so I had to prove them right.

I am so thankful and so blessed. I love you Michael, Gracie, Mom, and Dad.

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I know I could not have completed this study without 'my' statistician, Camille Pace, MSAS. I offer my greatest respect and gratitude to her for sharing her trade to further mine.

One thousand miles ago, I took the first step with my friend Donna Sims. It has been a long journey, and I want to thank her for inviting me along.

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Section 1: Introduction to the Study

Introduction

Educational trends in the U.S. support inclusiveness in schools. Talented and gifted (TAG) students, average students, and students with special needs are all served in one classroom (Tomlinson & Hockett, 2008). The No Child Left Behind (NCLB) legislation, established in 2002, necessitated that all students be able to maximize their potential in school, which required educators to adjust the educational setting to meet the diverse requirements of students within inclusive classrooms. As this legislation is replaced by Common Core Curriculum (CCC), it will become evident the classroom curriculum used in the traditional heterogeneous classroom does not stimulate the typical TAG child (Van Tassel-Baska, 2012). Approximately 3 to 5 million students—6-10% of the total student population in the U.S.—are identified as TAG students (National Association of Gifted Children, 2015). It is vital to protect the integrity of TAG instruction and continue to provide for the needs of academically and creatively talented students (Eagle Forum, 2011).

When TAG curriculums are ineffectual and TAG students fail to receive the education that allows them to reach their highest capability, there is an adverse effect on the academic, behavioral, social, and emotional maturity of these students. Numerous researchers have noted this (e.g. Blankstein, 2004; Delisle & Galbraith, 2002; Eakin, 2007; Garcia, 2006; Greene, 2006; Howley, Pendarvis & Gholson, 2005; Matthews, 2006; Mueller, 2009; Navas, 2008; Peterson, Duncan & Canady, 2009; Rogers, 2007;

Strip & Hirsch, 2000; Taylor, 2007; Wilson, 2006). Some of the effects of a lack of advanced opportunities for TAG students include classroom boredom, frustration, adaptation to lock-step manners with classmates, and stifled acceleration (Colangelo, Assouline, & Gross, 2004). These effects could lead to low academic self-confidence, negative attitude toward educators and academic environment, poor goal assessment, and decline in inspiration and self-motivation of TAG students (McCoach & Siegle, 2001). American Psychological Association (APA) President Ernest Hilgard, (as quoted in Colangelo, Assouline, & Gross, 2004) stated, “The longer they (TAG students not permitted to move ahead at their own pace) remain students, the longer they remain subordinate, passive, always looking up to others instead of out toward the horizons for themselves.” TAG students permitted to move ahead at an accelerated pace are found to gain early entrance into college, do better in college, obtain higher scores on the Graduate Record Examination (GRE), and attribute a portion of their later exceptional achievements to the occasion of being accelerated (Colangelo, Assouline, & Gross, 2004). Peterson et al. (2009) reported that an absence of suitable and effectual academic programs for TAG learners results in higher incidence of depression and negative peer relations, as well as greater risk of suicide. Colangelo et al. (2004) also found that TAG students who had their education placement aligned with their ability received higher degrees, recorded higher adult occupational accomplishments, and earned higher levels of income than their peers.

By failing to satisfy the necessary requirements of this specific set of learners, the U.S. is at risk of underutilizing a valuable resource (Colangelo, Assouline, & Gross, 2004a). As Davidson and Davidson (2004) stated, “These missed opportunities aren’t just a tragedy for TAG kids and their families. Stunting the growth of TAG children means quietly limiting the ability of society to make the great leaps in the arts and sciences that will benefit us all” (p. 20). As the children of today become the leaders of tomorrow, they must be prepared to solve the problems confronted by society (Colangelo & Davis, 2002; Ridley & White, 2004; Loew, 2008; Wilson, 2006). As Ambrose (2008) noted, the technologically global community, which is undergoing change at an amazing speed, will challenge this next generation of problem solvers, scientists, writers, educators, and public servants. Ambrose concluded that the rapidly increasing world population will intensify the dilemmas the next generation will face.

As a means of addressing both the individual and societal need for appropriate academic programming for TAG students Georgia passed legislation in the 1950s requiring all school districts to provide educational opportunities for TAG learners (Georgia Department of Education, 2013). Since then 46 of 50 state departments of education have developed a classification to define gifted education and to assure services are provided to the TAG students under their jurisdiction (National Association for Gifted Children [NAGC], 2013).

Despite these efforts by individual states, Colangelo and Davis (1997) observed the U.S. has progressed gradually toward dedicated educational instruction and courses

designed to provide acceleration for TAG learners. Budget cuts, a depressed economy, and increased demands on school systems were diminishing the resolve for TAG funding (Colangelo et al., 1999; Eakin, 2007; Gentry & Keilty, 2004; Montgomery, 2004).

In 2002, the federal government created NCLB to ensure annual yearly progress (AYP) by students in all stages of educational accomplishment. Studies during the turn of the 21st century demonstrated that TAG learners across the U.S. were not receiving adequate educational services associated with their distinctive aptitudes and skills (Ambrose, 2008; Blankstein, 2004; Delisle & Galbraith, 2002; Garcia, 2006; Navas, 2008; Taylor, 2007; Wilson, 2006). NCLB focused on every student meeting a minimum standard, not exceeding it (Carpenter, 2010). The emphasis for the classroom teachers, the direction of the curriculum coordinators, the goals of the administration, and the accountability of the district was to make sure the minimal standards were being met. Additional funds and efforts were not being directed toward the enrichment for TAG students (Carpenter, 2010).

These funds, allocations, and budget items earmarked for TAG students were used to augment and enrich the existing curriculum, instructional content, staffing, and classroom composition. The composition of the classroom is designed by the grouping of the learners and how they are best served in the TAG program.

Students served in TAG education have been characterized and educated in a variety of ways (Briggs, Reis, & Sullivan, 2008; Brown, Renzulli, Gubbins, Siegle, Zhang & Chen, 2005; Colangelo, Assouline, & Goss, 2004b). Common to all of these

approaches is the use of one of two approaches to student grouping: heterogeneous and homogenous. Rogers (2002) described a heterogeneous classroom as one comprising mixed-ability students with a variety of educational requirements including both TAG and nongifted students. Colangelo, Assouline, and Gross (2004a) defined a homogeneous classroom as the placement of students who are deemed to be TAG in a classroom containing all TAG students.

In Georgia (the state where this study took place), direct programming services include resource classes, advanced content, and cluster grouping (Georgia Department of Education, 2013). Advanced content instruction helps ensure TAG learners are scheduled in homogenous classes on the principle of ability and relevance of subject area. The regulation that called for advanced content programming also stated that advanced classes may include learners who are not categorized as TAG but who demonstrate strong aptitude and incentive in a specific subject area. Studies indicated that TAG students, regular education students, and students with special needs spend most of their instructional time in a heterogeneous classroom together (Arends, 2004; Bennett, Deluca & Burns, 1997; Betts, 2004, Chipego, 2004).

Research on the relative efficacy of these two approaches to grouping has found that grouping TAG students heterogeneously precedes decreased academic accomplishment and inspiration as well as worsened outlooks toward education (Feldhusen & Moon, 1992). TAG learners perceive heterogeneous grouping more negatively than homogeneous grouping. They perceive that they do not learn as much in

less challenging environments provided in heterogeneous classes (Adams-Byers, Whitsell, & Moon, 2004).

Previous studies of the effects of grouping approaches have not examined comparisons of ability and performance from both homogeneous and heterogeneous settings in one school year. For this reason, research is needed that provides data from a group of participants who are part of both groupings. This study includes data from subjects who are in both homogeneous and heterogeneous groupings simultaneously. For example, in an academic course load including reading, language arts, and social studies, some of the TAG learners are grouped in a homogeneously taught reading and social studies class while being served heterogeneously in a language arts class. Other TAG students in the same grade level are grouped homogeneously in language arts and reading while being served heterogeneously in social studies. Determinations for how the students were assigned to each class were based upon the certifications of the team of teachers for which they were scheduled. This study addresses the gap in research for both ability and performance from both homogeneous and heterogeneous settings in all three subjects of reading language arts, and social studies.

Problem Statement

TAG students who are not provided educational programming that meets their unique needs experience numerous negative effects (Colangelo & Davis, 1997; Fielder, Lange, & Winebrenner, 2001). Programming that has been implemented for this student group consists of placing them in classes comprised exclusively of other TAG students—

homogeneous grouping—or integrating them into classes comprised of students from all ability levels—heterogeneous grouping. Research comparing the efficacy of these two grouping approaches has shown that TAG students preferred not to be grouped with non-TAG students (French, Walker, & Shore, 2011), that there are higher expectations from teachers of students in the homogeneous groups (Davis & Rimm, 2005), and that the social and emotional needs of all learners cannot be met in heterogeneous settings (Eddles-Hirsch, Vialle, Rogers, & McCormick, 2010). Prior research on grouping of TAG students has not determined whether ability and performance is affected by subject area.

This study determined the best learning environment for TAG students in order to provide optimal academic success during their educational experience. Research on TAG student grouping effects is needed because the Bartow County school district will be able to substantiate staffing and scheduling decisions for TAG students. For those reasons, it was determined that quantitative research is needed that compares ability and performance between TAG students enrolled in homogeneously and heterogeneously grouped classrooms.

Nature of Study

This study used a quantitative, time series, quasi-experimental, between-group comparison design with an independent samples *t* test as well as a quantitative, two-group, nonequivalent control group quasi-experimental design. Participants included all sixth-grade students who qualified as TAG students and were enrolled in the gifted and

talented educated with accelerated youth (GATEWAY) program from the selected school in Bartow County, Georgia.

This program consists of an academically enriched and differentiated curriculum focusing on developing cognitive learning, metacognition, and research and reference skills. The study included 43 students. These students were assigned to some classes that used heterogeneous grouping and some that used homogeneous grouping. The study compared their performance in the two types of groupings. The students were both male and female, mostly Caucasian American (95%), with the remaining African American (4.7%). Data collected on subjects were from their fifth and sixth-grade Lexile scores as well as their sixth-grade academic averages reading, language arts, and social studies (Bartow County Board of Education [BCBOE], 2014). Math and science, although they are core subjects, were excluded from this investigation. The majority of the TAG students in this study received exclusive homogeneous instruction in both of these classes; therefore, the number of heterogeneously taught participants was insufficient to make comparisons.

According to Creswell's (2003) suggestions, I used a quantitative design to summarize the data and make appropriate comparisons. I collected data from the statewide longitudinal data system (SLDS) regarding sixth-grade TAG students, some of whom were enrolled in a homogeneous academic setting and some of whom were enrolled in a heterogeneous academic setting. I used this information to describe and explain the effects of gifted instruction on TAG education students.

The study included four research questions using two research designs. I formulated directional hypotheses for each research question because findings from prior studies suggested that homogenous grouping of TAG students results in greater student learning than a heterogeneous grouping (Colangelo et al., 1999; Davidson & Davidson, 2004; Delisle & Galbraith, 2002; Loew, 2008; McNeil, 2000; McWalters & Cheek 2000; NAGC, 2013; Ridley & White, 2004; Stanley & Baines, 2002; Strip & Hirsch, 2000; VanTassel-Baska, 2006).

A quantitative, time series, quasi-experimental, between-group comparison design was used to answer the first research question.

1. How does the difference in reading ability from fifth-grade to sixth-grade, as measured by the change in Lexile scores, of sixth-grade TAG students enrolled in a homogeneously taught academic class compare with the reading ability of sixth-grade TAG students enrolled in a heterogeneously taught academic class?

H_0 1: TAG students enrolled in a homogeneously taught class will show no significant difference in reading ability, as measured by the change of Lexile scores, than those students enrolled in a heterogeneously taught class.

H_1 1: TAG students enrolled in a homogeneously taught class will show a significant difference in reading ability, as measured by the change of Lexile scores, than those students enrolled in a heterogeneously taught class.

A quantitative, two-group, nonequivalent control group, quasi-experimental design was used to answer the remaining research questions.

2. How does reading class performance, as measured by the academic average, of sixth-grade TAG students enrolled in a homogeneously taught reading class compare with the performance of sixth-grade TAG students enrolled in a heterogeneously taught reading class?

H₀₂: TAG students enrolled in a homogeneously taught reading class will not earn significantly different reading academic averages than those enrolled in a heterogeneously taught reading class.

H₁₂: TAG students enrolled in a homogeneously taught reading class will earn significantly different reading academic averages than those enrolled in a heterogeneously taught reading class.

3. How does language arts performance, as measured by the academic average, of sixth-grade TAG students enrolled in a homogeneously taught language arts class compare with the performance of sixth-grade TAG students enrolled in a heterogeneously taught language arts class?

H₀₃: TAG students enrolled in a homogeneously taught language arts class will not earn significantly different language arts academic averages than those enrolled in a heterogeneously taught language arts class.

*H*₁₃: TAG students enrolled in a homogeneously taught language arts class will earn significantly different language arts academic averages than those enrolled in a heterogeneously taught language arts class.

4. How does social studies performance, as measured by the academic average, of sixth-grade TAG students enrolled in a homogeneously taught social studies class compare with the performance of sixth-grade TAG students enrolled in a heterogeneously taught social studies class?

*H*₀₄: TAG students enrolled in a homogeneously taught social studies class will not earn significantly different social studies academic averages than those enrolled in a heterogeneously taught social studies class.

*H*₁₄: TAG students enrolled in a homogeneously taught social studies class will earn significantly different social studies academic averages than those enrolled in a heterogeneously taught social studies class.

Purpose of the Study

The purpose of this study was to assess if sixth-grade TAG students taught in homogenous TAG classrooms performed differently than the sixth-grade TAG students taught in heterogeneous classes in the subjects of reading, language arts, and social studies. Information obtained may help to provide guidance to school administrators on how to provide the best education for TAG students. I used quantitative, time series, quasi-experimental, between-group comparison design to examine student ability and

quantitative, two-group, nonequivalent control group, quasi-experimental design to examine student performance.

Theoretical Framework

Social constructivist theory, formulated initially by Vygotsky (1978), framed the study. This theoretical base for inquiry-based learning, which proposes that TAG children need to feel socially and cognitively encouraged in their environments, was vital to this investigation. Building on constructivist theory, Davis and Rimm (2005) found that in a typical classroom, TAG students preferred to work alone rather than in groups with their nonTAG peers. TAG students excelled when grouped with peers of similar ability. Social constructivism is helpful in understanding learning preferences among TAG students (French, Walker & Shore, 2011). French, Walker, and Shore (2011) found that TAG learners who sensed their effort was valued by instructors and fellow classmates expressed the strongest desire to work in groups. Social interaction and peer grouping are chief influences in construction and reconstruction of knowledge (Bell, 1998). The social constructivist perspective of knowledge acquisition served to guide this study by providing a basis for homogeneous grouping of those students who share the characteristics of TAG learners. In a study of homogeneously grouped TAG students, Park and Oliver (2009) concluded there are a variety of instructional challenges associated with the unique characteristics of TAG students. To address these challenges, students with distinctive characteristics should be grouped in an instructional setting with

similar peers. The idea that students' feel understood, significant, and valued in coordination with other individuals supports the social constructivist theory.

Operational Definitions

The following terms are used in this study:

Assessment: This is a process of collecting data or using instruments to gather information, characteristically to define an entity's level with respect to a quality or performance (National Assessment Governing Board, 2012).

Critical thinking (High-level thinking): An evaluative discerning progression that involves assessment made through critical investigation is termed critical thinking (Burton, 2010). Elements of critical thinking may include evaluating the thinking process, assessing argument, considering evidence, reviewing data and references for accuracy or prejudice, using statistics to confirm inferences, observing numerous viewpoints, and defining inferences and significances (Burton, 2010).

Curriculum planning. The practice of recognizing learning targets, aims, instructional approaches, tasks, supplies and resources, and scope and sequence of teaching based on evaluation of knowledge, subject area(s), and style of TAG scheduling and services offered constitutes curriculum planning (VanTassel-Baska, 2012).

Differentiated curriculum. Variation of subject matter, procedure, and ideas to meet an advanced level of expectancy appropriate for accelerated students is known as differentiated curriculum. Curriculum can be modified through fast pacing, level and depth of difficulty, degree of task, and ingenuity (VanTassel-Baska & Wood, 2008).

Differentiated instruction. In differentiated instruction, numerous methods of instructional delivery are used so each learner is tested at the correct, corresponding level of his ability. Differentiated instruction may include such features as individual student based planning and unit development, assignment design using prior assessments, as well as adaptable grouping, supplies, resources, and scheduling acceleration (Tomlinson & Hockett, 2008).

Heterogeneous grouping. With heterogeneous grouping, classrooms include a variety of levels of abilities among learners who possess various instructional and educational needs (Rogers, 2002).

Heterogeneous grouping of TAG students. A TAG heterogeneous grouping classroom contains both TAG and nongifted learners. Heterogeneously grouped classes center specifically on enhancement activities and instruction for the TAG students by offering a higher level of work difficulty than to general education students while still working in the same classroom setting (Colangelo, Assouline, & Gross, 2004a).

Homogeneous grouping. A homogeneous classroom for TAG students features an instructional setting containing all TAG students. Homogeneous grouping follows the model of a challenging, differentiated and advanced curriculum (Colangelo, Assouline, & Gross, 2004a).

Heterogeneous versus homogeneous grouping. A homogeneously grouped learning environment refers to the instructional setting that includes only identified TAG students with a TAG-endorsed instructor, while a heterogeneously grouped learning

environment is one that includes both identified TAG students and general education and/or special education students. In the heterogeneously grouped setting, the instructor is not required to hold a TAG endorsement; the instructor is, however, mandated to be highly qualified in the area of instruction for the subject being taught (NCLB, 2002).

Identification. Identification for a TAG student includes an assessment to determine the educational needs of the learner in order to determine the appropriate placement into educational settings that best meet their needs in the areas of intellectual, emotional, and social development (Richert, 2003). In determining placement, the identification of the learner begins with reviewing student data and ends with placement in the TAG program (Matthews & Shaunessy, 2010). This process includes several assessment measurements whose purpose is to detect advanced ability, performance, and achievement or other areas of high-level interests in learning (Johnsen, 2008). In this study, TAG learners were students who were evaluated and qualified using the state criteria set by the Georgia State Board of Education and placed in a local TAG instructional setting as established by the Georgia General Assembly. Four areas of evaluations were used to determine eligibility in the TAG program. Those areas include: mental ability, achievement, motivation, and creativity (Park & Oliver, 2009).

Lexile score. A score assigned to a reader's ability to comprehend texts; also a score assigned to a text to acknowledge its readability or level of difficulty (Scholastic, Inc., 2014).

Programs/programming. Programs or programming include a deliberately planned curriculum, a consistent schedule, and a continual program afforded in the school or instructional setting to for TAG students. Some nontraditional instructional settings may include a college campus, a laboratory, a museum, or a zoo. Programming includes objectives and goals, expectation, and plans for reaching and evaluating those goals (Oakland, Joyce, Horton, & Glutting, 2000).

Services/servicing. Services and servicing the needs of the TAG learner include the instructional and associated differentiations that are offered beyond the general education curriculum. These services may take place as a one-time event, a yearly event, or as a continual event. They could substitute for other traditional styles of TAG programming in the form of advising, one-on-one tutoring, and community mentoring. (Brulles & Winebrenner, 2011).

Statewide longitudinal data system (SLDS). The statewide longitudinal data system offers districts, counties, schools, and personnel in Georgia with the ability to access student records providing them with data on testing scores, course grades, attendance, and enrollment history starting in 2006 (Georgia Department of Education, 2014).

Students with gifts and talents. This is a phrase used to describe gifted learners. It is favored over *gifted and talented students* because this wording puts an emphasis on the learner instead of ability of the learner and is in line with the terminology used in special education. Students with gifts and talents include individuals whose talents are dormant

as well as those whose talents are obvious. This phrase also includes students with advanced mental ability, students with high academic achievement, students with advanced talents, and even gifted students with potential (Davis & Rimm, 2004).

Assumptions

The following are assumptions for this study. First, students completed the Scholastic Reading Inventory (SRI), which is the assessment used to assign a Lexile score, to the best of their ability. Second, students performed to the best of their ability in reading, language arts, and social studies courses.

Limitations

There were some limitations with this investigation. Among the three academic subjects included in this study, there were several classes (or course sections); therefore, there were different teachers, each with a unique set of classroom standards and expectations. Consequently, students from one particular class might have improved their ability or skills just because of an outstanding teacher and not because of the particular setting in which they were placed.

An additional limitation is that participants in quasi-experimental research were not randomly assigned to control or intervention groups. As a result, it is possible that pre-existing differences between the two groups could account for between-group differences in the dependent measure. The effect of this limitation was minimized by examining fifth-grade to sixth-grade changes in Lexile scores which accounted for any pre-existing group differences by creating a baseline comparison of ability among

participants. This comparison was then used as the dependent variable in determining differences in performance levels as indicated by grade averages.

Scope and Delimitations

The scope of this study was to compare sixth-grade TAG students in a heterogeneously taught class with sixth-grade TAG students in a homogeneously taught class for academic instruction in one particular school in Northwest Georgia. The following delimitations were applied to this study. First, this study was delimited to TAG students in sixth-grade. Second, the research for this study was conducted within one academic school year using archival data. Finally, this study was delimited to one school setting and one school system.

Significance of the Study

The results of the investigation can be used to help registrars, counselors, curriculum directors, educational leaders, and teachers in recognizing whether or not there is a need to provide a homogeneous classroom setting, a modified TAG curriculum, or instruction by a gifted-certified teacher for TAG learners. As TAG students are expected to academically outperform the average student (Myers, 2005), the composition of a classroom can influence the behaviors that affect that performance.

This investigation may help make positive contributions to social change by bringing a problem to the attention of educational leaders, instructors, curriculum developers, registrars, administrators, and counselors, so they can make effective changes in learning environments, and in the lives of learners. School leaders can help to promote

a positive and beneficial learning environment to ensure success in the classroom and in the world beyond (Colangelo, Assouline, & Gross, 2004).

This study may be significant to educational research because it addressed a topic on which there is limited research. Many students have been enrolled in heterogeneous classroom settings, and many studies have been conducted to determine the effects of that grouping on both TAG students and average education learners; however, there is little information available regarding a comparison between the ability and performance of a TAG learner in an homogeneous learning environment and the ability and performance of a TAG education learner in a heterogeneous learning environment. It is vital that all factors that have an effect on the education of learners be examined. The results of this study can contribute to positive social change by addressing problems such as lowered achievement and poor motivation, negative attitudes toward education and teachers, and diminished self-perception of TAG students who are not receiving classroom instruction aligned with their specific needs. This study is important in that it may generate knowledge that supports TAG learners in their ability to gain early entrance into college; obtain college success as measured by the GRE; and achieve higher levels of education, adult vocational accomplishments, and upper levels of income.

Summary

This study investigated whether there is a difference in the ability and performance of TAG learners reflected in Lexile scores and academic averages based on whether they are in heterogeneously or homogeneously grouped classes. The results of

this study can also be an influential means through which school systems' curricula are created, restored, and validated. Beginning with assertion that quality teachers are paramount, The Institute for Educational Leadership (2001) stated, "Student learning depends first, last, and always on the quality of teachers" (p. 1). This is especially true for the value of educators of TAG learners. Croft (2003) observed that TAG learners are more deeply affected by their teachers' attitudes and actions than are other learners, because they have distinctive requirements and interests. Sisk (1989) also provided data to support the notion that nothing makes a more profound difference in school than the instructor, specifically in the importance of educating TAG students. As far back as 1968, Renzulli noted that because teachers have a substantial influence on learning environments and their ability to meet TAG students' special needs, they are crucial to the success of TAG programs. The common belief that TAG students can be successful without specialized assistance is negated by research from Colangelo and Davis (1997). Intellectual, emotional, physical, instinctive, and societal characteristics are different for TAG students, as a group, in relation to their age peers (Karnes & Bean, 2001). For these reasons, it is suggested that TAG students need instructional procedures specially adapted to aid them in reaching their full educational potential (Park & Oliver, 2009). To assess the distinctive learning needs of TAG learners, special instructional strategies must be implemented.

The success of TAG students included in an advanced curriculum classroom setting should be identified and understood so that the academic and social requirements

of the students can be implemented in the best way possible. The practice of scheduling TAG students in a homogeneous instructional classroom is common, but scheduling TAG students in such a class requires additional certification for teachers and additional scheduling for curriculum planning. Research evidence in such an in-depth study may reinforce the need for these additions. Challenging their talents and skills in TAG content curriculums can provide positive experiences for academically advanced students to contribute to society. Offering excellence in education (expanding the knowledge of all academic levels of students) means raising the ceiling, rather than raising the floor, by offering equity (Tomlinson, 2002). Campbell and Verna (1998) forewarned that society carries the burden of preparing students to achieve as citizens in a world that is growing progressively more global and multifaceted. Grantham (2002) further encouraged educators to create situations in the classroom for which learning is optimized for all students.

This investigation is expected to contribute to the area of educational research since it provided an in-depth awareness of the effectiveness of gifted education grouping in a TAG-based classroom. If educators are to make a difference in the lives of not only TAG students, but also of all students, it is imperative that they are equipped with knowledge concerning all learners whom they have been entrusted to guide and direct (Elijah, 2011). The upcoming review of literature serves to highlight the work that has been accomplished in this area, as well as to focus on the need for additional studies to enhance TAG education for all students.

Section 3 describes the research method used in this study to test the hypotheses including the research design and approach as well as the data collection and analysis. Section 4 presents the results of the study. Data are provided for each hypothesis and analyses are given. The study concludes with discussion on the findings, implications for social change, and recommendations for action and further study in section 5.

Section 2: Literature Review

Introduction

This review of literature is presented in 11 sequential segments. Each segment is constructed to create support for the comparison of ability and performance of TAG students in homogeneous and heterogeneous settings. This section begins with the definition of giftedness. The next segment presents a chronicle of TAG instruction in the U.S. to deliver background on the development and progression of TAG education. The following section explains how the NCLB legislation affected the program planning and expectations of the TAG learner. With the expiration of NCLB, the New National Standards has become a replacement in many states for establishing curriculum direction and instruction. The introduction of this CCC is covered in the subsequent segment. Constructivism theory is the theoretical framework of this investigation and is explained as it relates to all aspects of the study. The program-planning segment describes the program services and organizational models used to meet the needs of the TAG student. Following program planning, various instructional strategies are described. This segment includes the inference that quality instruction is necessary for all students, but the delivery and outcome of that instruction may differ for TAG students. This section also provides information regarding the importance of gifted-certified instruction for TAG students. One specific instructional strategy for TAG students includes grouping. A section explains the specifics of both heterogeneous and homogeneous grouping. The literature review then includes information pertaining to the positive support for

homogeneous grouping of TAG students. To establish the need for this research, the areas where there are gaps in research and practice are highlighted. Finally, this section includes a summarizing conclusion.

Many strategies were used while gathering information for the review of literature including examination of published dissertations, an exploration of the Walden University library, EBSCO, ProQuest, ERIC, Internet professional sites, and professional, scholarly advice. Information regarding *TAG education, curriculum, programming, eligibility, and history; homogeneous and heterogeneous grouping; constructivism, NCLB, CCC, achievement data, SLDS, Lexile scores, research design, quasi-experimental design, and paired comparison t-test* was explored.

Definitions of Giftedness

Although there are many agencies and organizations that serve the TAG population, there has yet to be one agreed upon definition for giftedness. The absence of a cohesive description of giftedness prompts investigators to use very diverse methods when choosing a selection of TAG students for study in investigations (Carman, 2013). The first proposal for a formal definition of gifted was issued in 1972 in The Marland Report, in which S. P. Marland suggested that schools give a broad definition of giftedness. It was recommended that the definition include scholarly gifts and mental abilities as well as excellence in leadership, fine arts, innovative or dynamic thinking, and psychomotor aptitude (NAGC, 2013). This definition was modified in the 2002 NCLB movement to read, “Students, children, or youth who give evidence of high achievement

capability in areas such as intellectual, creative, artistic, or leadership capacity, or in specific academic fields, and who need services and activities not ordinarily provided by the school in order to fully develop those capabilities” (NAGC, 2013). Similarly, in Georgia, a TAG learner is termed as, “one who demonstrates a high degree of intellectual and/or creative ability(ies), exhibits an exceptionally high degree of motivation, and/or excels in specific academic fields, and who needs special instruction and/or special ancillary services to achieve at levels commensurate with his or her ability(ies)” (Georgia Department of Education, 2013). Additionally, the NAGC provides the following definition: “gifted individuals are those who demonstrate outstanding levels of aptitude or competence in one or more domains” (2013). An established cohesive designation of giftedness for the intention of research will lead to a more consistent pool of members, which in turn, would model a precedence yielding various advantages including strengthened external legitimacy in research designs (Carman, 2013).

History of TAG Education

Educational focus on the TAG students in the U.S. is recorded as far back as the 19th century, when in 1868, W. T. Harris began systematic efforts to educate high ability students in the public schools of St. Louis, Missouri (NAGC, 2013). The first school dedicated to the education of TAG students opened in Massachusetts at the beginning of the 20th century (VanTassel-Baska, 2010). During the 1900s, pioneers such as Terman and Hollingsworth tested and published findings in the discipline of TAG education to advance identification and possibilities for TAG students (VanTassel-Baska, 2010).

National and international historic events, including the U.S.' entry into WWI and the Soviet Union's launching of *Sputnik*, also contributed to the implementation of advanced programming in mathematics, science, and technology for America's brightest and most talented students (Jolly, 2009).

Several education acts, including the 1950 National Science Foundation Act, the 1958 National Defense Education Act, Public Law 94-142 from 1975, and ultimately the 1988 Jacob Javits Gifted and Talented Students Education Act continued to further advance the progress TAG education (Jolly, 2009). Because the educational structure in the U.S. is directed under plenary authority, the ultimate authority of education lies under the jurisdiction of each individual state (Guthrie, 2015). The nonexistence of any explicit reference of education in the U.S Constitution, paired with the Constitution's Tenth Amendment, which states that, "The powers not delegated to the U.S. by the Constitution...are reserved to the States respectively, or to the people," makes education a state responsibility. The constitutions of all 50 states accept explicit responsibility for education. Therefore, the federal education system, by default, is a set of systems, not a single national system (NAGC, 2013).

The U.S. government does not supply monetary aid directly to state or regional school districts for instructional services or curricula for TAG learners. The only U. S. governmental program especially for TAG children was The Jacob K. Javits Gifted and Talented Students Education Act of 1988 (Wiskow, Fowler, & Christopher, 2011). It was designed to deliver economic aid to state and local educational agencies/organizations of

higher education, and other community and private groups and institutions that provided educational services to TAG students (Berger, 1992). The Javits Act was created to help decrease disparities in achievement, to foster the formation of equal scholastic opportunities for all U.S. schoolchildren, and to focus on classifying and meeting the needs of the learners who were customarily under-represented in TAG services. This included learners from ethnically, linguistically, and socially diverse backgrounds (Guthrie, 2015).

More recently, reports and education acts have failed to bring necessary plans and actions to the realm of TAG education. The 1983 report, “A Nation at Risk,” exposed findings that the most intelligent students in the U.S. were not competitive with their international counterparts. A decade later, the U.S. Department of Education published another study, *National excellence: The case for developing America’s talent* (Jolly & Kettler, 2008). This report revealed that the U.S. overlooks its most capable young people. In 2004, a federal research-based study, *A nation deceived: How schools hold back America’s brightest students* was published. Although the NCLB legislation of 2002 provided for the inclusion of the Javits program, this program was defunded by the federal government at the recommendation of the Obama administration in 2011 (NAGC, 2013).

The future of TAG education is a source of concern for some. Bisland (2003) wrote that when local school systems search for ways to decrease their budget, TAG education is often the area to experience its funding cut, as the decision makers find

acceleration programs for these learners to be gratuitous and excessive. The obvious victims of budget cuts and growing legal regulations are the TAG children in Americas' school systems. An example of this fiscal decrease for TAG programs includes a report from the Texas school system that indicated that school systems regularly allocated one third of the education budget on special education students while providing less than 1% for TAG programs (Baines, Muire, & Stanley, 1999). Wiskow, Fowler, and Christopher (2011), stated because there is not an abundant number of advocates available to support the advancement of TAG programs, it is likely funding for educational services for TAG students will continue to decline.

No Child Left Behind

In 2001, the NCLB Act was created to close the achievement gap by raising standards and accountability for students performing below proficient levels. The law required that students be regularly assessed in reading and math via standardized evaluations and that the indications from those tests would be used to determine each school's educational value (Redondo & Asian American Legal Defense and Education Fund, 2008).

In 2013 the NAGC state that, "It is fair to say that no one would disagree with the goals of NCLB: improve student achievement and ensure that all teachers are highly qualified. Requiring that new teachers (grades 7-12) have degrees in the areas they teach is no doubt extremely beneficial to the advanced learners in middle grades and above."

NCLB expired in 2007 and even though it has been up for renewal, that attempt has yet to yield progress.

An unfortunate side effect of NCLB was the harmful assessment that TAG learners were currently succeeding, and therefore did not require further provisions or accommodations. It was perceived that, if an abundance of students were failing, affording additional assistance for a set of students who were not struggling was unnecessary (VanTassel-Baska, 2006). NCLB created intensified demands on states and school systems to unite all ability levels in students (Gentry, 2006). Although NCLB was not intended to hinder the progress of TAG learners, this emphasis has caused inadvertent adverse consequences for TAG learners resulting in a decrease of TAG services, relocation of instructors from TAG education classes, and a larger concentration on repetition and assessment focus in America's schoolrooms (Reis, 2007).

If teachers were expected to present a set of lessons at a predetermined rate, the comparative capability levels of learners became immaterial (Stanley & Baines 2002). TAG supporters are concerned that the policies within NCLB were to the detriment of high-performing learners. The corrective quality of the law all too often forced local school leaders to make resource decisions to attend to the requirements of one set of learners—those functioning below *proficient* on standardized tests—at the sacrifice of learners already functioning above the proficient level. NCLB did not offer motivations or encouragements for school systems showing success with above-proficient students

and, consequently, it should be no surprise that school systems altered resources in an attempt to avoid being characterized as failing (NAGC, 2013).

Many state standardized tests measure basic competencies, not intellectual increases or the percentage of learners who scores at the highest levels (Blank, 2011). In some affluent school systems, a large number of learners were proficient at grade level tests at the beginning of the school year. Since there are several states that use the total pass score as the solitary marker of value (McNeil, 2000; McWalters & Cheek 2000), and since the total pass score is progressively being connected to educator and school supervisor incomes, the focus in many districts has moved from considering the capability of each individual learner to progressing a majority of learners up to the basic level of proficiency (Krieg & Urban, 2009).

New National Standards/Common Core Curriculum (CCC)

Because NCLB expired in 2007, the current focus in educational curriculum is centered on national standards. As the U.S. moves toward the CCC, it will be even more important to protect the integrity of TAG instruction and continue to strive to meet the requirements of the intellectually and creatively talented learners (Eagle Forum, 2011). Since June 2010, 46 states (Achieve, 2011), the District of Columbia (Kober & Rentner, 2011b), four territories, and the Department of Defense Education Activity (corestandards.org, retrieved 2013) have chosen to adopt the CCC-K-12 standards in mathematics and English language arts/literacy. The CCC was developed from a multistate project led by the National Governors Association and the Council of Chief

State School Officers (Achieve, 2012). These modern standards and tests will affect more than 42 million pupils in K-12 public schools and 2.7 million teachers educating in those institutions across the U.S. (Achieve, 2012). The standards of CCC are created to deliver a coherent, distinct comprehension of what concepts learners are required to acquire, so educators and parents are aware of what needs to be taught in order to help the learner. The standards are intended to be rigorous and pertinent to real life experiences, emulating the information and abilities that adolescents will need for success beyond high school. As young people in the U.S. become prepared to be successful in the future, the nation will be better equipped to successfully compete in a worldwide community (Kober & Rentner, 2011b). CCC promises to provide better educational uniformity and rigor to significant fundamentals of education throughout states and school systems (2011a).

As with any new initiative, there will be supporters, and there will be critics. One proponent of CCC explained it as a curriculum that should be largely implemented so that progress could be made by instructors for resources, student assessments, and teacher preparation, but the curriculum should also be restricted to protect the sanctity of classroom instruction as it is needed to address local priorities (Eagle Forum, 2011). The editors of *American Educator* (Hirsch, 2011) stated that the most compelling benefit of CCC was the potential to increase educational equity. They wrote that one fundamental inequality of the current curriculum model is an unbalanced opportunity for learners to discover crucial material, ideas, and talents. They further stated that providing a given curriculum designed to progress with each grade level will empower each teacher to

construct lessons based on standards that previously been presented in that grade level by the instructor. This will benefit students, as it will help them bridge any gaps in their knowledge and ease the monotony of repeating what they already know (Hirsch, 2011).

Hirsch (2011) also advocated for a CCC as evidenced in the statement,

If states would adopt a CCC that builds knowledge grade by grade, reading achievement would rise for all groups of children. So would achievement in math, science, and social studies because, as common sense predicts, reading is strongly correlated with the ability to learn in all subjects. Equally important, the achievement gap between social groups would be greatly narrowed and social justice would be served. (p. 34)

Hirsch continued by crediting the cause of school's inefficiency to curricular incoherence. Hirsch argued that teachers cannot be sure at the start of school each year what every student knows about a particular subject, especially if they have been taught different topics and with different teacher preferences in prior grades. As a result, an educator must devote a large amount of time to determining the knowledge levels and needs of learners to prepare appropriate materials.

Even though the CCC is not part of a legislative act, many school systems fear that politicians, corporate CEOs, and testing companies in favor of the movement are trying to make a profit and create more rules and regulations in education (Kohn, 2010). Some school leaders claim that rather than trying to create academic excellence, they are actually creating uniformity, rigor, specificity, and an educational testing victory over

other nations. This victory, however, is not a better educated society, but rather an attempt to build up the American economy and control other nations (Kohn, 2010). These leaders also fear that a set of national standards will lead to a need for collective mandates, a national standardized testing system, and a few experts creating curriculum, assessments, and standards for the whole. Adversaries challenge that uniformity is neither excellence nor equity (Kohn, 2010). Kohn further claimed that promoters of the CCC are not striving to cultivate student's curiosity, to encourage them to develop a love of reading, to stimulate critical thinking skills, or to support a democratic society, but to make money and win a game (2010).

One of the establishments contributing to the adoption of CCC, Achieve (2011), asserted that widespread understanding and awareness is a primary goal for each state, and that educators should be able to explain why the CCC are important, what is different about them, and how their district proposes to implement the standards in every classroom in the state. Based on survey results, Boser and Rosenthal (2012), warned that only a little more than 50% of states or districts that have adopted the CCC have implemented them. Teachers who have not been trained in the new standards do not see them being different from their previous curriculums, and even though they have not been trained, these teachers still feel they are prepared to teach the new standards (Boser & Rosenthal, 2012).

A poll conducted by researchers from Achieve (2012) revealed a substantial growth in awareness of CCC among teachers since August 2011. Information from the

poll further indicated that voters (irrespective of age, education level, race, national origin, or political affiliation) and teachers strongly support CCC and assessments, and the more they know about the standards, the more favorable their view becomes.

Goldman and Harvard University (2012), investigated whether implementation of CCC has produced an effect on success of the student or not. Results from the investigation suggested that even though there has been an immense amount of time and money spent on these efforts, there is little evidence of impact by policymakers or educators. The question arises as to why improved standards do not ultimately affect classroom performance in measurably beneficial ways. These researchers suggested there is little agreement between government and school systems over which states are improving standards over time. Creators of the report concluded that policymakers, educators, and researchers should determine how to clearly define quality when it comes to educational standards.

NAGC (2013) acknowledged CCC language arts and mathematics standards have been developed to support and enhance high standards for all learners. Drafters of CCC did not write standards for TAG students and have recognized that some learners will be ready to progress past the standards before the year's end. They acknowledge that for TAG learners, fidelity to grade-level curriculum will limit academic acceleration.

Theoretical Framework

The theory of social constructivism, the theoretical foundation for inquiry-based learning, was vital to the framework of this study. Based on the concept of

constructivism, formulated initially by Vygotsky (1978), TAG children need to feel socially and cognitively supported in their environments. Davis and Rimm (2005) found that in a typical class room, TAG students preferred to work alone rather than be grouped with their nonTAG peers. Social constructivism is helpful in understanding learning preferences among TAG students (French, Walker & Shore, 2011). French, Walker, and Shore stated that feeling supported is important to a TAG learner and that traditional learning situations may cause these advanced students to feel as though they have to take on the role of a consultant to their peers and some may be concerned about the loss of image if they are not supported in the event they seek assistance. Conversely, they found TAG learners who believed that their efforts were valued by teachers and classmates conveyed the strongest predilection to participate in group situations. The concept that knowledge is not discovered, but constructed within individual minds through social interactions support this view (Wertsch & Toma, 1995). In this regard, social interaction and peer grouping is a key aspect in construction and reconstruction of knowledge (Bell, 1998). Using the social constructivist perspective of knowledge acquisition guided this study by providing a basis for the need of homogeneous grouping for those students who share the characteristics of TAG learners.

In a study of homogeneously grouped TAG students, data collected by Park and Oliver (2009) demonstrated there is an array of instructional trials associated with the unique characteristics of TAG students including:

(a) asking challenging questions, (b) being impatient with the pace of others/getting easily bored, (c) having perfectionist traits/having a fear of failure, (d) disliking routine, drills, and busy work, (e) being critical of others, and (f) being aware of being different from others. One way of addressing these challenges includes allowing TAG students, with their distinctive characteristics, to be grouped in an instructional setting with peers of similar characteristics (Park & Oliver, 2009). Given this environment, teachers certified in the area of TAG education were able to modify instruction, curriculum, pace, and expectations to mirror the level of intellectual ability for the students they instruct. The notion that a student's understanding, significance, and meaning are developed in coordination with other individuals supports the social constructivist theory.

Program Planning

As indicated via research related to constructivism, TAG students possess unique characteristics that necessitate distinctive program development. To that end, once a system has identified students as gifted or talented, programs should be established within the school system to serve that specific group of children. According to Costley (2012), Vygotsky's concepts assert that adolescents acquire knowledge primarily through connections with other individuals in their direct social realm. All that they know is influenced by the experiences in which they are situated (Goldstein, 2008). Adhering to the ideals of constructivism, peer grouping supports the learning preferences among academically talented students. This section explores strategies, models, and standards from which program planning can be developed by system curriculum designers to

provide for the needs of TAG learners in order for them feel socially and cognitively supported in their education.

In addition to strategies for instruction, VanTassel-Baska (2010) stated that some operational examples, like unique and distinct programs or schools, have demonstrated their viability. Davis and Rimm (2004) provide an extensive list of program services. This list offers a range of 10 organizational models that districts might employ to best address the educational needs of these TAG learners:

- A single teacher who provides extra study materials to students who finish assignment quickly.
- Individual teachers who compact curriculum to supply extra time for bright students to work at learning centers or with other projects.
- Part-time acceleration to a higher grade.
- Grade skipping.
- *Cluster grouping* all TAG students at each grade level in a single classroom for special services.
- Schoolwide plans to accommodate TAG students in every regular classroom.
- Districtwide pullout programs in which a traveling coordinator teaches TAG students in each school for one afternoon per week.
- Part-time special TAG classes.
- Full-time special TAG classes at every grade level.
- Special schools for the TAG.

Instructional Strategies

TAG programming precedes TAG instruction. From a constructivist perspective, it is imperative that teachers implement instructional strategies to challenge, enhance, and accelerate learning in the TAG classroom. Ormrod (2008) stated, “It’s the challenges in life, rather than the easy successes, that promote cognitive development” (p. 6).

Vygotsky’s theory supports the idea that there is an assortment of practices available to aid learners in completing demanding undertakings in instructional settings (Costley, 2012). Teachers certified in the instruction of TAG education learn to meet those needs through the implementation of various instructional strategies or methodologies. Multiple offerings are essential for the success of the gifted experience (VanTassel-Baska, 2010). These methods, while sharing the quality of instruction provided to regular education students, may differ in presentation, expectation, or outcome. “Equality in education does not require that all students have exactly the same experiences. Rather, education in a democracy promises that everyone will have an equal opportunity to actualize their potential, to learn as much as they can” (Fielder, Lange & Winebrenner, 2002, p. 109).

TAG students need educational skills associated with their individual kind of exceptionality and need instruction that offers additional subject-specialization instead of focusing only on broad characteristics of TAG learners and subject material-free instructional approaches (Park & Oliver, 2009). Furthermore, proponents of constructivism understand that TAG students thrive when assigned to a teacher who appreciates their academic advancement (French, Walker & Shore, 2011). Investigators

have discovered that not only is there a solid correlation between educators' expectations of pupils and their educational accomplishment, but these expectations are also regularly hidden and rarely considered when contemplating pupils' successes or disappointments (Rist, 2000; Rosenthal & Jacobson, 1968; Willis & Brophy, 1974). Educators who are expressly devoted to TAG instruction should have specialized training in TAG education and should be better prepared to hold the TAG students to higher expectations (Mattai, Wagle, & Williams, 2010). Expectations and attitudes of teachers perform a key function in the distribution of information to students (Gerow, Bordens, & Blanche-Payne, 2007). Rosenthal and Jacobson (1968) indicated students who learned from educators who maintained elevated expectations were more prone to accomplish better scholastically than did pupils who were not given such lofty expectations. Results from this study have been replicated and substantiated over the years. Albion and Entmer (2002), in one such investigation, concluded that it is teachers' beliefs that shape the style, interaction, and delivery of daily instruction.

There are countless strategies for meeting the needs all learners, including the unique needs of TAG learners. Many of these strategies are interrelated. Four general areas of instructional strategies—*acceleration*, *enrichment*, *grouping*, and *curriculum models*—overlap in purpose and definition. For example, the goal of *grouping* is to implement *enrichment* or *acceleration*; *enrichment* and *acceleration* consistently contain components of each other; and *curriculum models* necessitate the ideas and *grouping* needed for *enrichment* and/or *acceleration* opportunities. The terms *acceleration* and

enrichment both overlap and contain ambiguity. Any *enrichment* experience will involve greater depth or new topics, characteristics that epitomize *acceleration*. There is a distinction between *acceleration* and *enrichment*: *acceleration* is any approach that brings about advanced placement or course credit, and *enrichment* includes approaches that enhance or augment typical grade-level assignments but do not end in advanced placement or credit. Together these four topics help clarify what can be done in successful programs and provide instructional strategies for how to do it.

Carr and Bertrando (2012) proposed that teachers and curriculum designers introduce common teaching methods, but with a differentiated delivery in order to meet the needs of all learners – ESOL students, students with special needs, TAG learners, and the stereotypical *average* learner.

One such strategy includes differentiated instruction. The term differentiated education was introduced in 1961 by Ward. This author indicated that if a delivery model was going to best serve the basic necessities and requirements of a variety of student types, then that method of instruction would need to include strategies that were varied and were designed to meet the needs of the specific learner (Ward, 1980). Because of its very nature, differentiated instruction is integral in the implementation of the TAG curriculum and is, therefore, an essential part of instructing TAG learners (Lord et al., 2009). To effectively serve the unique characteristics of the TAG learner, a differentiated curriculum is best delivered via the academic subject that offers the most successful delivery method for TAG learners (VanTassel-Baska, 2005).

Homogenous and Heterogeneous Grouping

Grouping students is an encompassing type of instructional strategy; many TAG instructional strategies may be utilized within the confines of homogenous grouping. From the first implementation of programs created to place students in ability groups, differences of opinions have existed regarding the correct and proper design of the programs to best meet the intellectual, social, and emotional requirements of all learners. Studies based on the work of Slavin (1992) and Oakes (1985) indicate that diversity in the needs of all learners is best met in one heterogeneous setting that includes a multitude of instructional strategies. Examples of these programs include Slavin's (1987) Success for All, Levin's (1991) Accelerated Schools, and Sizer's (1992) Essential Coalition. These programs reinforce the idea that grouping students at all levels together in one setting promote educational achievement for all students (Shields, 2002).

A negative effect of heterogeneous grouping is keeping a particular group of students (TAG students) in classes that do not test their intellectual abilities and prohibiting them from educational opportunities that enrich their minds (Fielder, Lange, & Winebrenner, 2002). Fielder et al. (2002) warn that heterogeneous grouping can create underachievement of TAG students, in order to meet the needs of the other ability groups. The social and emotional growth of the TAG learner is important for the emotional well-being of TAG learners. Heterogeneous grouping does not automatically meet those needs; therefore, class environments must be designed to best serve the needs of all learners (Eddles-Hirsch, Vialle, Rogers, & McCormick, 2010),

Educators are not always able to meet the needs of TAG learners in a mixed classroom, and in decades past some teachers regarded TAG students as being difficult to teach (Fuchs, Fuchs, Mathes, & Simmons, 1997). As recently as 2009, data showed confusion by school officials, TAG instructors, and classroom educators regarding the necessary requirements to make decisions for the arrangement of classes and programs to serve TAG students (Schroth & Heifer). Tomlinson (2002) reported some teachers believe TAG students are capable of succeeding on their own, and it is more important to make curriculum adjustments for low achieving students rather than modifying the curriculum for TAG students.

Within a heterogeneous classroom, a cooperative learning approach is sometimes presented. This approach involves students working together and helping each other learn, typically in groups of two to four (Davis & Rimm, 2004). Cooperative learning leads to improved cognitive reasoning, more frequent development of new concepts and explanations, and superior conveyance of what is discovered between one situation and another (Johnson & Johnson, 1989). Cooperative learning also encourages scholarly success, improves retention, and greatly enriches student self-assurance and communication (Johnson & Johnson, 1989). TAG learners, however, often feel manipulated when cooperative learning is used as the dominate means of instruction while students are grouped heterogeneously (Coleman, 1994; Mills & Durden, 1992; Robinson, 1991). Fielder, Lange, and Winebrenner (2002) found grouping students heterogeneously could be harmful for both regular education students as well as TAG

learners. Average or low-ability students may view their “perceptions of themselves as competent, [yet] capable learners suffer” (Fielder et al., p. 110). The work of Allan (1991), Feldhusen (1989), Fielder et al. (2002), Kulik and Kulik (1990), and Rogers (1993) confirmed what TAG instructors have asserted for years: TAG learners profit mentally and socially as a result of being grouped with other TAG learners. If TAG learners are regularly instructing or clarifying information for other students, they are not able to utilize instructional time for their own edification. Heterogeneous grouping is characteristically unable to motivate or stimulate most TAG learners, leaving them uninterested, discouraged, and even apprehensive (Davis & Rimm, 2004). Many educators improvise with cooperative learning and focus on simple, lower-level skills at the expense of higher-level thinking, evaluation, and judgment exercises and lessons. Ross and Smyth (1995) emphasized cooperative learning must be mentally challenging for TAG learners, so they will not be as likely to simply recite memorized material to lower-ability classmates and spend class time on concepts they have already mastered. The incorrect presentation, or execution, of cooperative learning by teachers who are untrained in those methods may be the root of the discord (Huss, 2006). Additionally, constructivist research revealed that TAG learners prefer to work alone rather than to be grouped with their non-TAG peers (Davis & Rimm, 2005).

Oakes and Lipton (1992) further supported the idea that it is essential to serve the needs of the TAG learner:

One of the most logistically difficult and politically volatile aspects of tracking reform is whether and how heterogeneous schools and classrooms serve students with special needs—including those identified as intellectually gifted. Schools that are detracking successfully make sure that the special needs of these children are addressed—even when they are members of heterogeneous classes. (p. 450)

When school systems elect to forgo homogeneous grouping, they encounter a larger problem, politically, when they integrate TAG students who were formerly part of a TAG program into a heterogeneous grouping. Part of the difficulty pertains to the perceived status and prestige associated with gifted placements (Feldhusen, 1989). Teachers and parents know that these students received academic advantages in the specialized classes and they do not want to see students have lesser opportunities than they were previously afforded.

The findings of Oakes (1985), who proposed that grouping and tracking resulted in inferior education for students in average and below-average groups, are indeed troubling. Nevertheless, more recent findings suggested that when material is presented in comparable fashion to all students, the strategy of homogeneous grouping for TAG learners was not harmful to the educational, emotional, or social development of students who are not assigned to the grouping (Oakes, 1985).

Support for Homogenous Gifted Programming

By examining educational legislation and policy, it becomes evident that TAG students are not advocated for nor promoted in the creation and accountability of

instructional directives. Programming resources for gifted students are being eroded as a result of financial policies, teaching approaches, and the reappearance of impartiality (Colangelo et al., 1999; Davidson & Davidson, 2004; Delisle & Galbraith, 2002; Loew, 2008; McNeil, 2000; McWalters & Cheek 2000; NAGC, 2013; Ridley & White, 2004; Stanley & Baines, 2002; Strip & Hirsch, 2000; VanTassel-Baska, 2006). In reality, impartiality has developed into meaning that every learner should receive identical instructional experiences (Stanley & Baines, 2002). A more applicable representation of egalitarianism for TAG students provides all learners with the same opportunity to reach their learning capability. Once it is acknowledged that talents and gifts are not the same in all students, perhaps it can be determined that a uniform curriculum is not what best serves gifted learners. Stanley and Baines (2002) claimed, "If change does not occur, schools will continue to gravitate toward a kind of homogenized mediocrity centered on getting a majority of students up to a minimal level of achievement (p. 12)." In contrast, it has been shown that homogeneous grouping has had a substantial, affirmative result on academic success (Gamoran & Berends, 1987; Kerckhoff, 1986; Kulik & Kulik, 1982a, 1982b). Proponents of homogeneous grouping claim that a disservice is being done to both students and the future if TAG learners are not afforded suitable courses and curricula for intellectual progress. The danger is that these learners will not be educationally equipped to satisfy the requirements of a country that needs a capable, proficient, and able workforce who can rival other countries in the areas of mathematics and science, so that the country may sustain the quality of life necessary to uphold the

level of excellence of which it is capable (Gamoran & Berends, 1987; Kerckhoff, 1986; Kulik & Kulik, 1982a, 1982b). Educational planners must form heterogeneous classes that do not sacrifice the academic opportunities of TAG learners (Feldhusen, 1989). For decades, advocates for TAG education have been informed, “the needs of gifted students can be met in regular classrooms” (Feldhusen, 1989). However, the national government clearly did not accept this when the Marland Report was issued in 1972 and the national definition of giftedness stated that TAG learners “required differentiated programs and services beyond those normally provided by the regular school program in order to recognize their contribution to self and society.” Research directed by The National Research Center on the Gifted and Talented (NRC/GT) suggested that TAG learners in a heterogeneous setting receive nearly indistinguishable instructional and curricular practices from those provided to average ability students (Reis, 2007). The question regarding the use of one method of program delivery—a mainstreamed, inclusive, and heterogeneous classroom—to best serve the needs of all children, has not been determined. It is vital that further study be conducted to resolve what grouping best serves the needs of the TAG learner.

Middle School Concept

At the beginning of the 20th century and progressing into mid-century, educational systems referred to as *junior high* were designed to build a transitional phase between the protected and shielded primary school and the academically focused high school atmosphere (Juvonen et al., 2004). Beginning around the 1960s, the middle school

movement was developed to afford young adolescents with developmentally receptive education settings by utilizing instructional methods and strategies that support wholesome development and promote maximum acquisition and retention of information (McEwin & Greene, 2011). One of the major differences between junior high and middle school is the inclusion of sixth-grade in the middle school design. The configuration of a sixth- through eighth-grade learning environment was considered the ideal organization for students ages 10 to 14 (Cook et al, 2002). The deciding factors to determine the placement of sixth-grade in middle school or retention of it in elementary school included considerations of behavior and educational outcomes for sixth-graders as well as adjustment to puberty and interactions in social connections with classmates, family, and adult figures in authority, especially teachers (Cook et al., 2006).

The importance of educators in the learning process of children and adolescents appears to be particularly prominent in the development of TAG learners. Instructors of TAG learners need to apply specifically designed instructional lessons for their TAG learners to achieve their maximum potential (Park & Oliver, 2009). By focusing not only on sixth-graders in this study, but specifically on sixth-graders who are identified as TAG, a connection is being drawn to highlight the importance of a gifted certified teacher for the instruction of TAG students.

Gaps in Research and Practice

As indicated by studies from researchers such as Davis and Rimm (2005), and Davidson and Davidson (2004), the unique characteristics and intellectual challenges of

TAG learners may not be adequately addressed in regular education classroom settings. Providing the optimal learning environment for students could better equip them reach their maximum potential. Consequently, it is imperative that data exist to provide solid evidence regarding what is the optimal learning environment for TAG students.

Currently, such data are not exhaustive; more information is necessary to determine if the grouping difference has an effect on Lexile scores and academic averages. For example, studies such as those conducted by El-Koumy (2009), Park and Oliver (2009), and Sabharwal (2009) assessed the effectiveness of homogenous grouping by employing a social constructivist theoretical framework for both qualitative and quantitative study, but they did not directly compare student ability and performance for TAG students in the same grade enrolled in homogenous and heterogeneous classes. Furthermore, prior studies of the effect of this type of grouping (El-Koumy, 2009; Park & Oliver, 2009; Sabharwal, 2009) examined TAG science students and EFL reading students, but they failed to assess classroom performance as measured by levels of academic ability as measured by Lexile scores on standardized tests or course averages as recorded on report card grades. Thus, research is needed that directly compares ability scores and performance grades of students from a single grade enrolled in classes using each type of grouping. The type of research needed to address that gap is a quantitative quasi-experimental research design. For these reasons, the present study examined scores on the Lexile Scholastic Reading Inventory and student academic averages among sixth-grade TAG students enrolled in homogenous and heterogeneous instructional settings.

Information from this study will influence academic grouping for TAG students, and in turn, influence the programming of TAG classes.

Conclusion

The review of literature has provided information regarding current key findings in the area of instructional strategies that best meet the requirements of TAG students focusing specifically on homogeneous grouping (Lord et al., 2009). Although this investigation was concentrated on ability and performance through Lexile scores and academic averages for TAG students, important evidence has been revealed that is helpful in supporting the premise of this study (Fielder, Lange & Winebrenner, 2002, p. 109).

TAG students require many forms of instructional delivery (Davis & Rimm, 2004). These needs create a variety of instructional challenges related to the unique attributes of TAG learners. If students are not aligned with the classroom setting that best meets their academic needs, they are at risk of not being academically prepared for the future (Oakes & Lipton, 1992).

Many students have been enrolled into heterogeneous classroom settings, and many studies have been conducted to determine the effects on both TAG and regular education learners; however, there is little information available regarding a comparison between the ability and performance of a TAG learner in a homogeneous learning environment and the ability and performance of TAG learners in a heterogeneous learning environment. By providing a larger, more faceted investigation, the gaps in this

past research can become supplemented to better meet the instructional/programming needs of TAG learners.

Through this study I attempted to address the weaknesses caused by gaps in data by investigating the effect on TAG students when in both a homogeneously taught academic setting versus a heterogeneously taught academic setting through the collection of data in the areas of Lexile scores and academic averages. Section 3 describes the method that was used to conduct the investigation.

Section 3: Research Method

Introduction

The purpose of this quantitative study was to investigate the difference in academic ability and performance when TAG students are included in a heterogeneously taught class and in a homogeneously taught class for academic instruction. The intent of this study was to quantify any differences in ability as represented by Lexile scores and any differences in performance as represented in the academic averages for reading, language arts, and social studies between the two instructional settings: homogeneous and heterogeneous groupings. The problem that was investigated in this study was the need to determine the best learning environment for TAG students in order to afford optimal academic success during their educational experience. Determining whether TAG students were challenged to meet or exceed state standards or to exhibit gains in AYP reflective of the requirements of NCLB were the initial leading indicators driving this study. The impending implementation of the CCC further solidified the need to continue the research, as opponents to the CCC claim that it supports uniformity, rigor, and specificity with an agenda for financial gain (Kohn, 2010) without the establishment of enrichment for TAG students. For educators, administrators, school districts, and state systems trying to address the educational requirements of TAG learners, studies of this type have great importance. This section includes the research design and approach, the setting and sample of the study, the instrumentation and materials, data collection and analysis of the study, and the manner in which participants' rights will be protected.

Research Design and Approach

Two research designs were used in this study. Archival data were used to analyze changes of Lexile scores (ability) and academic averages (performance) for sixth-grade TAG students in heterogeneous and homogeneous classroom groupings.

To address the first question a quantitative, time series, quasi-experimental, between-group comparison of student ability level was used. Ability was measured using archival data from the changes in Lexile scores as determined by the SRI from the participant's Criterion Referenced Competency Test (CRCT). The participants were a group of sixth-grade TAG students, some of whom were in a homogeneously taught TAG reading class and some of whom were assigned to a heterogeneously grouped reading class. Class assignments were made by the school's assistant principal assigned to curriculum and scheduling. Lexile scores were obtained for all TAG students from both groupings for 2 consecutive years. The first set of data came from the participant's fifth-grade Lexile scores. An independent sample *t*-test was conducted to assess the magnitude of any pre-existing differences in reading ability between the homogeneously and heterogeneously grouped students in their fifth-grade year. The next set of data came from the participant's sixth-grade Lexile scores. The pretest scores were subtracted from the post-test scores from both groupings to measure change in reading ability. This pre-to-post change in Lexile scores served as the dependent variable for the first research question.

I used a quantitative, two-group, nonequivalent control group, quasi-experimental design to examine student performance to address the remaining three research questions. Participant's academic averages in reading, language arts, and social studies served as the measure for performance. Math and science, although they are core subjects, were excluded from the study. A majority of the TAG students received homogeneous instruction in both of these classes; therefore, the number of heterogeneously taught participants was insufficient to compare averages. Connection classes (or electives) were also excluded from the investigation because they are all heterogeneously grouped. I used an independent *t*-test to compare the reading, language arts, and social studies academic averages earned by students in both of the grouping conditions. The data were analyzed to determine if any grouping showed a significant difference in academic averages.

The intent of the study was to measure the differences in Lexile scores (student ability) and academic averages (student performance); therefore, according to Creswell (2003), the data needed to be quantified. This study was a quasi-experimental study because the participants were not selected through random assignment (Trochim, 2006). Instead, students were grouped based on the classes in which they were already enrolled at the time of the study. Research designs can never completely control for all potential confounding variables nor is there a consensus for how to compute adjustment coefficients (e.g., Lane & Henson, 2010; Shadish, Luellen, & Clark, 2006). As such, the potential for selection bias was increased for this study, and research results may be subject to treatment effects, which could be confounded by group differences as a result

of nonrandomization. This situation can limit researchers' capacity to precisely report treatment effects and make causal inferences (Hong & Raudenbush, 2005). Shadish, Luellen, and Clark (2005) indicated that when designed and executed properly, quasi-experimental designs may better reflect the complexity of the educational environment. Because the focus was on specific comparison between samples (i.e. heterogeneous grouping and homogeneous grouping), a quantitative research design provided the opportunity to make appropriate comparisons.

The performance indicators for Lexile improvement included archival data from the school system's SLDS. All data were obtained from records of identified TAG learners in the sixth grade. Lexile scores from the fifth-grade tests were also collected for these participants. I analyzed scores for TAG students in two academic settings: heterogeneously taught classes with no TAG instruction or modification and those that were enrolled in a homogeneously taught class with a TAG certified instructor.

The performance indicators for academic averages were archival data from the students' report card grades. These academic end-of-the year grade averages included scores from the sixth-grade reading, language arts, and social studies courses. The data included the averages of all TAG students in sixth grade. I compared TAG students in heterogeneously grouped instructional classes and TAG students in homogeneously grouped instructional classes.

Setting and Sample

The sample group comprised 42 or 43 (accounting for one outlier) TAG sixth-grade students from one rural northwest Georgia middle school. This site was chosen because Georgia is proactive in meeting the needs of the TAG and academically advanced learner (Sparks, 2010). This specific school system constructed classes that include homogeneous groupings to address the requirements of TAG learners as well as classes to address the requirements of regular education students and had the necessary data available for collection. For the purpose of this study, only the academic subjects of reading, language arts, and social studies were analyzed (See Table 1).

Table 1

Grouping of Participants by Subject Area

	Heterogeneous Grouping	Homogeneous Grouping	Number of participants
Reading	17	26	43
Language Arts	18	25	43
Social Studies	25	18	43

According to Lenth's suggestions (2006-9), based on a power analysis conducted using Lexile standard deviation of 2.00, and an alpha level of .05, a sample of 25 can provide a detectable between-group Lexile difference of 2.00 with a power level of .80.

All students who were identified as TAG students by the Georgia Department of Education eligibility requirements (2013) were included. The 43 students were assigned to either a heterogeneous or homogeneous instructional setting in each of the three

subject areas by the school administrator. I had no opportunity to randomly assign the students to the two groups.

Table 2 reflects the gender, economic status, and ethnicity of the school enrollment and compares it with the sample population used in this study. This school has a Title I school designation. The school serves approximately 14% of the student population in the TAG program (U.S. Department of Education, 2012).

Table 1

Gender, Economic Status, and Ethnicity School Population Compared to Sample Population

Characteristic	School Population		Sample Population	
	N	%	N	%
Gender				
Male	466	49	19	44.2
Female	486	51	24	55.8
Economically Disadvantaged				
Yes	419	44	9	20.9
No	533	56	34	79.1
Ethnicity				
Caucasian	781	82	41	95
African American	104	11	2	4.7
Hispanic	57	6	0	0
Dual Race	10	1	0	0

Instrumentation and Materials

This study includes data from two different sources: Lexile scores (to determine ability) and academic averages (to determine performance). Data were collected for each participant from the SLDS with permission from BCBOE.

Participants' ability was measured by the Lexile score. Lexile scores are determined from a reading program measured by the SRI, administered in as an element of the Georgia CRCT. The Lexile score is a prediction to determine how well students will likely comprehend 75% of a given text. The 75% comprehension rate is a target reading point set where readers will comprehend enough to understand the text, but will face some reading challenges. This level helps to set a point at which readers are not bored by text that is too easy, but also do not experience too much difficulty in understanding (Lexile.com, 2014).

I measured performance of the participants by the reading, language arts, and social studies academic averages assigned on the academic report card. These grades were stored in the SLDS. I used grades that were assigned by teachers based on the BCBOE grading policies and guidelines.

Independent Variable

Placement of students at the same school in either a heterogeneously or homogeneously taught classroom served as the independent variable for this study. In the heterogeneous condition, all students, regardless of academic identification into the TAG program, received the same academic instruction, assignments, expectations, and grading

requirements. Several course sections comprised the group's 43 participants. In all instances the classroom teachers were certified in the content and grade level being taught, but instructors of heterogeneous classes were not required to hold a gifted instructional certification. Teachers in the heterogeneously grouped classes did not provide any differentiation, modification, or acceleration provided for TAG students. In the homogenous groups, however, teachers for the TAG academic classes held certificates in both content and grade level being taught and held certificates in gifted education. The TAG content programming included differentiation and modification of instruction such as curriculum compacting, acceleration of content, instructional differentiation and/or modification, and the expectations of local board of education (LBOE) for continued participation in the gifted program.

Dependent Variables

Lexile Scores. Data revealing the student's Lexile scores were gathered from the archival data stored in Georgia's SLDS. These scores represent readers' ability to comprehend texts and have shown to be correlated to academic success in an academic class (Hughes, 2013). I then conducted an independent samples *t*-test to assess the magnitude of any preexisting differences in reading ability between the two groups of TAG learners. I subtracted the pretest scores from the post-test scores to measure change in reading ability taking place during the study period. This pre-to-post change in Lexile scores served as the dependent variable for this research question.

Academic Averages. I measured academic performance by academic averages earned by students in their reading, language arts, and social studies classes. The grades represented the numerical yearly average. The grading scale is based on the BCBOE's requirements for which F equals a score of 0 to 69, a D is 70 to 73, C is 74 to 79, B is 80 to 89, and A is 90 to 100. I obtained these scores from the archival data stored in Georgia's SLDS. I used an independent samples *t* test to individually compare the participants' reading, language arts, and social studies academic averages in both heterogeneous and homogeneous classes.

Reliability/Validity

The reliability of an instrument depends on the context in which the instrument is used and signifies the consistency of scores from one administration to another administration or from one set of items to another set of items (Fraenkel & Wallen, 2000). The Governor's Office of Student Achievement (GOSA) presented an annual report to provide accountability for all of Georgia's education agencies (Governor's Office of Student Achievement, 2014). In this study, two types of data were collected. Both the Lexile scores and the academic averages were used as measurement instruments.

Lexile Scores. Reliability. Multiple analyses were conducted to examine reliability of the Lexile scores. Reliability estimates range from 0.73–0.90 (calculated using Cronbach's alpha) on the field-test forms during 2007–2008. Researchers can be confident in the consistency and stability of the Lexile scores (Lexile.com, 2014).

Validity. Construct validity evidence, gathered during the 2007–2008 development process, provides information about how well the Lexile scores met the intended function. Several studies have provided evidence for the construct validity. The Lexile framework ensures users that the tests accurately measure reading comprehension (Lexile.com, 2014). It is important to examine the material presented, the phrasing of the questions, and the appropriateness of the test questions to measure the achievement being evaluated when validating an achievement test (Ary, Jacobs, Razavieh, & Sorensen, 2006). Lexile levels are measured within the reading component of the Georgia CRCT. The CRCT is a protected instrument and specific procedures are adhered to in order reach valid and reliable results. When testing materials arrive to the school campus, they are counted and signed for. The test items are maintained in a secured location until administration of the test. The CRCT is administered only by certified teachers who are required to attend test administration training. During testing, classrooms are organized in a fashion that reduces the opportunity for cheating. If there are more than 30 students in a class, a teacher, as well as a trained proctor, are required to monitor the testing room (Georgia Department of Education, 2013).

Academic Averages. Reliability. Although test-retest reliability data is not available for grades assigned to students in the present study, the clear grading procedures and criteria established by the district should minimize error variance. As directed by the BCBOE, in accordance with the Georgia Department of Education, grades are assigned according to learning objectives and performance expectations. Grades may

include procedural considerations, but must primarily evaluate the learner's degree of achievement in the academic area (2014). Grades earned by students in the classes they are assigned are derived exclusively from the achievement and performance in the class for which the grade is given. For the purposes of this study, the academic averages of the participants represent grade assignments from several individual instructors (GDOE, 2014).

In accordance with State law, no academic instructor should be commanded, pressured, threatened, or punished in any fashion to alter the grade of a student. Also in accordance with this law, principals or other local school administrators can still discuss the grade of a student with a teacher. Grades may be changed by administrators as long as the record is clear who made the change. Violations are considered to be ethics violations reportable to the Professional Standards Commission. This policy/law is negated when an educator has failed to obey the grading guidelines or requirement implemented by the local board of education or printed grading policies created by a single school (GDOE, 2014).

The measures for assessment should include, but is limited to, printed and spoken class requirements, homework assignments, grades earned on exams and quizzes, and performance on extra credit, bonus work, or supplementary exercises in addition to the regularly given standards, goals, and expectations for the class (GDOE, 2014).

Teachers are required to maintain current and accurate records representing the academic achievement of each student for the subject they teach. Teachers employed by

the BCBOE must post homework/class work, test/quizzes, and final exam grades online in the Power Teacher grade program. This program is accessible to parents/guardians using a given password for their child. In accordance with the BCBOE, averages are calculated using the following weights: homework/class work = 40%, tests and quizzes = 45% and final exam grade = 15% (BCBOE, 2014).

Validity. In addition to promoting grading reliability, the grading criteria guidelines noted above also ensured content validity—the degree to which a measure assesses all of the content it is expected to measure (Westen & Rosenthal, 2003). Furthermore, the predictive validity of middle school grade data has been well documented. Balfanz (2009) determined that sixth-graders who failed math or English/reading (or had other critical indicators such as poor attendance habits or unsatisfactory behavior) had only a 10% to 20% chance of graduating from high school on time. The first year in middle school, typically the sixth-grade year (as it is in the present study), tends to be a crucial year in for students to develop indicators that determine future educational success. The Southern Regional Education Board (2008) found course grades were better indicators of future dropout rates than standardized test scores. This is because course grades were both more reliable and had a higher yield (predicted a greater percentage of dropouts). The National Middle School Association (2006) observed that most middle grade students developed their path to graduation indicators (whether they be on-track or off-track) in sixth-grade. Calvert (2011) noted that educators need to be more intentional about serving early adolescents. They need to

pay particular attention to course grades for sixth-graders. To that end, policymakers, educational leaders, and teachers are encouraged to keep track of students' grades and develop articulated standards of practice, so they can create a baseline for operating and measuring middle school performance.

Data Collection and Analysis

I drafted explanations describing the purpose and procedures of the study and provided them to BCBOE, where the investigation took place. BCBOE granted permission to conduct the study September 2, 2014. In addition, Walden University Institutional Review Board granted approval for the study on December 10, 2014 under the approval number 12-10-14-0113640. I retrieved data retrieved from school and student records. The academic schedule for TAG students during their sixth-grade year was the most advantageous for this study. Using the schedules with identifying course numbers, I identified TAG students as those who are assigned to either a TAG homogenously grouped academic course or a heterogeneously grouped academic course. Once this list was assembled, I requested a representative of the host school system to access the SLDS, which houses the archival data with the Lexile scores and academic averages. I obtained data revealing each participant's Lexile scores from the students' fifth and sixth-grade as well as the yearly academic averages from reading, language arts, and social studies. The school prepared these scores on an Excel spreadsheet with an unidentifiable student code and provided to the data to me via email. All data were

entered and analyzed through the use of the computerized statistical software program, Minitab 17. Coded data are stored in the school vault with student records.

Lexile Scores

The provided list of sixth-grade TAG students represented the participants. The school's assistant principal in charge of curriculum and scheduling made the class rosters. Some of these sixth-grade TAG students were assigned to a homogeneously grouped TAG reading class, while others were assigned to a heterogeneously grouped regular education reading class. Using the coded system to identify students, data were collected to reveal Lexile scores. A Lexile scores for participants from both their fifth-grade year and their sixth-grade year were obtained. The difference in the Lexile scores was used to assess the magnitude of any preexisting differences in reading ability between the two groupings of TAG students.

The ability data measured by Lexile scores were used to test the following null hypothesis: TAG students enrolled in a homogeneously taught class will not show a significantly higher change in Lexile scores than those enrolled in a heterogeneously taught class. This hypothesis was tested using an independent-samples *t* test. A one-tailed probability level of .05 was used as the acceptable level of significance. One-tailed tests are recommended for testing directional hypotheses such as those in the present study (Churchill & Iacobucci, 2002; Pfaffenberger & Patterson, 1987).

Grade Averages

Using the same group of sixth-grade TAG students as the above participants, I continued this study by examining the performance of TAG students based on academic averages in both a homogeneous setting and a heterogeneous setting. In each of three subjects—reading, language arts, and social studies—I divided the TAG students between homogeneous and heterogeneous instruction (as previously shown in Table 1). Using the SLDS, I collected data representing academic averages from each of the given subjects. Each academic subject was then individually evaluated. As such, the reading averages of homogeneously grouped TAG students were compared with the reading averages of the heterogeneously grouped TAG students. Likewise, I analyzed the language arts and social studies averages of both groupings of TAG students. I then measured the effects in terms of whether there was higher, lower, or same average in the Lexile scores, and whether there was a higher, lower, or same score in the academic averages as revealed through the end of the year course grades of the two groups of TAG students—those grouped homogeneously and those grouped heterogeneously. I used the grade data obtained in this manner to test null hypotheses H_02-H_04 . To test each hypothesis, I used independent samples t tests. As these hypotheses are also directional, I used a one-tailed probability level of .05 as the acceptable level of significance for each one.

Threats to Validity

The intent of conducting this investigation was to compare the Lexile scores of TAG students in a homogeneously grouped instructional class with the Lexile scores of those same TAG students in a heterogeneously grouped instructional class, and to compare academic averages of those TAG students in both instructional settings. There are some potential internal and external threats to validity. Threats to internal validity may include the integrity with which the instructional delivery model for TAG instruction is administered. This would depend on the gifted certified classroom teacher offering differentiated instruction and/or advanced content for the TAG class on a consistent basis. A second threat to internal validity may include a preexisting group difference that cannot be ruled out because participants were not randomly assigned. External threats to validity may include racial or socioeconomic underrepresentation in the TAG program and the student population of the sample school. This threat is not specifically addressed in this study.

Protection of Participants' Rights

For this study, I used only archival data. The primary ethical concern in this study was that private student records were accessed. To maintain confidentiality and to protect the anonymity of students, I reported results anonymously with the focus on Lexile scores and academic averages comparisons rather than individual's student scores. Individual student data were coded by a school administrator and, prior to being shared with me, all

identifiable information was deleted so student anonymity was preserved. Only coded data were analyzed and reported by the statistician.

Role of Researcher

During the time of this study, I was a full-time eighth-grade language arts gifted and regular education instructor in the middle school that was selected for the investigation. I have a bachelor's, master's, and specialist's degree in education and am certified in early childhood education, middle school education, language arts, reading, math, science, and social studies with add-ons in gifted education and administration. I am a master teacher with 26 years of experience in public education as well as Department of Defense Dependent Schools (DoDDS). In this investigation, I participated in analysis of the data with the help of a statistician.

Conclusions/ Summary

This investigation was intended to be a comparison of the homogeneous and heterogeneous groupings of TAG learners in an academic instructional environment. A quantitative design was developed to obtain information that could be used to determine the scheduling and curriculum planning for the TAG students in a sixth-grade academic setting. The independent variable was the academic placement of the TAG students and the dependent variables were the Lexile scores and the academic averages. The research questions necessitated quantitative analysis to determine the effects on TAG students when included in a heterogeneously grouped class for academic instruction. Paired comparison *t* tests were used to analyze the data obtained. I provided a report describing

results to the sample school as well as the school district with all necessary recommendations regarding the design of the curriculum planning and schedule organization for the benefit of TAG learners and their academic successes. Confirmation from the analysis was presented to the school board with all findings suggesting improvement or support for the academic success of TAG students.

Section 4: Analysis of Data and Presentation of Results

Introduction

This section is organized around the four research questions and their related hypotheses. Results of the statistical analysis of the data collected are presented.

Results of Research Question 1:

How does the difference in reading ability from fifth-grade to sixth-grade, as measured by the change in Lexile scores, of sixth-grade TAG students enrolled in a homogeneously taught academic class compare with the reading ability of sixth-grade TAG students enrolled in a heterogeneously taught academic class?

Using the Minitab 17 statistical program, I subtracted the fifth-grade Lexile scores of the study group from the sixth-grade scores. I then compared the data for those students who were in a homogeneously grouped sixth-grade reading class and those who were in a heterogeneously grouped sixth-grade reading class. While examining the results, I noted that one specific score in the heterogeneous grouping was so far from the median, that it could skew the results, especially with the small number of participants (see Table 3). The fifth-grade Lexile score for this student was 685 and the next lowest score was 895, while the mean score of the group at 1037. The sixth-grade Lexile score from the same participant was 1025; therefore, the degree of improvement (340 points) between the fifth and sixth grades presented a skewed outcome. Consequently, this score was considered to be an outlier and was excluded from an additional data analysis.

Table 2

Descriptive Statistics: Lexile Difference with Outlier

Condition	<i>N</i>	<i>M</i>	<i>SD</i>	Minimum	<i>Mdn</i>	Maximum
Heterogeneous Grouping	17	74.7	63.6	-95.0	70.0	225.0
Homogeneous Grouping	26	90.4	57.4	40.0	70.0	340.0

Poor attitude for the day, apathy for the test, sickness, lack of sleep, absence of morning nutrition, distraction, personal issues, or other personal issues could be possible reasons for the outlier. It is also possible that in one school year, this particular student made significant gains in her reading ability. Using archival data, it is impossible to determine the actual cause that made the difference between the two testing years so substantial.

In Table 4, the median and maximum remained the same in the heterogeneous grouping even after the outlier was removed. The mean, however, became more closely aligned with the mean of the homogeneous grouping in the second analysis. Regardless, both analyses indicated that the homogeneously grouped reading students had a higher Lexile mean and maximum than did their heterogeneously grouped counter parts. An independent samples *t* test for this difference did not exceed the threshold for statistical significance. A one-tailed test of significance revealed a *t* value of 0.31 and a *p* value of 0.38. The results did not support the rejection of H_0 .

Table 3

Descriptive Statistics and Results of Independent Samples T Test: Lexile Differences without Outlier

Condition	<i>N</i>	<i>M</i>	<i>SD</i>	Minimum	<i>Mdn</i>	Maximum
Heterogeneous Grouping	16	85.3	47.3	35.0	70.0	225.0
Homogeneous Grouping	26	90.4	57.4	40.0	70.0	340.0

t value of group difference = 0.31, *p* = 0.38 (one-tailed).

Results of Research Question 2:

How does reading class performance, as measured by the academic average, of sixth-grade TAG students enrolled in a homogeneously taught reading class compare with the performance of sixth-grade TAG students enrolled in a heterogeneously taught reading class?

To determine results from research question two, I performed an individual statistical analysis for the reading academic averages from each participant. Of the 43 participants, 17 yielded averages from the heterogeneous grouping. The reading mean score was 92.24. The remaining 26 participants yielded averages from the homogeneous grouping and had a mean score of 92.46 as seen in Table 5. Although the mean, the median, and the maximum scores were higher for the homogeneously grouped students, further analysis failed to show a significant difference between the two. A one-tailed test

of significance revealed a t value of 0.17 and a p value of 0.43. As a result, it was not possible to reject H_0 .

Table 4

Descriptive Statistics and Results of Independent Samples T Test: Reading Yearly Average

Condition	N	M	SD	Minimum	Mdn	Maximum
Heterogeneous Grouping	17	92.24	3.75	84	93.0	98
Homogeneous Grouping	26	92.46	5.09	78	93.5	99

t value of group difference = .17, p = 0.43(one-tailed).

Results of Research Question 3:

How does language arts performance, as measured by the academic average, of sixth-grade TAG students enrolled in a homogeneously taught language arts class compare with the performance of sixth-grade TAG students enrolled in a heterogeneously taught language arts class?

The second academic subject to be evaluated was language arts. I compared the same 43 participants; however, the class grouping was somewhat varied in comparison to the reading groups. There were 18 students in the heterogeneous grouped class and 25 in the homogeneous grouped class. These numbers may or may not represent the same participants from the previous calculation. The mean, median, and maximum were again higher for the students representing the homogeneously grouped classroom (see Table 6).

A one-tailed test of significance revealed a t value of 1.39 and a p value of 0.09.

Although this p value approached significance, the findings did not support rejection of H_0 . It is possible that with increased power from a larger sample size, the null hypothesis could have been rejected.

Table 5

Descriptive Statistics and Results of Independent Samples T Test: Language Arts Yearly Average

Condition	N	M	SD	Minimum	Mdn	Maximum
Heterogeneous	18	93.22	4.73	81.00	94	98
Homogeneous	25	94.92	2.48	87.00	95	99

t value of group difference = 1.39, $p= 0.09$ (one-tailed).

Results of Research Question 4:

How does the social studies performance, as measured by the academic average, of sixth-grade TAG students enrolled in a homogeneously taught social studies class compare with the performance of sixth-grade TAG students enrolled in a heterogeneously taught social studies class?

I tested the hypothesis for the final academic subject, social studies, using the same methods as the testing for the previous two academic subjects. Also, like the previous two tests, all of the participants were identified as TAG learners, but not all of them were served in a TAG instructional setting. Using the same 43 participants, in their respective grouping, there were 25 students served in a heterogeneous classroom

environment and 18 served in a homogeneous classroom setting. Once again, the analysis revealed that the mean, the median, and the maximum scores were higher for the students enrolled in the homogeneously grouped classroom setting (see Table 7). With a one-tailed test of significance, the results revealed a t value of 1.94 and a p value of 0.03. As a result, for the social studies yearly average, the null hypothesis can be rejected.

Table 6

Descriptive Statistics and Results of Independent Samples T Test: Social Studies Yearly Average

Condition	N	M	SD	Minimum	Mdn	Maximum
Heterogeneous	25	91.20	5.55	74.00	93.0	97.00
Homogeneous	18	93.83	3.33	88.00	94.5	99.00

t value of group difference = 1.94, $p = 0.03$ (one-tailed).

Even though it was not possible to reject the null hypotheses for this study for the first three research questions, there are some important findings that can be derived from these conclusions. This study revealed one significant finding from the fourth research question. The academic averages of TAG students were compared between homogeneously grouped and heterogeneously grouped classes independently in the three subjects of reading, language arts, and social studies. As a result, a finding approaching significance ($p = .09$) was obtained in the area of language arts. TAG students enrolled in the homogeneously TAG social studies classroom setting received significantly higher

academic averages on report cards than those enrolled in heterogeneously grouped social studies classes. These findings provide empirical evidence for the benefits of homogeneous grouping, and suggest recommendations for action that could contribute to positive social change. Finally, the mean scores in every category were higher in the homogeneous grouping than in the heterogeneous grouping, in spite of the fact that 40 of the 43 students evaluated were enrolled in both homogeneous and heterogeneous classes at various points throughout the collection period. This finding could suggest that a comparison of students exclusively enrolled in one or other of the two types of groupings may be able to demonstrate the hypothesized effects of homogenous grouping. Implications of these findings for teachers, guidance counselors, educational leaders, as well as other notable discoveries are discussed in the next section.

The results of the study lead to a discussion of the interpretation of findings where suggestions from the data are given. Information is presented that addresses the implications of the results from the data. Recommendations for action as well as ideas for further study are also provided.

Section 5: Discussion, Conclusions, and Recommendations

This section provides a summary of the study, noteworthy observations, and suggestions regarding possible future studies as a result of the findings. It also includes recommendations for action as well as implications for positive social change.

Introduction

The purpose of this study was to assess the degree to which Lexile scores and academic averages of sixth-grade TAG students enrolled in homogeneously TAG classrooms compared with the academic averages and Lexile scores of sixth-grade TAG students enrolled in heterogeneously grouped classes. Information obtained from this study may be used to promote the future need for inclusion of TAG students in a homogeneous classroom setting.

Section 1 of this doctoral study provided an introduction to the study by presenting the problem statement, nature and purpose of the study, theoretical framework, operational definitions, assumptions, limitations, scope, delimitations, and the significance to this study. In doing so, this section included information regarding the need to better understand the unique characteristics of the TAG child as well as to recognize the ways through which school systems' TAG curriculum is created, restored, and validated. The assertion was made that quality, gifted endorsed, certified teachers are relevant to the education of TAG identified students and that teachers' attitudes and actions impact the learning environment of the student and the TAG program. This introductory section also included information that supported the idea that successful

TAG instructional programs can provide an opportunity for TAG students to contribute to society via their talents and skills by being prepared to achieve in a more global and complex world.

In Section 2 of this study I presented a review of literature in eleven segments to explain and support the idea that the ability grouping of middle grade students may impact the Lexile scores and academic averages of TAG students. These segments included research based findings in the areas of instructional strategies, academic achievement, classroom setting, and characteristics of TAG learners. Emphasis was given to information pertaining to homogeneous and heterogeneous groupings of students based on academic abilities. The section concluded by stating a need for research in the area of comparison between TAG students who are served in both a homogeneous as well as a heterogeneous academic grouping. This doctoral study was developed to address that specific need while also providing a larger, more faceted investigation as it included comparison of data from two data sources—Lexile scores and academic averages—thus addressing the gaps in data on the effects of TAG students when in both homogeneously and heterogeneously grouped academic classes.

The method of research is presented in Section 3 of this study. This research addressed four questions:

1. How does the difference in reading ability from fifth-grade to sixth-grade, as measured by the change in Lexile scores, of sixth-grade TAG students enrolled in

a homogeneously taught academic class compare with the reading ability of sixth-grade TAG students enrolled in a heterogeneously taught academic class?

2. How does reading class performance, as measured by the academic average, of sixth-grade TAG students enrolled in a homogeneously taught reading class compare with the performance of sixth-grade TAG students enrolled in a heterogeneously taught reading class?

3. How does language arts performance, as measured by the academic average, of sixth-grade TAG students enrolled in a homogeneously taught language arts class compare with the performance of sixth-grade TAG students enrolled in a heterogeneously taught language arts class?

4. How does the social studies performance, as measured by the academic average, of sixth-grade TAG students enrolled in a homogeneously taught social studies class compare with the performance of sixth-grade TAG students enrolled in a heterogeneously taught social studies class?

Because I used two data sources in this investigation, I used two research designs.

The first research question was formulated to determine the percentage of increase or decrease of Lexile scores between TAG students of the same grade level who were enrolled in different academic settings. Because data were collected from two consecutive years (to measure the change in reading ability between year one and students in year two and thus serving as the dependent variable), I used a quantitative, time series quasi-experimental between group comparison for this research question. I

formulated the remaining research questions to compare academic averages for sixth-grade TAG students in reading, language arts, and social studies classes who were enrolled in both homogeneously and heterogeneously grouped instructional classes. I collected and independently analyzed data from each of the three subject areas. To examine student performance, I use a quantitative, two-group, nonequivalent control group, quasi-experimental design. I used the data analysis to determine if any grouping showed a significant difference in Lexile scores or academic averages. The data collected represented archival records obtained from the SLDS of a sample group of 43 sixth-grade students. I entered and analyzed the data through the use of the computerized statistical software program, Minitab 17. I used paired comparison *t* tests were used and a probability level of .05 was used as the acceptable level of significance.

The fourth section of this doctoral study revealed the analysis of data and presentation of results of the hypotheses. The first hypothesis was: TAG students enrolled in a homogeneously taught class will not show a significantly higher change in Lexile scores than those enrolled in a heterogeneously taught class. The statistical analyses did not prove a significant difference, and therefore, the null hypothesis could not be rejected. The second hypothesis was: TAG students enrolled in a homogeneously taught reading class will not earn significantly higher reading academic averages than those enrolled in a heterogeneously taught reading class. The results from the reading academic averages produced a one-tailed test of significance of a *t* value of 0.17 and a *p* value of 0.43. These values did not prove a significant difference, and the null hypothesis was not rejected.

The third hypothesis was: TAG students enrolled in a homogeneously taught language arts class will not earn significantly higher language arts academic averages than those enrolled in a heterogeneously taught language arts class. This resulted in a one-tailed test of significance t value of 1.39 and a p value of 0.09. This did not produce the 0.05 that was used as the level of significance in this study, and therefore, could not reject the null hypothesis. However, these findings strongly suggest that homogenous grouping is more effective than heterogeneous for the TAG learner and they indicate that additional research using a larger sample group is needed to provide more conclusive evidence. The fourth hypothesis was: TAG students enrolled in a homogeneously taught social studies class will not earn significantly higher social studies academic averages than those enrolled in a heterogeneously taught social studies class. Using a one-tailed test of significance, the results revealed a t value of 1.94 and a p value of 0.03. This conclusion succeeded in rejecting the null hypothesis.

The final section provides observations relating to the interpretation of findings, implications for social change, recommendations for action, and recommendations for further study.

Interpretation of Findings

The data from the social studies classes revealed a rejection of the null hypothesis indicating that TAG students in social studies benefit from a homogeneously grouped academic setting. More than other classes, the curriculum of social studies is self-inclusive. For the most part, the material is new and based upon a time period, topic, or

culture; it does not build upon previous material and then move forward as do the concepts of math, reading, and language arts. Perhaps that isolation in curriculum allows students to gain greater academic success when grouped with like peers. This opportunity to present new curriculum (rather than build upon previous material) enables teachers a less restricted setting in which to deliver instruction with differentiation for TAG students. Learning modalities and teaching strategies from prior classes in a particular subject would hold less influence than in courses where concepts from the current year build upon previous years. Also, when grouped with like peers, students tend to rise to the level of their expectations. Being grouped in a class with advanced peers would inspire TAG learners to achieve at the level of their TAG peers as well as to the higher expectations of the TAG instructor.

The data analysis from the language arts academic averages approached a level of significance with a p value of 0.09. Even though academic grouping did not make a significant difference, the academic averages of the language arts students were influenced by the grouping. A further, in-depth study with a larger sample size might reveal specific areas within the language arts curriculum that show a profound effect from grouping TAG students in a homogeneous classroom setting.

The reading academic averages and the Lexile scores did not yield a significant difference between TAG students enrolled in a homogeneously grouped class and those enrolled in a heterogeneous grouped class. Lexile scores reflect reading ability and as such are closely related to the subject of reading. Results from this study suggest that

TAG students will read at a level above their grade level peers and earn superior report card averages regardless of how they are grouped or how instruction is presented.

Reading for pleasure can be a personal preference, especially if students have the opportunity to choose the book, author, topic, level, or genre for themselves. Because the reading material would include literature of the individuals' personal interest, reading may become intrinsically motivated, rather than a result of the classroom grouping or instructional strategies employed by the teacher.

Implications for Social Change

The findings that permitted rejection of the null hypothesis suggest that positive social change could come in the form of providing homogenous grouping of TAG students in classes taught by teachers with gifted education certification. As noted in the conclusion of Section 4, regardless of the individual student, the overall mean from both the Lexile scores and the academic averages were higher among TAG students enrolled in homogenous TAG instructional classes. As a result, this study supports the need for curriculum programmers to continue providing inspiring programs, stimulating assignments, and challenging assessments that encourage TAG learners to realize their educational capability.

The potential for social change includes improvements in problem solving and decision making ensuring that all students can achieve their personal potential to succeed in a global work community. As noted in the introduction in Section 1, TAG students who are grouped according to their capability have an increased chance of higher

achievement, motivation, attitude, goal valuation, and self-regulation. The future results of that grouping improve their success for early college entrance, higher levels of education, vocational accomplishments, and upper levels of income. The challenge and encouragement of all students, TAG identified and nonidentified TAG learners, to excel, succeed, and to achieve will impact the U.S, and the world. Implementation of the recommendations from this study can provide positive social change in providing the learning environment necessary for TAG students to become lifelong learners today so that the U.S. will have the leaders, scholars, and innovators needed for the future.

Recommendations for Action

Recommendations for action would include reinforcement, funding, and support for homogenously grouped academic classes with emphasis on social studies classes. Additional encouragement from the local school and district for educators to become certified in gifted education would assure the availability of qualified and skilled instructors who are trained to meet the requirements of TAG learners.

Professional development classes may benefit general education teachers by making them aware of the significant differences between the academic performance of TAG learners and regular education learners in regard to the instructional setting and methods of instruction. Recommendations reaching into the community include the establishment of a reference library for parents and school personnel that includes resources and reading materials relating to best practices for educating TAG students. Another recommendation is to set up a regular/reoccurring question/answer forum

through which professional educators, educational leaders, parents, and most importantly TAG students discuss current issues, solve problems, and introduce evolving research in the field of TAG education.

Another suggestion for social action is to increase awareness of the idea that correlating instructional levels and instructional settings with academic abilities is paramount for expanding instructional efficiency for every learner. Every learner's distinctive abilities and aptitudes, TAG or nonTAG, can be nurtured in a setting that respects uniqueness and encourages the success of every learner. Structuring academic standards and instructional lessons to meet the individual needs of students will aid them in growing intellectually, socially, and emotionally.

Recommendations for Further Study

Recommendations for future research include further investigation to determine why the subject of social studies yielded a significant result in the academic averages of sixth-graders, whereas reading, language arts, and Lexile scores did not. This study could also be enlarged to encompass the subject area of math and science. Future research may also include other grade levels and exploration of the possibility of significant results in all subjects from other grade levels. Another recommendation to extend the research of this study is to use a larger sample group. This larger group could determine whether or not the grouping manipulation can increase performance in the other subject areas, specifically in language arts as this study resulted in data that approached significance in that subject area. The larger sample group could be derived from several schools of the

same grouping make-up as well as from several grade levels also containing TAG identified learners assigned to both homogeneous and heterogeneous academic settings.

Future studies could investigate the causes as to why the overall mean from both the Lexile scores and the academic averages were consistently higher among TAG students enrolled in TAG instructional classes for each of the four areas tested. Possible hypotheses could include that TAG students perform better when enrolled in a homogeneous environment; or that because the course level is more challenging, the homogeneous grouping inspires competitiveness among TAG students; or that there is a different instructional approach from gifted endorsed instructors; or possibly, that in some districts, as is the case in the district used in this study, there is a minimum grade requirement for remaining in homogeneously grouped classrooms.

Noteworthy results from this investigation might be expanded through use of alternate data collection techniques. Some of these techniques could include observations, interviews, and surveys. Use of these multifaceted investigations may produce a more well-rounded and in-depth result.

Overall, findings from this study are consistent with past research in that ability grouping of TAG students is advantageous to the education of those students. This investigation supports the need for educators, course schedulers, administrators, curriculum directors, system leadership, and policy makers to group students according to the academic setting that best accommodates their needs.

Conclusion

This investigation explored the effectiveness of TAG grouping in a TAG instructional based classroom. Results indicated student performance in homogeneously grouped social studies classes was higher than student performance in heterogeneously grouped social studies classes. Observations, suggestions, and recommendations derived from those analyses involve further teacher training, dialog among involved stakeholders, and scheduling of a sufficient number of teachers and classes for continuation/extension of homogeneous social studies TAG classes.

If focus is placed on aligning curriculum and instruction to address the requirements of individual learners, it is conceivable that not only the TAG population, but also regular education students, could reach their individual potential and produce positive change for society. Preparing the leaders of the next generation should take place in the best learning environment possible so they are ideally equipped for the future.

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