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The Impact of Inclusion on the Achievement of Middle School Students with Mild to Moderate Learning Disabilities

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COLLEGE OF EDUCATION

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Ruth Carol Hawkins

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Walden University
2011

Abstract

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M.Ed. Middle Tennessee State University, 1991

B.S. Middle Tennessee State University, 1980

Doctoral Study Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Education

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Abstract

According to IDEA and NCLB requirements, students with disabilities are held to the same standards established for nondisabled students. The purpose of this quantitative study was to examine the impact of a special education inclusion program for middle school students with mild to moderate learning disabilities. Student outcomes were measured based on the Tennessee Comprehensive Assessment Program (TCAP) test scores for reading/language and mathematics. The theoretical foundation for this study was Vygotsky's social development theory applied to special education inclusion programs to support learning within the general curriculum for students with mild to moderate learning disabilities. An independent samples *t* test was used to measure the difference in the means of the TCAP scores for 2 cohorts of Grade 6, 7, and 8 students with disabilities (one group taught before the implementation of an inclusion program and one group taught after the implementation of an inclusion program). The findings indicated that inclusion had a significant positive impact on TCAP scores in both reading/language and mathematics. The implications for positive social change generated by this research include a better understanding of the impact of an inclusion program on the TCAP scores of students with mild to moderate learning disabilities at one middle school in Tennessee. Effective IEP decisions have implications for social change because positive educational experiences for middle school students with mild to moderate disabilities increase the likelihood such students will graduate from high school to enter higher education or the work force.

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Section 1: Introduction to the Study

Introduction

The Individuals with Disabilities Education Act (IDEA; 2004) requires "providing appropriate special education and related services, and aids and supports in the regular classroom, to such children [children with disabilities], whenever appropriate" (IDEA, 601.c, 5[D]). The broad definition for inclusion is a commitment to providing special education services in the least restrictive environment in the general education setting with supports and accommodations based on the individual student's needs (Burstein, Sears, Wilcoxen, Cabello, & Spagna, 2004; Carpenter & Dyal, 2007; Gordon, 2006; Idol, 2006; Sailor & Roger, 2005; Villa & Thousand, 2005). The interpretation of inclusion resulted in a variety of applications for special education programs. In some applications inclusion was defined as a collaborative effort between general education and special education with the roles of the teachers ranging from a coteaching model to a consultative model (Carpenter & Dyal, 2007; Friend, 2007; Gordon, 2006; Idol, 2006; Murawski & Dieker, 2008; Sailor & Roger, 2005; Weiss & Lloyd, 2002).

Strategies for providing the necessary support for students with disabilities in the general education setting include accommodations to improve access to the general education curriculum, differentiated instructional practices, and modified or adapted materials (Anderson, 2007; Fahsl, 2007; Hardman & Dawson, 2008; Janney & Snell, 2006; Paulsen, 2008; Sailor & Roger, 2005; Voltz, Sims, Nelson, & Bivens, 2005). For many students with disabilities, placement in the general education classroom with

supports as needed is an appropriate and required service, and the general education setting should be the first placement considered (IDEA, 2004).

The No Child Left Behind Act of 2001 (NCLB) required that states account for improved adequate yearly progress (AYP) for all subgroups, including students with disabilities (Yell & Drasgow, 2005). Additionally, IDEA called for higher expectations and increased access to the general education curriculum for students with disabilities (IDEA, 2004). The goal of instructional programs for students with mild to moderate learning disabilities was to support students' efforts to master curriculum standards.

Students with mild to moderate disabilities "participate in the regular curriculum with appropriate adaptations and support" according to the licensure standards for special education teachers in Tennessee (Tennessee Department of Education [TDOE], 2002, p. 26). The response to IDEA and NCLB in the study site school system in Tennessee was to increase the inclusion of students with mild to moderate learning disabilities in the general education setting. A review of the literature revealed a lack of evidence for the effect of special education services, specifically special education inclusion, on student achievement as measured by standardized achievement test scores for reading/language and mathematics.

Through the provisions of the Education for All Handicapped Children Act of 1975 (EHA), public schools were required to provide a free and appropriate public education to all students with disabilities in the least restrictive environment (EHA, 1975). This law increased the number of students with disabilities involved in special

education throughout the United States and in Tennessee. During the 1976-77 academic year, 3.7 million students with disabilities (8.3% of the total public school enrollment) were served in U.S. schools (United States Department of Education [USDOE], 2009a). By the 2007-08 academic year, that number grew to 6.6 million (13.4 % of the total public school enrollment; USDOE, 2009a). Special education also expanded in Tennessee, and in 2007-2008 12.5% of the total public school enrollment in the state included students served under IDEA (USDOE, 2009b). One major influence during this expansion came in 1986, when Madeleine Will, then Assistant Secretary for the Office of Special Education and Rehabilitative Services (OSERS) in the U.S. Department of Education, proposed what came to be called the regular education initiative, which encouraged services for students with disabilities as an integral part of education for all students (Will, 1986). Will's (1986) statements regarding the barriers that special education pullout classes created included a call for increased cooperation between regular and special education and provided the impetus for the inclusion movement.

In general education and special education settings, instruction for students with disabilities is grounded on meeting the needs of all learners to achieve the grade appropriate standards (Anderson, 2007; Appling & Jones, 2007; Hardman & Dawson, 2008; IDEA, 2004; NCLB, 2002; Villa & Thousand, 2005; Voltz & Collins, 2010; Weishaar, 2008). The educational leaders at the study site, which was a school district, designed a special education program to address the needs of students with disabilities by providing services in both the special and general educational settings, as supported by

research (Bouck, 2007b; Carpenter & Dyal, 2007; Fore, Hagan-Burke, Burke, Boon, & Smith, 2008; Hochschild & Scovronick, 2003; Zigmond, 2003).

A review of related literature indicated that Individual Education Program (IEP) teams in the United States increased the numbers of students with mild to moderate learning disabilities placed in the general education setting for instruction (Fahsl, 2007; Hochschild & Scovronick, 2003; Rice, 2005; Sailor & Roger, 2005). Although available data were not precise about the true extent to which students were being included due to reporting differences among states (McLeskey, Hoppey, Williamson, & Rentz, 2004), the percentage for students with disabilities age 6 to 21 in the United States receiving instruction within general classes for 80% or more of the school day went from 49.9% in 2003-2004 to 53.7% in 2006-2007 (USDOE, 2009c). Educators were faced with the dilemma of deciding the most effective means of providing special education instruction that respected the needs of the student as an individual (Cortiella, 2007; Doran, 2008; Fore et al., 2008; Johnson, 2007; Landrum, 2008; Rea, McLaughlin, & Walther-Thomas, 2002; Rollins, 2007; Zigmond, 2003). The EHA (1975) included several requirements that states make efforts to enable students with disabilities to participate in the general education setting with nondisabled students. IDEA (2004) reaffirmed the concept that educating students with disabilities should include availability to the general education setting; although, the reauthorizations to these federal laws did not require that IEP teams place students in the general education setting nor did the laws define the terms of such placement. Increased emphasis on accountability was one effect when Will (1986) stated

that low expectations for students with disabilities impeded their full access to an appropriate education, and this premise was repeated in IDEA:

> Almost 30 years of research and experience has demonstrated that the education of children with disabilities can be made more effective by having high expectations for such children and ensuring their access to the general education curriculum in the regular classroom, to the maximum extent possible, in order to meet developmental goals and, to the maximum extent possible, the challenging expectations that have been established for all children. (IDEA, 2004, section 601c.5[A])

Legislation provided the framework for including students in the general curriculum; however, state and local school administrators and educators retained control in the design and implementation of special education programs, so "special education can become a service for such children rather than a place where such children are sent" (IDEA, 2004, section 601c.5 [C]).

In recognition of the specialized training needed by educational personnel to effectively include students with disabilities in the general curriculum, provisions for preservice preparation and professional development were included in IDEA (2004). Improved professional development was seen as crucial to the effective implementation of inclusion programs for students with disabilities (Berry, 2010; Carpenter & Dyal, 2007; Conderman & Johnston-Rodriguez, 2009; Idol, 2006; Murawski & Dieker, 2008; Rice, 2005; Rock, Gregg, Ellis, & Gable, 2008; Smith, Robb, West, & Tyler, 2010;

Swindler, 2007; Sze, 2009; Van Laarhoven et al., 2006; Voltz & Collins, 2010; Weishaar, 2008). Another important factor for considering placement in both general and special education settings were mandates that special educators meet NCLB highly qualified status in content and skills (Appling & Jones, 2007; Drame & Pugach, 2010; Gordon, 2006; NCLB, 2002).

I conducted this study in a school district that provided extensive professional development opportunities for general and special educators and involved special education personnel in curricula planning at the district and school levels. The provision in NCLB that students must receive instruction from highly qualified teachers was a primary impetus for the decision made by the study site school district to move toward inclusion programs, because special education teachers, especially at the middle school level, often did not meet standards for being highly qualified in content areas such as mathematics (Appling & Jones, 2007; Carpenter & Dyal, 2007; Drame & Pugach, 2010; Gordon, 2006). At the study site, middle school teachers were provided with training and support for developing inclusion programs to meet the needs of students with disabilities in the general education setting; however, outcomes had not been evaluated to identify the impact of inclusion on students' reading/language and mathematics Tennessee Comprehensive Assessment Program (TCAP) test scores.

The implementation of special education services involves a community of practice especially for students with mild to moderate learning disabilities, who are held accountable for the same grade-level standards as students without disabilities. The

educators at the study site were expected to work together in a school-wide effort to collect and utilize data, improve communication, and define teaching roles as needed to implement the special education inclusion program (Morris & Mather, 2008; Paulsen, 2008; Sailor & Roger, 2005; Torres-Guzman et al., 2006; Voltz et al., 2005). Teams identified the means of providing instruction in the general education setting with the addition of easily implemented accommodations (Anderson, 2007; Fahsl, 2007; Hardman & Dawson, 2008; Idol, 2006; Janney & Snell, 2006; Morris, 2008; Nugent, 2008; Sailor & Roger, 2005; Villa & Thousand, 2005). During the process of implementing the inclusion program, the faculty and administration at the study site recognized that an effective inclusion program required more than implementing a few accommodations. Inclusion required a commitment to a belief system that all students can learn, and the inclusion program required nurturing and collaboration in order to sustain change (Burstein et al., 2004; Idol, 2006; Janney & Snell, 2006; Sailor & Roger, 2005; Villa & Thousand, 2005).

A review of current literature revealed that researchers examined the inclusion of students with mild to moderate learning disabilities in the general education setting; however, the literature revealed conflicting evidence about the effectiveness of inclusion on student achievement in this setting (Fore et al., 2008; Hochschild & Scovronick, 2003; Landrum, 2008; Mackie, 2007; McCullough, 2008; Rea et al., 2002). At the study site, the middle school had not made a systematic comparison of the effects of special

education inclusion programs on the achievement of students with mild to moderate learning disabilities as measured by TCAP reading/language and mathematics test scores.

According to the Tennessee Department of Education Report Card for 2009, the study site school district educated 36,084 students with 4,976 identified as students with disabilities (TDOE, 2010). On the 2009 TCAP achievement testing, for the students in grades K-8 in this school system assessed on TCAP mathematics, 95% of all students scored in the Proficient or Advanced categories, while 80% of students with disabilities scored in the Proficient or Advanced categories. For the students in grades K-8 in this school system assessed on TCAP reading/language, 95% of all students scored in the Proficient or Advanced categories, while 82% of students with disabilities scored in the Proficient or Advanced categories. In 2009 in this school system, 66% of students with disabilities spent 80% or more of the school day in the general education setting (TDOE, 2010). According to the requirements of NCLB, by the 2008-2009 academic year 86% of students in all subgroups were expected to score at the Proficient or Advanced levels to meet AYP benchmarks for reading/language, and 86% of students in all subgroups were expected to score at the Proficient or Advanced levels for mathematics (TDOE, 2009b). By the 2013-2014 academic year 100% of students in all subgroups must score at the Proficient or Advanced levels for both of those subjects (TDOE, 2009b).

At the study site, the research problem was twofold. Specifically, (a) Grade 6, 7, and 8 students with disabilities were not meeting required standards of proficiency on the TCAP in reading/language and mathematics at the same rate as students without

disabilities; and (b) no research had been conducted in the local school district to examine the impact of special education inclusion programs on students' reading/language and mathematics TCAP test scores. To help students with disabilities improve TCAP performance, the special education leaders at the study site school district encouraged the implementation of special education inclusion programs in the general education setting for students with mild to moderate learning disabilities. The school and district administrators did not require full inclusion for all students with disabilities, and resource programs continued to be part of the continuum of special education services. At the study site, the school employed two primary models for providing special education services for students with mild to moderate learning disabilities. The first model was the inclusion model, which involved collaboration between general and special education teachers in the general education setting to provide instruction, develop expectations, and provide an effective learning environment in the same setting with nondisabled students (Burstein et al., 2004; Carpenter & Dyal, 2007; Magiera & Zigmond, 2005; Murawski & Dieker, 2008; Sailor & Roger, 2005; Sileo & van Garderen, 2010; Voltz et al., 2005). The second model was the traditional resource model, which involved removing the student from the general education setting to the special education setting to receive instruction based on the same standards required for nondisabled students (Bouck, 2007b; Carpenter & Dyal, 2007).

I examined the impact of the special education inclusion program at one middle school within one school district in the state of Tennessee. The study involved Grade 6, 7,

and 8 students with mild to moderate disabilities, and the impact of the inclusion program was measured by reading/language and mathematics TCAP test scores.

Problem Statement

The problem addressed was that at the study site school district, which is located in middle Tennessee, the subgroup of students with disabilities in Grades 6, 7, and 8 was not reaching required standards on TCAP in reading/language and mathematics at the same rate as students without disabilities. No research had been conducted in the local school system to examine the impact of special education inclusion programs on the reading/language and mathematics TCAP test scores of students with mild to moderate disabilities.

Special education programs for students with disabilities were required to include access to the general education curriculum and were expected to provide challenging instruction to improve the performance of students with disabilities (IDEA, 2004; NCLB, 2002). Students with mild to moderate learning disabilities were expected to attain the same achievement standards as their nondisabled peers (Cortiella, 2007; Hardman & Dawson, 2008; IDEA, 2004; NCLB, 2002; Yell, Katsiyannas, & Shiner, 2006). The study site middle school provided instruction to meet the standard curriculum goals in both inclusion and resource settings. The addition of the inclusion program was the only change to the special education program at the study site school during the study period, and this study attempted to provide evidence of the impact of the inclusion program on TCAP test scores.

Although improving graduation rate is not specifically a function of the middle schools, at the study site the special education program was designed to provide the positive experience needed to help students with mild to moderate learning disabilities make successful transitions to work experiences or further education. Balfanz (2009) found that students who experience a history of failure and poor skill development at the middle school level have a higher probability of dropping out of high school. To help students make this important transition from middle school to high school, educational leaders at the study site focused efforts on a special education inclusion program that would challenge and support students with disabilities in the least restrictive environment to reach proficiency based on TCAP testing. Therefore, I investigated the impact of the special education inclusion program (the independent variable) on the reading/language and mathematics TCAP test scores of middle school students with mild to moderate learning disabilities (the dependent variable). The findings of this study provide research-based evidence for educators, school administrators, parents, and students to assist IEP teams in making informed decisions about special education placement for students with disabilities.

The Nature of the Study

A quantitative nonequivalent quasi-experimental design was used to investigate the impact of the special education inclusion program on TCAP reading/language and mathematic test scores for middle school students with mild to moderate learning disabilities. In this quasi-experimental design, the two cohorts were not randomly

assigned. Participants were selected based on their identification as students with disabilities who participated in TCAP achievement testing at the study site during 2004 through 2009 inclusively. The special education inclusion program was implemented in 2006-2007 to increase the number of students with mild to moderate learning disabilities who reached proficiency levels on TCAP achievement testing. The inclusion program was one special education service offered in addition to a traditional resource program for providing instruction for students with mild to moderate learning disabilities.

I worked with the IEP teams, students with learning disabilities, special and general education teachers, and parents at the study site beginning in 2003 when the study site school opened. I worked as a resource reading, language arts, and mathematics teacher when the resource model was the only option available for special education students with mild to moderate learning disabilities. After the addition of the inclusion program at the study site in 2006-2007, I became the mathematics teacher for the special education students in both the special education inclusion program and the resource program. Through my work as the department chair for special education and as a teacher at the study site, I became interested in researching whether or not inclusion was improving achievement test scores for students with disabilities.

Using SPSS version 17.0, an independent samples *t* test with a level of significance set at .05 was employed to measure the difference in the means for TCAP scores for reading/language and mathematics between two cohorts of students with disabilities. One cohort was comprised of 143 students tested in 2004, 2005, and 2006

before the implementation of the inclusion program. The second cohort was comprised of 167 students tested in 2007, 2008, and 2009 after the implementation of the inclusion program.

The population consisted of approximately 4,900 students at one middle school in Tennessee who participated in TCAP achievement testing from 2004 through 2009 inclusively. The participants in this study were two cohorts of students in Grades 6, 7, and 8 who participated in TCAP testing during the spring of each academic year in reading/language and mathematics. The reading/language and mathematics TCAP test scores were selected because the special education inclusion program was implemented in the school for the subjects of reading, language arts, and mathematics. TCAP test scores in reading/language and mathematics were collected for 310 students with disabilities who were in Grades 6, 7, and 8 between the academic years 2003-2004 and 2008-2009 inclusively. The first cohort was the control group comprised of 143 students with disabilities in Grades 6, 7, and 8 during the academic years 2003-2004, 2004-2005, and 2005-2006 before the implementation of the inclusion program. The second cohort was the experimental group comprised of approximately 167 students with disabilities in Grades 6, 7, and 8 during the academic years 2006-2007, 2007-2008, and 2008-2009 after the implementation of the inclusion program.

A *t* test was used to test the hypotheses and determine significant differences in the means between the two cohorts in reading/language and between the two cohorts in mathematics as measured quantitatively by TCAP testing with a confidence level at 95%.

Archived data were collected for the reading/language and mathematics TCAP subtest scores of the study school from the Tennessee Department of Education for 2004, 2005, 2006, 2007, 2008, and 2009.

The quasi-experimental quantitative method was chosen rather than the qualitative method because of the quantitative nature of the TCAP test scores for reading/language and mathematics. I did not focus on the interaction between the two cohorts nor did I examine the instructional practices of the teachers that may have had an impact on the TCAP scores. I ensured that all data entries and analyses were accurate and all researcher biases were nullified. Data were archived and were made available to me from the local school district's testing office after approval was granted by the IRB at Walden University. I discuss in more detail the nature of the study in section 3. I have formulated the following research questions to guide this research.

Research Questions and Hypotheses

Research Question 1: What is the impact of the special education inclusion program designed for middle school students with mild to moderate learning disabilities in Grades 6, 7, and 8 on their academic proficiency in reading/language as measured by TCAP state achievement test scores?

$H_0$1: There is no impact of the special education inclusion program designed for middle school students with mild to moderate learning disabilities in Grades 6, 7, and 8 on their academic proficiency in reading/language as measured by TCAP state achievement test scores at a 95% confidence level.

$H_1$1: There is an impact of the special education inclusion program designed for middle school students with mild to moderate learning disabilities in Grades 6, 7, and 8 on their academic proficiency in reading/language as measured by TCAP state achievement test scores at a 95% confidence level.

Research Question 2: What is the impact of the special education inclusion program designed for middle school students with mild to moderate learning disabilities in Grades 6, 7, and 8 on their academic proficiency in mathematics as measured by TCAP state achievement test scores?

$H_0$2: There is no impact of the special education inclusion program designed for middle school students with mild to moderate learning disabilities in Grades 6, 7, and 8 on their academic proficiency in mathematics as measured by TCAP state achievement test scores at a 95% confidence level.

$H_1$2: There is an impact of the special education inclusion program designed for middle school students with mild to moderate learning disabilities in Grades 6, 7, and 8 on their academic proficiency in mathematics as measured by TCAP state achievement test scores at a 95% confidence level.

Purpose of the Study

The purpose of this study was to examine if the implementation of a special education inclusion program for middle school students with mild to moderate learning disabilities improved TCAP test scores for reading/language and mathematics. Tennessee middle school students with mild to moderate learning disabilities had not been passing

the reading/language and mathematics portions of the TCAP at a comparable rate to their nondisabled peers. Local school systems needed to implement programs to enable more students with disabilities to demonstrate proficiency on the TCAP state achievement test according to the requirements of NCLB.

The intent of this study was to examine if significant differences exist between the mean test scores for a cohort of Grade 6, 7, and 8 students with disabilities taught in academic years 2003-2004, 2004-2005, and 2005-2006 prior to the implementation of the inclusion program and a cohort of Grade 6, 7, and 8 students with disabilities taught in academic years 2006-2007, 2007-2008, 2008-2009 after the implementation of the special education inclusion program at a 95% confidence level.

Theoretical Framework

The theoretical framework for this study is based on Vygotsky's social development theory. Vygotsky (1962) proposed that learning takes place through social interaction and engagement with the environment, and concepts "evolve with the aid of strenuous mental activity" (p. 82) from the learner. Language and speech are both a means of communication and a means of creating meaning (Vygotsky, 1962). In the development of skills and knowledge, the difference between the learner's "mental age and the level he reaches in solving problems with assistance indicates the zone of his proximal development" (Vygotsky, p. 103). For the purpose of this study, Vygotsky's theory applies, because "with assistance every child can do more that he can by himself – though only within the limits set by the state of his development" (p. 103). Therefore, a

student's success in the inclusion or resource program relates to the development of prior skills and knowledge of the participants. This idea has been applied to the study site for classroom assessment and instruction. The students in the inclusion setting benefit from the support provided in the general education setting when their skills are only moderately below the skills of the nondisabled learners. Vygotsky's (1962) theory relates to the present study because the social development theory can be applied to expectations that a student's involvement in the inclusion program has an impact on TCAP test scores.

Collaboration between peers and between student and teacher leads to the construction of knowledge "through critical investigation, reflective processes, analysis, interpretation and reorganization of knowledge, in areas that have meaning to learners" (Carnell, 2005, p. 273). The special education setting is still necessary for some students because when the student's academic and communication skills are far below the level of peers, the general education setting's demands would exceed the limitations of the student's development (Vygotsky, 1962). In the separate small-group setting, peers are able to support each other because their skill levels are more closely matched (Hochschild & Scovronick, 2003).

Vygotsky's theory applies to the inclusion and resource programs implemented at the study site. A structured approach is needed to breach the distance "between a learner's actual and potential level, what they now know and what they can be brought to know" (Gulney & O'Brien, 2001, p. 117). Inclusion and resource are each valid placement decisions based on the individual student's needs; therefore, a full continuum

of services needs to be available to place students in the environment where learning is challenging yet attainable (Berry, 2006). Students have differing needs and will learn more productively in the setting that provides the necessary support and appropriate challenges based on their individual needs for social interaction and engagement with the environment (Vygotsky, 1962). Special education placement for students with disabilities begins in the general education setting, because these challenges are more likely to be found in the inclusion program in the general education setting.

> If the environment presents no such tasks [a problem that demands the formation of concepts] to the adolescent, makes no new demands on him, and does not stimulate his intellect by providing a sequence of new goals, his thinking fails to reach the highest stages, or reaches them with great delay. (Vygotsky, 1962, p. 58)

The inclusion setting is, for many students with disabilities, the instructional setting that provides both a challenging and a supported academic environment.

Operational Definitions

For the purpose of this study, associated terms and concepts are defined as follows:

Accommodations: Accommodations are "tools and procedures that provide equal access to instruction and assessment for students with disabilities" (Cortiella, 2005, p. 2). Accommodations might include differences in presentation, response, timing and

scheduling, and setting to "lessen the effect of a student's disability; they are not intended to reduce learning expectations" (Cortiella, 2005, p. 2).

Collaboration: Collaboration refers to interactions involving individuals with equal standing. In the school setting the individuals involved may include educators, administrators, parents, and the student. Collaboration in the school setting may take many forms including coteaching, planning for accommodations and modifications based on individual needs, and providing supports not limited to the placement setting (Paulsen, 2008).

Coteaching: Coteaching is "designed to address the needs for students in an inclusive classroom by having a general education teacher and a special service provider teach together in the same classroom" (Murawski & Dieker, 2008, p. 40).

Inclusion: Inclusion means providing for the instruction of students with disabilities in the general education setting with whatever supports are necessary for student success including accommodations to instruction and assessment or modifications to the curricula and learning expectations (Burstein et al., 2004; Fahsl, 2007; Janney & Snell, 2006; Sailor & Roger, 2005). For the school involved in this study, inclusion means a general education class with a special education teacher or paraprofessional working with a general education teacher to support all students as needed. Inclusion refers to coteaching between a general educator and a special educator in the general education setting or a paraprofessional providing direct support to students in the general education setting.

Individualized Education Program (IEP): The IEP is a written statement for each student with an identified disability and includes: a statement of the present levels of performance, a statement of measureable annual goals and how progress will be measured, specific educational services including the extent of the student's participation in the regular educational program, the projected term of the IEP, and plans for evaluating the IEP at least annually (IDEA, 2004).

Least Restrictive Environment: "To the maximum extent appropriate, children with disabilities, including children in public or private institutions or other care facilities, are educated with children who are not disabled" (IDEA, 2004, Section 612a[5]).

Middle School: For the study site, the middle school is for students enrolled in Grades 6, 7, and 8. The middle school involved in the research, like all middle schools throughout the study site school system, utilizes a minischool concept. In that concept, students are assigned to a team of three to five general education teachers with support teachers in related arts and special education. The minischool concept fosters a sense of community among the students, between students and teachers, and among the staff members involved (Bratton, n.d.).

Mild to Moderate Learning Disabilities: According to the Tennessee Teacher Licensure Standards (2002), students with mild to moderate disabilities "can participate in the regular curriculum with appropriate adaptations and support" (p. 26). For the purpose of this study, the disabilities of students involved in this research include specific learning disability, other health impairments (typically ADD), language impairments, and

other disabilities that primarily affect the student's ability to learn basic reading, language, and/or math skills.

Modifications: Modifications are alterations and involve "changing, lowering, or reducing learning expectations" (Cortiella, 2005, p. 2). Modifications separate students from goals they are not expected to attain and can increase the achievement gap (Cortiella, 2007).

Resource: Resource is a program of instruction in a special education setting where students with mild to moderate disabilities receive instruction from a special education teacher in a small group separated from the general education setting (Hochschild & Scovronick, 2003). At the study site, resource is offered for reading, language arts, and mathematics instruction, and refers to pullout classes in the special education setting.

Assumptions, Limitations, Scope, and Delimitations

I assumed that the students with disabilities included in this study had current eligibility statements and current IEPs at the time of the TCAP assessment. Another assumption was that the participants were placed appropriately in special education programs based on their individual needs and were receiving the services listed in their IEPs with the accommodations and supports as prescribed.

I anticipated that the students at the participating school received higher TCAP scores after the implementation of the special education inclusion program where the same teachers taught the two cohorts of Grade 6, 7, and 8 students in reading, language

arts, and mathematics. I assumed that other special education inclusion programs were not implemented simultaneously with the special education inclusion program, so the impact on the test scores would not be attributed to any other programs.

A limitation for the study was the nonrandom selection process for this convenience sample, which decreased the generalizability of the results (Creswell, 2003). Other schools may not be able to apply the findings of this study directly to their schools because of differences in implementation of special education programs. The selection process for the placement of students in special education inclusion programs differs from school to school; therefore, the results may not be applicable to all school programs.

The findings for this study were confined to the outcomes for these particular groups of students at this one middle school within one school district. Not all of the students involved would have been continuously enrolled at the participating school for a full school year. The students included in any given year would have been in special education classes at their home school; however, they may or may not have been in the same type of resource or inclusion classes.

An established boundary for this study is that TCAP scores are limited to the data collection timeframe and location. I collected the reading/language and mathematics TCAP test scores of Grade 6, 7, and 8 participants enrolled at the time of the state achievement testing for 2004, 2005, 2006, 2007, 2008, and 2009 at a suburban middle school in Tennessee. I acknowledge that the findings may apply directly only to the study site school districts' local problem.

Significance of the Study

This study addressed the impact of an inclusion program on TCAP reading/language and mathematics test scores for students with disabilities at one middle school in Tennessee. Educational stakeholders at the study site can use the findings of this study to improve efforts to prepare special education students to pass TCAP testing. School and district administrators at the study site can use the findings of this study to determine whether to expand or continue special education inclusion programs.

The findings of this study might assist district and school administrators in designing effective special education inclusion programs. IEP teams, made up of educators, parents, and students, can use these findings to assist in making placement decisions for students with disabilities. The findings of this research were shared with the local school system to encourage further study for a system-wide approach to special education inclusion programs to improve TCAP test scores for students with mild to moderate learning disabilities.

Professional Application

I have focused on providing special education teachers with an understanding of special education inclusion programs that may improve TCAP test scores for students with mild to moderate learning disabilities. The findings of this study demonstrate the impact of placing students in special education inclusion programs. Although the work involved can be daunting for all stakeholders, special education inclusion programs may assist many students with disabilities to increase their performance on TCAP testing.

Positive Social Change

IEP teams made up of special and general education teachers, school administrators, parents, and students struggle with the placement of middle school students with disabilities in programs to support the acquisition of the skills students need to prepare for high school. School district administrators establish research-based policies for special education inclusion programs to improve the educational experiences of students with disabilities. The findings of this study provide educators with empirical evidence regarding the impact of special education inclusion on the reading/language and mathematics TCAP test scores of middle school students with mild to moderate learning disabilities. Students with disabilities who experience success in positive middle school environments are more likely to graduate from high school and become productive members of their communities (Balfanz, 2009).

Summary

NCLB included students with disabilities as one of the subgroups for assessing AYP (NCLB, 2002; Yell & Drasgow, 2005), and IDEA (2004) called for higher expectations and access to the general education curriculum in the regular classroom for students with disabilities. Will (1986) addressed the deficiencies of the special education pull-out model that developed following the passage of EHA in 1975, and urged increased cooperation between regular and special education stakeholders. Special education inclusion programs address each of these issues by providing increased access

to the general education curriculum for students with disabilities with the supportive measures needed to master required standards.

The literature review revealed an increased focus on special education inclusion programs (Fahsl, 2007; Hochschild & Scovronick, 2003; McCleskey et al., 2004; Rice, 2005; Sailor & Roger, 2005). Clearly, legislation mandated accessibility to the general education curriculum and the least restrictive environment (IDEA, 2004). Legislation also required that educators hold students with disabilities to the same standards as nondisabled students (IDEA, 2004; Yell & Drasgow, 2005). Inclusion was one response to NCLB and IDEA requirements; however, resource services in the special education setting were also necessary to preserve the continuum of services available for meeting the individual needs of students with disabilities in the least restrictive environment. Additional research was needed to guide IEP teams as the members decide which setting can be expected to yield the best outcome for students with disabilities in the least restrictive environment (Bouck, 2007b; Carpenter & Dyal, 2007; Gordon, 2006; Hochschild & Scovronick, 2003; Zigmond, 2003).

Vygotsky's social development theory supports this study because the interaction of students with disabilities and nondisabled peers is a major factor in providing instruction in the general education setting (Berry, 2006). Peer assistance is more effective with peers whose skills and knowledge are within reach of the learner (Berry, 2006). Students learn by interacting with their environment with the assistance of a guide who can be a teacher, parent, or a more capable peer (Atherton, 2005; Vygotsky, 1962).

Students thrive when the learning situation is demanding; however, the achievement goal must be within the student's zone of proximal development (Vygotsky, 1962).

Researchers examined the performance of students with disabilities in the general education setting; although, the findings reported in the literature were inconsistent (Fore et al., 2008; Hochschild & Scovronick, 2003; Rea et al., 2002). The findings of this study contributed to the existing research by providing data regarding the impact of a special education inclusion program on reading/language and mathematics TCAP test scores for middle school students with mild to moderate learning disabilities.

In section 2, the literature review, I focus on the importance of a continuum of special education services, current instructional practices designed to provide access to the general education curriculum, and achievement accountability for students with mild to moderate disabilities. The literature review included the historical background and legal basis for inclusion and a discussion of the instructional models and strategies that are in use in inclusion classrooms. This research examined the impact of the special education inclusion program on reading/language and mathematics TCAP achievement test performance of students with mild to moderate disabilities. In section 3, I include a discussion of the research methodology including descriptions of the participants, the data collection process, and the analyses procedures. In section 4, I present the data with analyses addressing the outcomes relative to the research questions. In section 5, I focus on the interpretation of the data analysis with the conclusions and recommendations for action.

Section 2: Literature Review

Introduction

In this section, the literature review, I present research focusing on student achievement related to special education placement. The strengths and weaknesses of inclusion and resource are discussed to compare important factors of each instructional model related to how students with disabilities achieve in school to meet the demands of standards-based instruction. Collaboration and coteaching are examined to describe accommodations and modifications that are effective and how these efforts require a commitment from the school and education community. The primary focus is on how reforms in special education and general education affect student achievement for middle school students with mild to moderate learning disabilities.

Strategies for Literature Review

The strategy used for searching the literature involved using research databases and dissertations collections from the Walden Library including: ERIC: Educational Resources Information Center, Education Research Complete, Academic Search Complete, and ProQuest Dissertations and Theses. The research focused on the available literature between the years 2005 and 2010 using the following keywords and topics: *special education, general education, students with disabilities, academic achievement outcomes, inclusion, resource or pullout, collaboration and coteaching*, and *differentiated instruction*.

NCLB and IDEA

Special education services were federally mandated in the United States in 1975, which provides nearly 35 years of experience to guide educators to design and implement services for students with disabilities. Additionally, educators have past and current legislation to consider, including NCLB (2002) and IDEA (2004), as well as current research to make informed decisions about what services enable students with disabilities to demonstrate academic progress (Gordon, 2006). Specifically, legislation and court decisions require that students with disabilities have access to the general education curriculum (IDEA, 2004; Gordon, 2006).

A full continuum of special education services in both the general education setting and the special education setting is needed to meet that goal (Bouck, 2007b). IDEA supports the concept of the least restrictive environment and a full continuum of services to educate a student with a disability in "the setting that is most like the educational setting for their peers without disabilities" (Carpenter & Dyal, 2007, p. 347). According to Gordon (2006), the focus of IDEA should be on appropriate inclusion for students who would benefit from instruction in the general education classroom. Scholars found that both placement settings can be effective at improving student achievement depending on the needs of the student (Fore et al., 2008; Rollins, 2007). Students with disabilities are expected to meet the achievement goals set by NCLB. The inclusion classroom could be more effective with moderately learning disabled students than with

severely disabled students (Mackie, 2007). Rollins (2007) found benefits of inclusion on achievement; although, the self-concept of disabled students may suffer.

Continuum of Services

Inclusion and resource are two options IEP teams consider in what should be a full continuum of services available for students with disabilities. The intent of educational systems is to design programs that will meet the academic achievement needs of individual students (Gordon, 2006). In effective special education programs, students are not forced to fit into one program, because students with disabilities have a range of learning needs (Bouck, 2007b; Mackie, 2007). The push to more inclusive programs may take the special away from special education, because the intensive, individualized services can be lost (Morris & Mather, 2008). Services are still being provided in the special education setting for students with disabilities in many school districts in a resource special education setting for part of their school day (McCleskey et al., 2004; USDOE, 2009c). The resource setting has many supporters who feel that the needs of some students are difficult to address in the large-group general education setting due to cognitive abilities, severity of academic deficiencies, and/or behavior and motivation issues (Bouck, 2007b; Mackie, 2007). The benefit for students working in the special education setting may be the intensive small-group instruction (McCullough, 2008).The resource setting can be more suitable for students who are not meeting academic achievement goals in the general education setting even after direct support in an inclusion classroom (Fore et al., 2008).

IDEA (2004) requires providing instruction to students with disabilities in the general education curriculum until reasonable evidence that a student's needs cannot be met in that setting (IDEA, 2004). Johnson (2007) found that opportunities in the general education setting may improve achievement test scores for middle school students with disabilities. Jameson, McDonnell, Johnson, Riesen, and Polychronis (2007) found that instruction embedded in the general education classroom can be effectively provided by both special education teachers and support staff. Students in the inclusion setting have the advantage of interactions with more capable peers and may be more motivated in the general education setting (Burstein et al., 2004; Idol, 2006).

IEP teams must consider students as individuals and make decisions that address students' needs and goals regardless of location (Carpenter & Dyal, 2007; Zigmond, Kloo, & Volonino, 2009). Morris and Mather (2008) considered the location of services of less importance than the methods of instruction. In support for programs that meet the individual needs of students, Bouck (2007b) stated, "Although an inclusive society should be a goal, inclusiveness should be expanded to include the full continuum of services and the freedom of parents, students, and teachers to exercise the full continuum, which includes pullout programs" (p. 84).

Inclusion Program

This discussion of appropriate services begins with the merits of the inclusion approach because students with disabilities are first and foremost to be to be considered general education learners. With the increased accountability as measured by state

achievement testing for all students as required by recent legislation, students with disabilities are being educated in the general education setting in increasing numbers in many school systems (Gordon, 2006). Carpenter and Dyal (2007) stressed the instructional benefits for all students gained from integrating special education with general education. Nationwide between 1989 and 2007 the percent of students who spent 80% or more of the school day in general classes rose from 31.7% to 53.7% (USDOE, 2009c).

A 3-year project was conducted in California as nine schools in two school districts prepared and implemented school-wide change to a more inclusive structure (Burstein et al., 2004). During the course of the project all the involved schools became more inclusive in some way. Some of the services were restructured for more emphasis on inclusion including coteaching and the elimination of some special services. Other services were modified to include more students in the general education setting with support while continuing pullout classes as needed. Some special services were expanded to involve struggling students who did not have IEPs and to increase general education services for individuals with severe disabilities. The parents and educators involved were highly satisfied with the changes implemented; all stakeholders recognized the work required to get to this level of change and supported the need for continuing efforts to sustain the movement.

Inclusion is a service delivery option for students with disabilities at all levels, and this research focused on the needs and opportunities for students with mild to

moderate disabilities to demonstrate academic achievement progress. Inclusion involves placing students with disabilities in the general education setting with direct and indirect support from special education personnel with the goal of achieving the same educational standards as nondisabled students (Burstein et al., 2004; Doran, 2008). Inclusion is a model for change that demands commitment to provide instruction for all students (Villa & Thousand, 2005).

Educators, parents, and students are demonstrating more support for inclusive education in most situations (Faircloth, 2008; Landrum, 2008), and legislation supports the placement of students with disabilities in the general education setting. This setting can be appropriate to meet the needs of many students with disabilities with appropriate support from school administrators and teachers, as well as the parents and the students themselves (Sailor & Roger, 2005). In addition Ghandi (2007) found that participation in the inclusion classes does not have a detrimental effect on the nondisabled students in the class. General education teachers are also showing increased support for including students with disabilities, as long as teachers have the support and training to provide necessary accommodations to meet the special needs of the students (Faircloth, 2008). Rao (2009) described the collaborative and consultative roles needed by special education teachers to effectively utilize the "best practices necessary to differentiate instruction" (p.35). Teachers can effectively provide individualized adaptations to support learning for students with disabilities in the inclusive classroom (Janney & Snell, 2006).

More students are receiving special education services in the general education setting; however, educators hold a variety of positions on inclusion's purpose and suitability. McCleskey et al. (2004) conducted a study of the national trends in data collected by the Office of Special Educational Programs (OSEP) regarding educational environments in the United States for students age 6-17 between 1989 and 2000. The researchers found that "there is great variability across states in the extent to which students with LD [learning disabilities] are educated in GE [general education] settings" (p. 11). According to the research, during the 1990s only 15 states significantly increased the percentage of students receiving education for the majority of their school day in the general education setting. One major problem with researching data on inclusion is a lack of clear definitions and a lack of guidelines for the implementation of inclusion for special education. Legislation supports educating students with disabilities in the general education setting; although legislation only includes guidelines stating that students with disabilities have a place in the regular setting and should only be removed to a separate instructional setting when all other interventions have been tried (EHA, 1975; IDEA, 2004). No one model states how or when these services are delivered, and placement decisions must be made for each student based on individual needs.

Resource Program

IDEA and NCLB require that all students have access to the general curriculum, although not necessarily placement in the general education setting (Gordon, 2006). A standards-based instruction can be offered in the special education setting (Sailor &

Roger, 2005; Weishaar, 2008). Many stakeholders support offering resource instruction for some subjects in the special education setting as a primary service delivery for part of the school day for some students (Bouck, 2007b). Mackie (2007) found that middle school students with more severe learning disabilities had higher achievement in special education classrooms. Achievement outcomes can sometimes be higher for students in the special education setting than for students with similar disabilities in the general education setting (Fore et al., 2008). Kauffman et al. (2004) explained that one perhaps unintended consequence of the full inclusion movement has been a negative perception of special education. Expectations for students with disabilities in the general education setting are not demanding enough if the student with disabilities has accommodations that only serve to pretend that the student is achieving at the same level as a nondisabled student. This research suggests that the student with disabilities is viewed as capable of learning the same standards as typical learners when given adequate services that encourage effort and determination appropriate to their abilities. The vital consideration needs to be what services are needed to provide the necessary support to maximize the progress of the individual student.

Bouck (2007b) addressed the special needs for students with mild mental impairment who by the nature of their cognitive abilities have life expectations that differ from typical students and even other students with disabilities, such as specific learning disability or attention deficit disorder. Students with such cognitive delays have learning needs that may require a separate instructional environment.

Resource is as an appropriate placement for a part of the school day for some students, and resource pullout classes can be effective with many students with disabilities. In a study involving moderately disabled middle school students in resource and inclusion classes, Mackie (2007) found that the severity of the disability had an impact on predicting the relationship between achievement and educational setting. The findings of this study indicated that students with moderate learning disabilities performed better in inclusion classes while students with more severe disabilities were more successful in the special education pullout setting. This position was supported in a debate offered by Gordon (2006) stressing that services for students need to be appropriate to meet their individual needs.

Role of Collaboration

The effectiveness of special education services is a collaborative effort involving administrators, general and special educators, the students, and the parents. According to Zigmond (2003),

> No intervention in the research literature eliminated the impact of having a disability. That is, regardless of the place of the intervention, students with disabilities did not achieve even at the level of low-achieving nondisabled peers, and no model was effective for *all* students with disabilities. (p. 195)

According to federal public policy in the United States, students with disabilities should be more included than they are excluded (Hardman & Dawson, 2008). Increased collaboration among the educators, parents, and students can help meet a student's needs

in whatever setting is appropriate to the individual (Sailor & Roger, 2005). Researchers have studied collaboration extensively and clarify that educational collaboration requires preparation, commitment, and time to develop the trust and purpose needed for a true collaborative effort to meet the special needs of all students, not just those with disabilities (Paulsen, 2008). Collaboration is not just helpful for teachers working together in the inclusion class setting; the strategies applied and knowledge of the standards are also useful for teachers of students in the separate special class setting (Paulsen, 2008).

One factor that improved the effectiveness of collaboration is open communication: Special educators need to share information regarding students with disabilities, and general educators need to share information regarding the subject-area standards and skills (Murawski & Dieker, 2008). Carpenter & Dyal (2007) encouraged a school community emphasis on cooperation among all stakeholders to provide a full continuum of services to meet the individual needs of students with disabilities. Faircloth (2008) found that when teachers employed motivational strategies, students with disabilities were more willing to complete assignments. Magiera and Zigmond (2005) suggested that communication could improve collaboration between teachers, additionally more training and common planning time could enhance the experience.

In a study involving upper elementary teachers and students, Faircloth (2008) determined that teachers felt better prepared to motivate students with disabilities in the general education setting after participating in training with motivational intervention

strategies. Swindler (2007) found improved pre/posttest scores for high school algebra students in inclusion classes led by teachers who had received training in working with students with disabilities in the general education setting. The findings also showed that prepared teachers held more positive attitudes toward using inclusive strategies, such as cooperative activities and alternative assessments, with all students (Idol, 2006). Sze (2009) revealed that effective training led to improvements in attitude for preservice teachers regarding accepting students with disabilities. Berry (2010) interviewed and surveyed preservice and beginning teachers to understand what educators need regarding working with students with disabilities in the general education setting. The teachers involved agreed that general education teachers need information regarding disability categories and effective instructional strategies for working with students with disabilities. Inclusive practices benefit all students, both disabled and nondisabled learners, and the same collaborative effort is applicable to students in the resource setting, because students with mild to moderate learning disabilities are integrated into the general education setting for part of their school day.

Coteaching as an Inclusion Model

In the inclusion program at the study site, whenever possible, special education services were brought to the student rather than the student being removed to receive the service. In the inclusion setting one instructional model that gained support was the coteaching model. Coteaching can take many forms, but a broad definition involves a general educator and a special educator with equal standing working together to provide

instruction to students with disabilities in the general education setting (Bouck, 2007a). At the middle school level, the general educator typically brings strength in the academic content, and the special educator provides the expertise to address issues of students with many different learning needs (Carpenter & Dyal, 2007; Paulsen, 2008). Coteachers must be willing to build upon their strengths and compensate for weakness by working together (Murawski & Dieker, 2008). The two teachers must work to define their teaching roles, delineate and combine duties, and achieve balance and equity as educators (Murawski & Dieker, 2008). Murawski and Dieker (2008) listed strategies for an effective coteaching partnership including a willingness to collaborate, flexibility, communicating clearly, and establishing guidelines for sharing the class duties and responsibilities. One major factor is that each teacher needs to commit to make the time for regular planning sessions. In addition, Murawski and Dieker pointed out that proper identification of students whose needs can be met in the inclusive setting is crucial.

In a study in a middle school in the Midwest, Bouck (2007a) studied two teachers in a co-taught U.S. History classroom, a general educator and a special educator, to identify what coteaching looked like, what factors of coteaching were observed, and what this case of coteaching had to add to the literature. The results of the classroom observations and informal teacher interviews demonstrated that "coteaching was a highly complex relationship in which the teachers had to negotiate their roles" (Bouck, 2007a, p. 48). The teachers had to negotiate sharing the classroom space and the instructional duties as well as maneuver around their roles and responsibilities with the students. These

teachers learned that coteaching was an evolving relationship that relied on effective communication and extensive planning.

Student Achievement

The primary focus for an examination of special education services has to be whether those services are effective in increasing student performance. The reforms of the 1980s included a call for increased assessment of the effectiveness of instructional programs and strategies (Will, 1986). For many of the initial studies examining inclusion, the focus was the social, emotional, and motivational factors, but with the current attention on accountability due to NCLB and IDEA (Yell et al., 2006), more researchers were turning toward evaluating the effect of inclusion and special education on student achievement. Doran (2008) compared coteaching and small group instruction and found that coteaching was more effective. Johnson (2007) found a correlation between test scores and the percentage of time students received instruction with nondisabled peers.

Kauffman et al. (2004) stated both positive and negative effects of the push for full inclusion. The positive effects included the recognition that special educators need to hold students with disabilities to the same standards as nondisabled students. NCLB (2002) emphasized accountability based on current standards, and IDEA (2004) required justification for the decision of the IEP team to remove a student from the general education setting. These laws served to "overcome some of the unnecessary removal of students with disabilities from general education" (Kauffman et al., 2004, p. 616). Kauffman (2004) emphasized, "Students with disabilities do have specific shortcomings

and do need the services of specially trained professionals to achieve their potential" (p. 620). In the opinion of these researchers, the inclusion movement led to lowered expectations for students with disabilities rather than improved services to aid their achievement. Ironically, one of the main arguments that brought about the regular education initiative was the perception that special education programming had lowered expectations (Will, 1986).

Attempts to examine national trends for student achievement related to inclusion were met with similar obstacles. No stated definitions for what is required for an inclusion program (IDEA, 2004) were available. Many inconsistencies among states in implementing and assessing special education programs were found, especially with the accommodations provided for standardized testing (Cortiella, 2007). The National Assessment of Educational Progress (NAEP) reported scores for public school students, by status as students with disabilities; however, the reports did not indicate the number of hours of special service or whether the service was provided in the general education or special education setting (USDOE, 2010). The National Center for Education Statistics reported the percentage of students receiving education services for the disabled but only as a percent of the school day spent inside general classes (USDOE, 2009b). No reporting category for whether or not students were receiving special education services in the general education setting was noted.

The inconsistent application of accommodations for students with mild to moderate disabilities complicated the collection and presentation of standardized

achievement data and generated controversy over the use of those accommodations on standardized achievement testing (Fuchs, Fuchs, & Capizzi, 2005). Guidelines were available for the use of accommodations (Cortiella, 2005); however, states were free to determine which accommodations were allowed for selected assessments (Cortiella, 2007).

Literature Related to the Methods and Differing Methodologies

A review of current literature revealed inconsistent results for the effect of special education placement on achievement outcomes for students with mild to moderate learning disabilities. A limited number of research studies in the years from 2005 to 2010 were focused on the impact of inclusion on the academic achievement of students with disabilities. The literature review revealed a growing number of research studies focused on academic outcomes for middle school students with mild to moderate learning disabilities.

The historical focus on this topic had been on the perceptions of stakeholders regarding the benefits and deficits of inclusion. As legislative agendas emphasized achievement outcomes, more researchers examined the impact of inclusion on student achievement. In one of the earliest such studies, Rea et al. (2002) investigated the relationship between student achievement for inclusion and resource pullout for middle school students using quantitative and qualitative methods. Rea et al. studied achievement, behavior, and attendance and related factors for eighth graders at two middle schools. In this study, one middle school utilized an inclusive model, and the

other utilized the pullout model. The results of this study showed that the students in the inclusion program had higher achievement scores for language and mathematics on the Illinois Test of Basic Skills (ITBS) and earned comparable subtest scores for reading, writing, and math on this state proficiency test. The inclusion school students also earned higher course grades, had comparable rates of disciplinary action, and attended more days of school than counterparts in the resource-setting middle school.

According to current research, students with disabilities benefit from instruction in the general education setting due to the social learning situations that arise as proposed by Vygotsky (1962). In a study comparing research in mathematics education and special education journals, a sociocultural theory was more often the basis for articles in the mathematics education journals (Van Garderen, Scheuermann, Jackson, & Hampton, 2009). Other researchers have cited Vygotsky's sociocultural theory as a framework for research examining learning in the general education setting for learners of all abilities. Shamir (2007) conducted research in self-regulated learning related to peer learning situations. Carnell (2005) focused on communication and peer collaboration in an analysis of students' self-perception of learning. Scaffolding techniques are one of the modern concepts derived from the sociocultural theory (Vacca, 2008). Referring to the social context of the inclusion classroom, Berry (2006) stated, "Inclusion depends on classroom climate factors as well as effective instructional strategies" (p. 520).

In a quantitative study comparing two instructional methods, coteaching and small group instruction, Doran (2008) concluded that while students with disabilities in

the inclusion setting did not score as high as their nondisabled peers, students did score higher than their counterparts in pullout classes. This study examined the end-of-course-tests for high school students enrolled in geometry, biology, and American literature classes at four schools in one school system. Doran used Vygotsky's social learning theory as the theoretical foundation for his study to support the use of coteaching as a method for students with disabilities. According to Doran (2008), students with disabilities benefited from instruction in the general education classroom due to the support of the nondisabled students.

McCullough (2008) researched the resource setting and the inclusion setting in a quantitative correlation study using 5 years of pre and postinclusion achievement data for eighth graders at one school. The findings suggested that "the more inclusive setting was able to serve a variety of students with disabilities and do so at least as well as the resource setting perhaps even better" (McCullough, 2008, p. 48). The research findings showed that, for mathematics achievement, the inclusion students improved more than the resource pullout students, although admittedly not at the same rate as non-disabled peers. In this examination of the inclusion and resource settings, the researcher indicated, "The data further supported that the change in academic setting has caused the mean scores of SPED [special education] students at [this school] to improve over time" (McCullough, 2008, p. 47). These results were inconsistent year to year and illustrate that the effort needed to sustain the effectiveness of inclusion services requires a commitment

from educators, parents, and students including an inclusive school community, support from administrators, and cooperation between teachers.

In a quantitative study examining inclusive versus non-inclusive classroom placement for secondary content area classrooms, Fore et al. (2008) found, "with the exception of one comparison … no statistically significant differences in the academic performance of students with SLD (specific learning disabilities) for reading or math" (Fore et al., 2008, p. 64). In the review of the literature, studies were presented that demonstrated positive outcomes for both students in inclusive classrooms and students in resource classrooms. The researchers surmised several limitations that may have provided an explanation including the difficulties with defining the inclusion program and the disparity between the abilities of the students in the inclusion and resource groups.

According to Landrum (2008), who examined data covering a 3-year period to compare middle school students in the inclusion setting to middle school students in the resource setting using a mixed-methods approach, research revealed that students with disabilities earned higher achievement test scores when they were educated in the general education setting; however, students in the pullout classes had higher grades than students in the inclusion classes. In a similar study using a single-group interrupted time-series design, Johnson (2007) found a correlation between the amount of time middle school students with disabilities spent in the general education setting and their scores on the state achievement test. Additionally, Swindler (2007) used a qualitative collective

case study research design to examine the relationship between teacher training and student academic achievement. The results demonstrated that students in classes with trained teachers showed more improvement on academic assessments. Rollins (2007) employed quantitative methods in a study examining 6 weeks of data to compare the academic achievement and self-concept of two groups of students, one in an inclusion class and one in a resource class. The students in the inclusive setting had higher achievement test scores; however, students in the pullout setting had higher self-concept. The research showed that students benefited when they had a range of services available.

Summary

Services for students with disabilities have evolved during the history of education, especially since the legislative changes including NCLB (2002) and EHA (1975) now called IDEA (2004). The initial intent of the laws was to improve access for students with disabilities to the general education curriculum, and now students with mild to moderate disabilities are held accountable for achieving the same standards as their nondisabled peers. This research study is intended to identify differences in achievement scores for students with disabilities before and after the implementation of an inclusion program at a middle school in Tennessee. Through collaboration between general education and special education personnel, general education resources should be more accessible to help students with mild to moderate disabilities make appropriate academic progress.

Transition

In section 3, I provide a description of the research methodology including the research design with descriptions of the setting, participants, and the treatment. The instrumentation and materials are described along with the data collection procedures and analysis methods. The measures taken for the protection of the participants rights are summarized. The role of the researcher in the data collection and analysis is described.

Section 3: Research Method

Introduction

In this section, I include a description of the content and research methodology for this study. I describe the research design and approach, the setting and the participants, the treatment, the instrumentation and materials used in data collection, and the data analysis procedures.

The problem was that at the study site school district, located in Tennessee, the subgroup of students with disabilities in Grades 6, 7, and 8 was not reaching required standards on TCAP in reading/language and mathematics at the same rate as students without disabilities. No research had been conducted in the local school system to examine the impact of special education inclusion programs on students' reading/language and mathematics TCAP test scores. A review of the literature revealed conflicting findings regarding the effectiveness of special education inclusion programs for students with mild to moderate disabilities. For the study site, the impact of the inclusion program had not been fully examined.

The purpose of this study was to examine whether or not the implementation of a special education inclusion program for middle school students with mild to moderate learning disabilities improved reading/language and mathematics TCAP test scores. Tennessee middle school students with mild to moderate learning disabilities had not been passing the reading/language and mathematics portions of the TCAP at a comparable rate to their nondisabled peers. Local schools in this system needed to

implement programs to enable more students with disabilities to demonstrate proficiency on the TCAP state achievement test according to the requirements of NCLB. A special education inclusion program for students with mild to moderate disabilities was one response to this need.

I hypothesized that the implementation of the special education inclusion model would increase reading/language and mathematics TCAP test scores for the Grade 6, 7, and 8 students with mild to moderate disabilities taught after the implementation of the inclusion program. The basis for my hypotheses was that students in the special education inclusion program were more challenged to reach higher goals with support in the general education setting than they were in the special education resource program.

The study was conducted in one middle school in a suburban school district in Tennessee. The primary focus for the school district was ensuring that all subgroups, specifically the subgroup of students with disabilities, scored at Proficient or Advanced levels to meet NCLB requirements for AYP. Legislation in the United States at the time of the study required that 100% of students in all subgroups score at Proficient or Advanced levels by the 2013-2014 academic year; however, in the local school district, the subgroup of students with disabilities was not making sufficient progress toward that goal.

I felt the need to examine the reading/language and mathematics TCAP test scores for Grade 6, 7, and 8 students at one middle school because the special education inclusion program was implemented to improve the test scores for students with mild to

moderate learning disabilities in those subjects. The special education inclusion program was implemented in reading, language arts, and mathematics using a coteaching model, because the students with mild to moderate disabilities would benefit from the interaction with more capable peers and from the support of two educators. I felt this study was needed to examine whether or not the special education inclusion program increased TCAP scores for reading/language and mathematics.

Research Design

A quantitative nonequivalent quasi-experimental design was used to examine the impact of the special education inclusion program on the reading/language and mathematics TCAP test scores for middle school students with mild to moderate learning disabilities at a suburban middle school in Tennessee. According to Creswell (2003), "If the problem is identifying factors that influence an outcome, the utility of an intervention, or understanding the best predictors of outcomes, then a quantitative approach is best" (Creswell, 2003, p. 22). In order to answer the research questions for this study, I tested the hypotheses utilizing the quantitative research method described in this section. Because the participants were not randomly assigned to groups, the research design is considered quasi-experimental (Creswell, 2003). I employed a nonrandomized design, because random assignment would have denied students the services required by their IEPs.

A qualitative design was not selected, because I was not interested in research questions associated with the emergent and interpretive nature of qualitative inquiry

(Creswell, 2007). Qualitative research is generally applied to understanding social interactions by interviewing or observing participants to collect data in the form of words, images, or objects (Creswell, 2007). Additionally, I did not select a qualitative design, because the role of the researcher in a qualitative study would have been complicated by the professional relationship between my students and me. For this quantitative study the archived data was not affected by my role as the researcher.

A quantitative approach was used for the study, because the data that was collected involved numerical achievement test scores. Qualitative approaches are suitable for open-ended questions, observations, interviews, and other research that can be interpreted from the perspective of the researcher (Creswell, 2003). Achievement test scores for this study were analyzed for numerical differences in mean test scores for the cohort taught before implementation of the special education inclusion program and the cohort taught after the implementation of the special education inclusion program.

Qualitative research is filtered through the lens of the researcher to establish a fundamental interpretation of the data (Creswell, 2003). The quantitative approach was needed, so I could examine TCAP achievement test scores to employ numerical data to identify and present the findings. Using a quantitative research design, I was able to examine the impact of the inclusion program on the reading/language and mathematics TCAP achievement test scores of Grade 6, 7, and 8 students with mild to moderate learning disabilities taught after the implementation of the inclusion program. The independent samples *t* test is an appropriate statistical tool because this study involves

two separate samples, the two cohorts of Grade 6, 7, and 8 students with disabilities (Gravetter & Wallnau, 2008).

After I received IRB approval (Walden IRB number: #12-15-10-0365971), I collected archived reading/language and mathematics TCAP achievement test scores from the local school district. The TCAP scores were analyzed for statistical differences in the means of the scores for the two cohorts of students with disabilities in Grades 6, 7, and 8. I approached this research from a postpositivist assumption described by Creswell (2003) as arising from "a need to examine causes that influence outcomes" (Creswell, 2003, p. 7). In this study, empirical evidence was used to identify differences in the means of TCAP scores for the two cohorts to support or refute the premise that inclusion had an impact on TCAP reading/language and mathematics test scores for the middle school students with mild to moderate learning disabilities at the study site.

Research Questions and Hypotheses

Research Question 1: What is the impact of the special education inclusion program designed for middle school students with mild to moderate learning disabilities in Grades 6, 7, and 8 on their academic proficiency in reading/language as measured by TCAP state achievement test scores?

$H_0$1: There is no impact of the special education inclusion program designed for middle school students with mild to moderate learning disabilities in Grades 6, 7, and 8 on their academic proficiency in reading/language as measured by TCAP state achievement test scores at a 95% confidence level.

$H_1$1: There is an impact of the special education inclusion program designed for middle school students with mild to moderate learning disabilities in Grades 6, 7, and 8 on their academic proficiency in reading/language as measured by TCAP state achievement test scores at a 95% confidence level.

Research Question 2: What is the impact of the special education inclusion program designed for middle school students with mild to moderate learning disabilities in Grades 6, 7, and 8 on their academic proficiency in mathematics as measured TCAP state achievement test scores?

$H_0$2: There is no impact of the special education inclusion program designed for middle school students with mild to moderate learning disabilities in Grades 6, 7, and 8 on their academic proficiency in mathematics as measured by TCAP state achievement test scores at a 95% confidence level.

$H_1$2: There is an impact of the special education inclusion program designed for middle school students with mild to moderate learning disabilities in Grades 6, 7, and 8 on their academic proficiency in mathematics as measured by TCAP state achievement test scores at a 95% confidence level.

Population and Sample

The population for this study was comprised of approximately 4,900 middle school students in Grades 6, 7, and 8 in a suburban school in Tennessee tested between 2004 and 2009 inclusively. In the spring of 2009, the school had 771 students in Grades 6, 7, and 8 including 64 students identified with mild to moderate learning disabilities.

The total population of the school for 2009 was comprised of 613 White, not Hispanic students, 19 Hispanic students, 99 Black, not Hispanic students, 38 Asian/Pacific Islander students, and 2 Native American/Alaska Native students. The population included 386 female students and 385 male students. In Table 1, I present how these student ratios have remained relatively consistent for the academic years included in this study, 2003-2004 through 2008-2009.

Table 1

School Student Populations 2004-2009

Year	2004	2005	2006	2007	2008	2009
White	561	630	704	805	735	632
African American	69	84	98	116	104	103
Hispanic	12	19	18	29	34	24
Asian/Pacific Islander	21	15	26	40	53	39
Native American	2	3	1	2	2	2
Total	659	751	847	880	925	769

According to the Tennessee Department of Education 2009 Report Card (TDOE, 2010), students with disabilities at the school met NCLB AYP percentages for reading/ language and mathematics proficiency on TCAP. Up to the academic year 2008-2009, Tennessee schools were required to have students in all subgroups score in the Proficient or Advanced categories at a rate of 89% for reading/language and 86% for mathematics to meet AYP for NCLB (TDOE, 2009b). At the study site, the students with disabilities

performed at the Proficient or Advanced levels at a rate of 95% in reading/language and 91% in mathematics for 2009 (TDOE: Report Card, 2009). Statewide in Kindergarten through Grade 8 the students with disabilities subgroup performed at or above the Proficient level on the 2009 TCAP at a rate of 73% in reading/language and 68% in mathematics (TDOE: Report Card, 2009). Students with disabilities at the state, local, and school level were not achieving at or above the Proficient level at the same rate as their nondisabled peers. Students with disabilities at the study site school were making progress, although not at the same pace as the nondisabled students.

Table 2

Percentages Of All Students Achieving Proficient Or Advanced On TCAP

	Reading/Language Arts		Mathematics	
	State	School	State	School
2004		92		95
2005	91	97	88	99
2006	88	94	89	96
2007	90	98	90	98
2008	92	99	91	98
2009	91	99	91	98

Table 3

Percentages Of Students With Disabilities Achieving Proficient Or Advanced On TCAP

	Reading/Language Arts		Mathematics	
	State	School	State	School
2004		58		74
2005	69	75	65	94
2006	64	76	58	74
2007	70	78	61	84
2008	74	92	68	89
2009	73	95	68	91

The sample for this study included 310 students with disabilities who participated in reading/language and mathematics TCAP testing at one middle school in 2004, 2005, 2006, 2007, 2008, and 2009. The students were selected using purposeful convenience sampling because random assignment would deny students the services required by their IEPs. The sample size was limited to the number of students with disabilities who participated in the TCAP testing for the years under study. TCAP scores were collected for students who (a) were identified as a student with a disability, (b) participated in the TCAP assessment for the years under study, and (c) were enrolled and had active IEPs at the study site at the time of the TCAP assessment for each of the identified years.

At the study site for 2009, 64 students with disabilities participated in TCAP testing. The sample of students with disabilities for 2009 included 43 males and 21 females. The sample was comprised of 54 White, not Hispanic students, 5 Black, not Hispanic students, 4 Hispanic students, and 1 Asian/Pacific Islander student. Ninety-five percent of the sample of students with disabilities received fewer than 22 hours of special education services each week. These ratios remained relatively consistent for the academic years included in this study, 2003-2004 through 2008-2009.

Treatment

The inclusion program treatment involved two cohorts of Grade 6, 7, and 8 students at one suburban middle school in Tennessee. One cohort was taught by the same general and special education teachers in the academic years 2003-2004, 2004-2005, and 2005-2006 prior to the implementation of the special education inclusion program, and the second cohort of students was taught by the same general and special education teachers in academic years 2006-2007, 2007-2008, and 2008-2009 after the implementation of the inclusion program.

The participating students received special education services in the general and/or special education setting. In the general education setting, students received daily instruction in the special education inclusion program in reading, language arts, and mathematics in classes that involved 20 to 25 nondisabled students and 5 to 10 students who had mild to moderate learning disabilities. General and special educators cotaught, collaborated, and provided supports to students within the general classroom setting. In

reading and language arts classes the special educator was a certified teacher highly qualified in reading/language or a paraprofessional. In mathematics classes the special educator was a certified special educator highly qualified in mathematics. In the inclusion program, students with disabilities received instruction based on state standards in the general education setting. The special educator focused attention on the students with disabilities in the classroom, and at the same time, provided assistance equitably to all students in the class. In this way, the students with disabilities were not separated from peers, and all students were able to benefit from the attention of two teachers. The students with disabilities who were in the class were able to benefit from the challenge of working with more capable peers in a learning situation in which one learner strengthens and supported another learner to stretch to reach new levels as proposed by Vygotsky (Jörg, 2009).

In the special education setting, the resource pullout program was utilized for students based on their needs for more support. In the resource program, students received daily instruction in a special education class taught by a special educator working with 5 to 15 students. Support from paraprofessionals was available as needed. All students in the classroom had an identified disability. Instruction was presented in a combination of individual, small group, and whole class environments. The curriculum was derived from the same standards required for all students; however, the format of the class allowed the teacher to introduce skills more slowly and provide intensive guided practice. The ability and performance levels of the students varied greatly; although, their

learning needs were within reach of one another as described by the zone of proximal development, which is based on Vygotsky's social development theory and explains that assistance is more effective when it is at a level just above the level the individual may achieve alone (Jörg, 2009).

The special education inclusion program was implemented in the 2006-2007 academic year with inclusion classes available for reading, language arts, and mathematics for Grades 6, 7, and 8. The inclusion program instructors remained constant for reading, language arts, and mathematics over the academic years included in this study. The only change to the special education program at the study site was the addition of the inclusion program. The IEP teams at this school placed students in the least restrictive environment in inclusion or resource classes according to individual needs. The decision to place students in either inclusion or resource was primarily determined by reading ability; although, motivation and family support were considered as well. Students were placed in inclusion for a combination of reading, language arts, and mathematics. Students who required intensive instruction were placed in resource for a combination of the same subjects. Some students received all their special education services for reading, language arts, and mathematics in the inclusion program in the general education setting. Other students received all their special education services for reading, language arts, and mathematics in the resource program in the special education setting. Some students received a combination of services for reading, language arts, and mathematics in either the inclusion or resource programs. Students were also grouped as

needed for support from paraprofessionals in the general education setting for science and social studies. By examining the differences in the test scores for the two cohort groups, the impact of the inclusion program for students with mild to moderate learning disabilities at the participating middle school can be determined.

Instrumentation and Materials

The TCAP scale score data for reading/language and mathematics was organized by subject area for the two cohorts. Cohort 1 was comprised of scores from Grade 6, 7, and 8 students with disabilities tested in 2004, 2005, and 2006 prior to the implementation of the inclusion program. Cohort 2 was comprised of scores from Grade 6, 7, and 8 students with disabilities tested in 2007, 2008, and 2009 after the implementation of the inclusion program. Data were arranged separately for reading/language subtests and mathematics subtests. This organization allowed the scores to be analyzed for reading/language separately from the scores for mathematics. Scores were also organized by grade level so the analysis could include differences between the grade levels.

Although the state only required assessment beginning in third grade, the TCAP test was given annually to all students in the study site school district beginning in second grade and continuing through eighth grade. Students participated in this assessment over a 4-day period in the spring of every year. Students with disabilities had special and allowable accommodations as directed by their IEPs. Allowable accommodations involve adaptations allowed for any student including testing in a separate location and

testing in a small group setting. Special accommodations were only available to students who had an IEP or a 504 accommodation plan and included having the test read aloud and extended time on subtests in addition to the allowable accommodations (TDOE, 2008).

Validity and Reliability

Validity is established to report whether an instrument measures the content as intended (Creswell, 2003).

> Content validity can be supported by consistent adherence to the test blueprints. This can be done using test blueprints that closely, if not exactly, reflect what Tennessee students will know and be able to do in the content area being assessed and using items that measure student performance on the Tennessee curriculum standards. (TDOE, 2009c, p. 9)

TCAP items were aligned with the Tennessee academic standards and demonstrated content validity. Construct validity for TCAP items was assessed using factor analysis to demonstrate that the items represented the stated instructional objectives. Assessment should produce consistent measurements or reliability (Gravetter & Wallnau, 2008). The test reliability measures for the 2009 TCAP CRTs were all 0.91 or greater indicating consistency of performance. These measures were calculated using classical test statistics to evaluate internal consistency and test reliability. Additionally, the items were designed in a range of difficulties to ensure that the tests "measure well throughout the range of performance shown by examinees in each grade level" (TDOE, 2009c, p. 17).

Data Collection and Analysis

Descriptive measures, measures of central tendency, and measures of variance for the mean test scores were recorded and summarized in tables to begin to identify significant patterns in results (Gravetter & Wallnau, 2008). According to Gravetter and Wallnau (2008), "The power of a hypothesis test is defined as the probability that the test will correctly reject the null hypothesis" (p. 225). The *t*-test statistic was used to reject or fail to reject the null hypothesis and determine if the statistical differences in the means were more than would be expected by chance including the *t*-test result, probability, and variance of the means. The *t* test is an important tool to assist in avoiding committing a Type I error (rejecting a null hypothesis that is actually true) or a Type II error (failing to reject a null hypothesis that is actually false; Gravetter & Wallnau, 2008).

The independent variable was the special education inclusion program. The dependent variable was the reading/language and mathematics TCAP test scores of middle school students with mild to moderate learning disabilities. I collected the reading/language and mathematics TCAP scale scores for the students with disabilities in Grades 6, 7, and 8 at one middle school in Tennessee for the years 2004, 2005, 2006, 2007, 2008, and 2009. Scores for the students with disabilities who participated in the reading/language and mathematics TCAP testing were disaggregated by subject, grade level, and assessment year.

An independent samples *t* test was employed to determine the differences in TCAP scores for reading/language and mathematics between the two cohorts of students

with disabilities. I chose an independent *t* test for data analysis to measure the variance in TCAP scores between the two cohorts of students with disabilities. The level of significance was set at .05, and a standard *t*-value table was used to determine if the independent samples *t*-value exceeded the critical *t*-value, indicating that a result was considered statistically significant.

Participants' Rights

The study site school district officials supplied the archived TCAP scores with no identifying information about the participants. I was a special education teacher at the research site; however, the scores collected were from past school years, so my role did not have any effect on the scores from the participants. The data will be kept in a secure location in my home office accessible only by me. The data will be maintained for 5 years following the completion of the study.

Role of the Researcher

At the time of the research study, I was special education department chair and a special education teacher at the study site, where I taught mathematics to students with mild to moderate disabilities in the inclusion and resource programs. Given that the data were from archived databases and teachers were not asked to provide me with any data, researcher biases were nullified.

At the time of the research study, I had worked as an educator for at least 27 years, teaching reading, language arts, and math to students in kindergarten through eighth grade. The last 12 years I taught students in a middle grades special education

inclusion and resource setting. Prior to that, I taught Grades 5 through 8 in elementary school special education, Grade 5 in general education, and kindergarten through Grade 8 in special education. I have always considered myself an advocate for students with disabilities including a strong desire to encourage the involvement of students with disabilities in the general curriculum. My role for this study was to collect archived data, which was not affected by my role as a teacher at the study site. There are no stated requirements from the local school district for reporting research findings; although, teachers are encouraged to share their expertise through district and school inservice training sessions. I had previously led several inservice training sessions in my school to provide training to general education teachers working with students with disabilities. Research findings were shared with my school faculty and teachers in the school district in similar inservice training opportunities.

Summary

The focus of this study was to examine if the implementation of the special education inclusion program for middle school students with mild to moderate learning disabilities impacted TCAP test scores for reading/language and mathematics. Tennessee middle school students with mild to moderate learning disabilities had not been passing the reading/language and mathematics portions of the TCAP at a comparable rate to their nondisabled peers. Local school systems needed to implement programs to enable more students with disabilities to demonstrate proficiency on the TCAP state achievement test according to the requirements of NCLB.

The purpose of this study was to examine if significant differences exist between the mean test scores for a cohort of Grade 6, 7, and 8 students with disabilities taught in academic years 2003-2004, 2004-2005, and 2005-2006 prior to the implementation of the inclusion program and a cohort of Grade 6, 7, and 8 students with disabilities taught in academic years 2006-2007, 2007-2008, 2008-2009 after the implementation of the special education inclusion program. The inclusion program was implemented in the 2006-2007 academic year with coteaching classes for reading, language arts, and mathematics. At the study site, students were required to take the TCAP achievement test in the spring of every academic year.

The findings of this study addressed the impact of the inclusion program on the reading/language and mathematics TCAP test scores at one middle school in Tennessee. This quantitative nonequivalent quasi-experimental study used a *t* test to assess if an inclusion program for special education instruction in language arts, reading, and mathematics for students with mild to moderate learning disabilities had an impact on student achievement based on TCAP testing. This study answered the proposed research questions by testing hypotheses. Each of the hypotheses being tested in this study focused on the impact of the special education inclusion program (the independent variable) on the reading/language and mathematics TCAP test scores of middle school students with mild to moderate learning disabilities (the dependent variable).

The findings of this study might be useful to schools as they develop special education programs to meet the individual needs for middle school students with mild to

moderate learning disabilities to assist IEP teams to place students in the appropriate programs. The inclusion program might enable more students with disabilities to improve their state achievement test scores.

In section 4, I present the data with analysis addressing the outcomes relative to the research questions. In section 5, I focus on the interpretation of the data analysis with the conclusions and recommendations based on the research study.

Section 4: Presentation and Analysis of Data

Introduction

In this section, I provide the results of this quantitative nonequivalent quasi-experimental design study to investigate the impact of the special education inclusion program on TCAP reading/language and mathematics test scores for middle school students with mild to moderate learning disabilities. First, the research purpose and research questions with hypotheses are presented. Next, I provide a description of the participants followed by a description of the data collection and the organization of the data. Last, I present an analysis of the data consistent with the research questions, hypotheses, and underlying theoretical framework of the study. The conclusion for this section is a summary of the outcomes in relation to their importance to the research question and hypotheses.

The purpose of this study was to examine if the implementation of a special education inclusion program for middle school students with mild to moderate learning disabilities improved TCAP test scores for reading/language and mathematics. The intent of this study was to examine if significant differences existed between the mean test scores for a cohort of students with disabilities in Grades 6, 7, and 8 taught in academic years 2003-2004, 2004-2005, and 2005-2006 prior to the implementation of the special education inclusion program and a cohort of students with disabilities in Grades 6, 7, and 8 taught in academic years 2006-2007, 2007-2008, 2008-2009 after the implementation of the special education inclusion program.

In this quasi-experimental design, the two cohorts were not randomly assigned. Participants were selected based on their identification as students with disabilities who participated in TCAP achievement testing at the study site between 2004 through 2009 inclusively. A *t* test was used to test the hypotheses that significant differences in the mean TCAP scale scores for reading/language and mathematics would be found between the two cohorts of middle school students with disabilities at a 95% confidence level. The special education inclusion program was implemented in the 2006-2007 academic year to increase the number of students with mild to moderate learning disabilities who reached proficiency levels on TCAP achievement testing. According to the theoretical framework based on Vygotsky's social development theory, students can be expected to have improved outcomes in an educational environment that both challenges and supports learning. The research questions and hypotheses are included here for the reader's convenience.

Research Questions and Hypotheses

Research Question 1: What is the impact of the special education inclusion program designed for middle school students with mild to moderate learning disabilities in Grades 6, 7, and 8 on their academic proficiency in reading/language as measured by TCAP state achievement test scores?

$H_0$1: There is no impact of the special education inclusion program designed for middle school students with mild to moderate learning disabilities in Grades 6, 7, and 8

on their academic proficiency in reading/language as measured by TCAP state achievement test scores at a 95% confidence level.

$H_1$1: There is an impact of the special education inclusion program designed for middle school students with mild to moderate learning disabilities in Grades 6, 7, and 8 on their academic proficiency in reading/language as measured by TCAP state achievement test scores at a 95% confidence level.

Research Question 2: What is the impact of the special education inclusion program designed for middle school students with mild to moderate learning disabilities in Grades 6, 7, and 8 on their academic proficiency in mathematics as measured by TCAP state achievement test scores?

$H_0$2: There is no impact of the special education inclusion program designed for middle school students with mild to moderate learning disabilities in Grades 6, 7, and 8 on their academic proficiency in mathematics as measured by TCAP state achievement test scores at a 95% confidence level.

$H_1$2: There is an impact of the special education inclusion program designed for middle school students with mild to moderate learning disabilities in Grades 6, 7, and 8 on their academic proficiency in mathematics as measured by TCAP state achievement test scores at a 95% confidence level.

Description of Participants

The convenience sample included 310 students with disabilities who participated in reading/language and mathematics TCAP testing at one middle school in 2004, 2005,

2006, 2007, 2008, and 2009. The sample size was limited to the number of students with disabilities who participated in the TCAP testing for the years included in the study. TCAP scores were collected for students who (a) were identified as a student with a disability, (b) participated in the TCAP assessment for the years under study, and (c) were enrolled and had active IEPs at the study site at the time of the TCAP assessment for each of the identified years. In Tables 4 and 5, I present the number of students for cohort 1 and cohort 2 by grade level and by academic year tested.

Table 4

Numbers Of Students By Grade Level And Testing Year For Cohort 1

Grade	2004	2005	2006	Total By Grade
6	14	19	16	49
7	9	21	17	47
8	14	10	23	47
Total By Year	37	50	56	143

Table 5

Numbers Of Students By Grade Level And Testing Year For Cohort 1

Grade	2007	2008	2009	Total By Grade
6	19	16	20	55
7	16	19	17	52
8	12	20	28	60
Total By Year	47	55	65	167

Collection of Data

The data collection involved archived data available from the state department of education through the local school district. TCAP data for special education students who participated in the testing in the spring of 2004 through 2009 were collected for reading/language and mathematics. Permission to collect the data was granted by the Walden University Institutional Review Board. Data collected included scale scores by grade level for each of the years included in the study. The identity of individual students remained anonymous.

Organization of Data

I organized the TCAP scale score data for reading/language and mathematics by subject area for the two cohorts. Cohort 1 was comprised of scores from students with disabilities in Grades 6, 7, and 8 tested in 2004, 2005, and 2006 prior to the implementation of the inclusion program. Cohort 2 was comprised of scores from students with disabilities in Grades 6, 7, and 8 tested in 2007, 2008, and 2009 after the implementation of the inclusion program. I arranged the data separately for reading/language subtests and mathematics subtests. This organization allowed the differences in the mean scores to be analyzed for the two cohorts in reading/language separately from the differences in the mean scores for the two cohorts in mathematics.

Instrumentation and Materials

The TCAP achievement test was the instrument utilized for this study. According to the Tennessee Department of Education (2010), the TCAP group achievement test is

mandated for Tennessee students in Grades 3-8 and is used to evaluate acquisition of basic and academic skills measured against specific standards. The TCAP tests were timed and comprised of multiple-choice criterion-referenced items designed to assess knowledge and problem-solving achievement as a current, yearly measure of student progress in Tennessee. Students take the assessment in the spring of each academic year, and the scores are disseminated by the Tennessee Department of Education for the school systems and individual schools.

According to the Tennessee Department of Education (2009a), TCAP testing was aligned with the Tennessee academic standards and demonstrated content validity. Construct validity for TCAP items was assessed using factor analysis to demonstrate that the items represented the stated instructional objectives. The test reliability measures for the 2009 TCAP CRTs were all 0.91 or greater indicating consistency of performance. These measures were calculated using classical test statistics to evaluate internal consistency and test reliability.

Analysis of the Data

The purpose of this study was to examine the impact of the inclusion program on the reading/language and mathematics TCAP test scores of two cohorts of students with disabilities in Grades 6, 7, and 8 at one middle school in Tennessee. This quantitative nonequivalent quasi-experimental study used a *t* test to evaluate the significant differences between mean test scores for the two cohorts of students with mild to

moderate learning disabilities on TCAP reading/language and mathematics achievement test scores.

In Table 6, I present the scores for mathematics indicating that the cohort tested after the implementation of the inclusion program had TCAP scores that were significantly higher than the cohort tested before the implementation of the inclusion program, $\alpha = .05$, $t\ (308) = 5.81$, $p = .011$

Table 6

Analysis Of TCAP Scores For Mathematics

	M	*SD*	*t* value	*p*
Cohort 1	489.38	39.49		
Cohort 2	513.18	32.61	5.81	.011

For reading/language, the cohort tested after the implementation of the inclusion program also had TCAP scores that were significantly higher than the cohort tested before the implementation of the inclusion program, $\alpha = .05$, $t\ (308) = 6.88$, $p = .015$. I present the significant findings in Table 7.

Table 7

Analysis Of TCAP Scores For Reading/Language

	M	*SD*	*t* value	*p*
Cohort 1	486.62	40.60		
Cohort 2	515.22	32.53	6.88	.015

Each of the hypotheses being tested in this study were focused on the impact of the special education inclusion program (the independent variable) on the reading/language and mathematics TCAP test scores of middle school students with mild to moderate learning disabilities (the dependent variable). The results indicate that the implementation of the inclusion program for students with mild to moderate learning disabilities had a positive impact on both the reading/language and mathematics TCAP scores of this sample of students in Grades 6, 7, and 8.

The goal of hypothesis testing with the *t* statistic was to use this sample of students with disabilities from a population of middle school students with an unknown mean to determine whether the implementation of the inclusion program had an effect on TCAP achievement test scores for reading/language and mathematics (Gravetter & Wallnau, 2008).

The first hypothesis was that the implementation of the inclusion program would have an effect on the reading/language test scores for the cohort taught between 2006 and 2009 after the implementation of the inclusion program. The *t* test revealed a significant impact on achievement with alpha set at .05.

The second hypothesis was that the implementation of the inclusion program would have an effect on the mathematics test scores for the cohort taught between 2006 and 2009 after the implementation of the inclusion program. The *t* test revealed a significant impact on achievement with alpha set at .05.

A hypothesis test was used to determine that the inclusion program yielded results that were greater that could be expected by chance (Gravetter & Wallnau, 2008). Cohen's *d* was utilized to evaluate the magnitude of the treatment effect in terms of the standard deviation. For reading/language the effect size was .52 suggesting that the implementation of the inclusion program had a medium effect on the reading/language TCAP scores. Additionally, for mathematics the effect size was .44 suggesting that the implementation of the inclusion program had a medium effect on the mathematics TCAP scores.

The findings indicate the positive impact of an inclusion program on TCAP achievement test scores for students with disabilities; however, the role of the resource program and the interaction of the programs were not examined. Identifying which students received instruction in the inclusion program and which students received instruction in the resource program was not available from the collected data. The guidance counselors identified students who had IEPs when reporting TCAP responses; however, the response form did not include an item to identify the inclusion or resource instructional setting.

The findings of this study might be useful to schools as they develop special education programs to meet the individual needs for middle school students with mild to moderate learning disabilities to assist IEP teams in making decisions to place students in the inclusion or resource programs. The positive impact of the inclusion program on TCAP scores indicates that students with disabilities could show improved state

achievement test scores with involvement in inclusion programs. The findings of this study suggest that the inclusion program had a positive impact on both reading/language and mathematics outcomes.

Summary

The purpose of this study was to examine if the implementation of a special education inclusion program for middle school students with mild to moderate learning disabilities improved TCAP test scores for reading/language and mathematics. A quantitative nonequivalent quasi-experimental design was used to investigate the impact of the special education inclusion program on student outcomes. The convenience sample included 310 students with disabilities who participated in reading/language and mathematics TCAP testing at one middle school between 2004 and 2009 inclusively. The archived data were made available from the state department of education and were obtained through the local school district. I collected the reading/language and mathematics TCAP data of special education students who participated in testing at the data site between 2004 through 2009 inclusively.

The *t* values for mathematics indicated that the cohort tested after the implementation of the inclusion program had mean TCAP scores that were significantly higher than the cohort tested before the implementation of the inclusion program. Similar results were revealed for *t* values for reading/language TCAP scores, suggesting that for reading/language the cohort tested after the implementation of the inclusion program also had mean TCAP scores that were significantly higher than the cohort tested before the

implementation of the inclusion program. These results are consistent with the theoretical framework for this study, which is based upon Vygotsky's social development theory. Inclusion is supported by Vygotsky's theory that students have differing needs and will learn more productively in the setting that provides the necessary support and appropriate challenges based on their individual needs for social interaction and engagement with the environment (Vygotsky, 1962).

The research questions for the study were focused on the impact of the special education inclusion program designed for middle school students with mild to moderate learning disabilities in Grades 6, 7, and 8 on academic proficiency in reading/language and mathematics as measured by TCAP state achievement test scores. The null hypotheses were rejected and the alternative hypotheses were endorsed. The TCAP reading/language and mathematics test scores for the students with disabilities were significantly improved for students after the implementation of the inclusion program. The findings suggest that students can have improved outcomes in reading/language and mathematics when the inclusion program is utilized. This could indicate that inclusion is an educational environment that both challenges and supports learning, which is a concept supported by Vygotsky's social development theory. Conclusions and implications related to the findings are discussed in detail in section 5.

Section 5: Summary, Conclusion, and Recommendations

Introduction

In this section, I present a summary of the previous sections and an interpretation of the findings including how the conclusions relate to the research questions and hypotheses. Afterwards, I discuss the implications for social change and recommendations for action and further research.

Summary of Research Purpose and Design

The problem addressed was that at the study site school district, located in Tennessee, the subgroup of students with disabilities in Grades 6, 7, and 8 was not reaching required standards on TCAP in reading/language and mathematics at the same rate as students without disabilities. Special education programs for students with disabilities were required to include access to the general education curriculum and educators were expected to provide challenging instruction to improve the performance of students with disabilities (IDEA, 2004; NCLB, 2002). Students with mild to moderate learning disabilities were expected to attain the same achievement standards as their nondisabled peers (Cortiella, 2007; Hardman & Dawson, 2008; IDEA, 2004; NCLB, 2002; Yell, Katsiyannas, & Shiner, 2006). The study site middle school provided instruction to meet the standard curriculum goals in both inclusion and resource settings.

A quantitative nonequivalent quasi-experimental design was used to investigate the impact of the special education inclusion program on TCAP reading/language and mathematics test scores for middle school students with mild to moderate learning

disabilities. In this quasi-experimental design, the two cohorts were selected based on their identification as students with disabilities who participated in TCAP achievement testing at the study site between 2004 and 2009.

The purpose of this study was to examine if the implementation of a special education inclusion program for middle school students with mild to moderate learning disabilities improved TCAP test scores for reading/language and mathematics. The intent of this study was to examine if significant differences exist between the mean test scores for two cohorts of students with disabilities. Cohort 1 included 143 students with disabilities in Grades 6, 7, and 8 taught in academic years 2003-2004, 2004-2005, and 2005-2006 prior to the implementation of the inclusion program. Cohort 2 included 167 students with disabilities in Grades 6, 7, and 8 taught in academic years 2006-2007, 2007-2008, 2008-2009 after the implementation of the special education inclusion program.

Summary of Research Findings

In the alternative hypotheses tested for this study, I stated that the special education inclusion program (the independent variable) would have a significant impact on the reading/language and mathematics TCAP test scores of middle school students with mild to moderate learning disabilities (the dependent variable). Based on the results of this study, the null hypotheses were rejected, and the alternative hypotheses were endorsed for reading/language and mathematics. The TCAP reading/language and

mathematics test scores for the students with disabilities were improved for the participants after the implementation of the inclusion program.

Relationship of Findings to the Empirical Literature

For more than 35 years, educational legislation and court decisions were applied to encourage and then require that students with disabilities have access to the general education curriculum (Gordon, 2006; IDEA, 2004; NCLB, 2002). Many special education services are available in the full continuum of placement options for IEP teams to consider when designing individual plans for students with disabilities. A student's IEP is individualized, and no one program will meet the academic achievement needs of every student (Bouck, 2007b; Fore et al., 2008; Gordon, 2006; Kauffman et al., 2004; Mackie, 2007; Morris & Mather, 2008).

At the data site, resource and inclusion were two of the programs most often recommended for students with mild to moderate learning disabilities, and each of those placements had research support. Research findings have been inconclusive about the impact of an inclusion program on achievement (Fore et al., 2008). The results of this study support the positive impact of an inclusion program on achievement outcomes for middle school students with mild to moderate learning disabilities. Inclusion can be appropriate to meet the needs of many students with disabilities with appropriate support from school administrators and teachers, as well as the parents and the students themselves (Burstein et al., 2004; Carpenter & Dyal, 2007; Jameson et al., 2007; Landrum, 2008). Resource instruction can be effective for some students, and resource as

an instructional model also requires the support of all stakeholders (Bouck, 2007b; Hochschild & Scovronick, 2003; Mackie, 2007; Rice, 2005). IDEA (2004) required providing instruction to students with disabilities in the general education curriculum until reasonable evidence that a student's needs cannot be met in that setting (IDEA, 2004). IEP teams must consider students as individuals and make decisions that address needs and goals regardless of the location of the special education services (Bouck, 2007b; Carpenter & Dyal, 2007; Fore et al., 2008; Morris & Mather, 2008; Rollins, 2007).

The theoretical foundation for this study is Vygotsky's social development theory, which applies to the inclusion and resource programs implemented at the study site. Students have differing needs and learn more productively in the setting that provides the necessary support and appropriate challenges based on their individual needs for social interaction and engagement with the environment (Vygotsky, 1962). The inclusion program was intended to challenge the student who had a level of skill development that would make success in the general education setting attainable. One possible impact of the inclusion program was the interaction between and among students with disabilities and students without identified disabilities. The findings of this study indicate that inclusion had a positive impact; however, the data did not specifically identify the influence of the individual student's ability.

With the increased accountability as measured by state achievement testing for all students as required by legislation, students with disabilities were being educated in the

general education setting in increasing numbers in many school systems (Carpenter & Dyal, 2007; Gordon, 2006; Sailor & Roger, 2005). As a response to the accountability demanded by NCLB and IDEA (Yell et al., 2006), more researchers evaluated the effect of inclusion and special education on student achievement (Doran, 2008; Fore et al., 2008; Jameson et al., 2007; Johnson, 2007; Landrum, 2008; Mackie, 2007; McCullough, 2008; Rollins, 2007). This study contributed to that debate regarding the effectiveness of inclusion programs by supporting the positive impact of an inclusion program for this sample of middle school students with mild to moderate learning disabilities.

My research was begun because of the achievement demands placed on special education students. The initial intent of the laws was to improve access for students with disabilities to the general education curriculum (IDEA, 2004; NCLB, 2002). Demands were placed on students with mild to moderate disabilities to hold students and educators accountable for standard-based achievement (Gordon, 2006; Yell et al., 2006). The special education programs at the study site applied the grade level standards in both the inclusion and resource settings. Whether the students in the inclusion program had improved outcomes compared to the students in the resource program is not apparent from the findings of this study.

One response to these demands for improved achievement was the implementation and expansion of inclusion programs to educate students with mild to moderate disabilities in the general education setting (Carpenter & Dyal, 2007; Doran, 2008; Jameson et al., 2007; Sailor & Roger, 2005). A review of the related literature

revealed a focus on preparing stakeholders to make this change to a more collaborative education community, including coteaching, to meet the needs of students with mild to moderate learning disabilities in the general education setting for inclusion programs (IDEA, 2004; Fore et al., 2008; Hardman & Dawson, 2008; Sailor & Roger, 2005). Researchers have studied collaboration extensively and have stated that educational collaboration requires preparation, commitment, and time to develop the trust and purpose needed for a true collaborative effort to meet the individual needs of all students. (Carpenter & Dyal, 2007; Friend, 2007; Murawski & Dieker, 2008; Paulsen, 2008; Villa & Thousand, 2005). Collaboration is not just helpful for teachers working together in the inclusion class setting; the strategies applied and knowledge of the standards are also useful for teachers of students in the separate special class setting (Idol, 2006; Paulsen, 2008; Villa & Thousand, 2005).

In the inclusion program at the study site, special education services were brought to the student rather than the student being removed to receive the service. Coteaching was utilized whenever possible to provide instruction by both a general educator and a special educator working together with equal standing (Bouck, 2007a; Gordon, 2006; Murawski & Dieker, 2008; Rea et al., 2002). At the study site, when a special educator was not available, a paraprofessional provided the direct service under the supervision of a special educator. At the middle school level, the general educator typically brings strength in the academic content and the special educator provides the expertise to address the issues of students with many different learning needs (Carpenter & Dyal,

2007; Paulsen, 2008). The educators working as coteachers at the study site worked to develop a teaching partnership in the inclusion program. In an effective inclusion program, coteachers must be willing to work to define their teaching roles, delineate and combine duties, and achieve balance and equity as educators (Bouck, 2007; Carpenter & Dyal, 2007; Murawski & Dieker, 2008).

Implications for Social Change

The implications for positive social change generated by this research include a better understanding of the impact of an inclusion program on the TCAP scores of students with mild to moderate learning disabilities at one middle school in Tennessee. Additionally, the implications include the consideration of the availability of a continuum of services for students in special education programs. Students should have access to the general education curriculum; although, the location and delivery of those services is determined by individual needs. The educational focus is on how programs affect progress on standards-based achievement testing. Improved outcomes for students with disabilities benefit students' preparations for high school and future efforts in higher education and the work force.

This study focused on the impact of the implementation of an inclusion program in the continuum of special education services available for students with mild to moderate learning disabilities at one middle school in Tennessee. The findings of this study support the positive impact of the inclusion program and reinforce positive social change aimed at providing special educational services in the general education

classroom. Specifically, the current study indicates a significant positive impact from inclusion for the sample of middle school students with mild to moderate learning disabilities on TCAP reading/language and mathematics achievement. The findings suggest that educators, parents, and students may improve a special education student's likelihood for a successful middle school experience with participation in the inclusion program.

A key implication for the current study was a better understanding of the impact of inclusion on the achievement of special education students. The environment of the general education setting may have been a key determiner in the positive impact of the inclusion program on the reading/language and mathematics scores for the students with disabilities. Improved application of the general education curriculum within the inclusion program may also have played an important role. The positive impact of the inclusion program for middle school students with disabilities on reading/language and mathematics TCAP test scores may be attributed in large part to the efforts of general and special education teachers and school administrators.

The inclusion program was not the only service available to students with mild to moderate disabilities at the study site; although, the implementation of the inclusion program was the only change to the special education program during the study period. The success of the special education program at the study site may also be attributed to the availability of a full continuum of services. These services ranged from consultation to inclusion classes to resource classes, which were determined by IEP teams based on an

individual student's ability, preparation, and motivation. The impact of the special education inclusion program on TCAP reading/language and mathematics is supported by the findings of this study. The implications of this study suggest that the addition of the inclusion program improved the likelihood of success in middle school for students with mild to moderate learning disabilities. The positive effect from the addition of the inclusion program identified in this study indicated that when schools provided challenging special education services based on individual needs, student achievement improved.

According to Weishaar (2008), NCLB and IDEA have generated increased emphasis on whether special education services impact the performance of students with disabilities. Students have the right to education in the least restrictive environment coupled with the right to educational achievement (Weishaar, 2008).

> Program success is now based, in part, on the outcomes that individual children met as a result of the program. Additionally, the lines between special education and regular education continue to fade, resulting in a more unified system of education for all children. (Weishaar, 2008, p. 83)

As the lines between special education and general education continue to fade, students may benefit from improved performance, acceptance, and integration into the educational system.

Recommendations for Action

The problem addressed in this study was that at the study site school district, located in Tennessee, the subgroup of students with disabilities in Grades 6, 7, and 8 was not reaching required standards on TCAP in reading/language and mathematics at the same rate as students without disabilities. The results of this study suggest that by implementing an inclusion program in the continuum of special education services the achievement test scores of students with mild to moderate learning disabilities may improve.

Recommendations for action that developed from this study focus on issues to increase understanding for special education inclusion programs and the impact of such programs on TCAP test scores for students with disabilities. An important action to consider is to continue efforts to prepare general education teachers and special education teachers to work more effectively with students with disabilities within the general education curriculum. This research indicates inclusion is a viable option for special education service and warrants continued implementation. A final recommendation is that stakeholders view inclusion as a service and not a location.

The findings of this study support the positive impact of an inclusion program on achievement test scores for students with mild to moderate learning disabilities. An important action step is to raise the level of awareness of this positive impact among special educators, general educators, school administrators, and parents. This increased awareness may come from open discussions during IEP meetings, regular collaboration

between special education and general education staff members, and more formal training opportunities.

Inclusion requires the support of school administrators at the building and district level. This support is reflected in the training opportunities that focus on students with disabilities, integration of the special education students in all aspects of the life of the school, and the involvement of special education staff in the professional learning community. The findings of this study were disseminated to the faculty at the study site in an effort to maintain and improve the programs for including students with disabilities in the general curriculum. The study findings were shared for possible application in other schools through inservice opportunities open to general education and special education teachers from other schools, school administrators, and school system leaders.

An important action to consider is that schools and school systems are searching for ways to improve the achievement outcomes for students with disabilities. The results of this study suggest that inclusion should be considered as a viable option as a special education service. Inclusion can be an important addition to the continuum of services offered. Students with disabilities can benefit from instruction provided in the general education setting. According to this study, the achievement test scores of students with disabilities can show improvement when inclusion is offered as a service.

A final recommendation is that stakeholders focus on the content of the services rather than the location. Students with disabilities have myriad strengths and weaknesses, and successful interventions depend on providing a continuum of instructional programs

that consider the student as an individual. Students with disabilities have access to the general education curriculum; however, the result of access to the general education curriculum does not involve "eliminating opportunities for intense, individualized, and explicit skill/strategy instruction provided by specialists" (Zigmond, Kloo, & Volonino, 2009, p. 201). The full continuum of services available with inclusion and resource programs may enrich special education.

Special education programs could be more effective if the program focus is on special education as a service and not a location. When IEP teams consider inclusion as a service designed to support a student in the general education curriculum, then the student is given opportunities to demonstrate learning in the general education setting with support. The students with disabilities are removed from that setting only after exhibiting less than expected progress in the general education inclusion setting. The resource program is recommended when the student's needs require more intensive intervention.

Current legislative actions have directed attention toward students with disabilities. The findings of this study indicate that inclusion had a significant positive impact on achievement test scores for the students involved. Although the TCAP scores improved, the scores of students with disabilities were still not maintaining the same pace as nondisabled students. Efforts to provide instructional services for students with disabilities to meet national and state achievement requirements need to be continually

evaluated to maintain this progress to meet the requirements of 100% of students reaching Proficient levels by 2014.

Recommendations for action that developed from this research include increasing an understanding of the impact of inclusion on achievement test scores for students with mild to moderate learning disabilities. Another action step could be to consider inclusion as a viable option in the continuum of services for special education programs. An additional action recommendation involves providing training opportunities for special education and general education teachers, staff, and administrators in working with students with disabilities in the general education setting. A final observation is that special education inclusion is a service and not a location.

Recommendations for Further Research

Recommendations for additional research include studies to examine whether inclusion programs have a greater effect on student achievement than resource programs. The findings of this study support the implementation of inclusion programs; however, the role of the resource program was not fully evaluated. The objective of further research could be to focus on how student learning characteristics impact success in either the inclusion or the resource program. Suggested topics to be investigated could include the role of motivation, ability level, and previous achievement levels on the success of students involved in the inclusion program. Research is still needed to fully evaluate the impact of special education programs on achievement outcomes for students with disabilities at all grade levels.

Conclusion

The findings of this study indicate a significant positive impact of an inclusion program for middle school students with mild to moderate learning disabilities on TCAP reading/language and mathematics test scores. The findings of this study are limited to the students with mild to moderate learning disabilities at this one middle school. Educators at the study site employed a special education program that utilized an inclusion model and a resource model to meet the individual needs of the students. The success of the special education program at the study site could be attributed to school-wide efforts to include students with disabilities in the general curriculum as well as inclusion in the general education environment. IEP teams at the study site recommended special education placements for students in programs that would challenge the students to achieve with supports as necessary. This practice is supported by Vygotsky's social development theory, which stresses the importance of the social learning environment.

This research study is related to existing empirical research. Services for students with disabilities have evolved during the history of education especially since the legislative changes including NCLB (2002) and EHA (1975) now called IDEA (2004). The initial intent of the laws was to improve access for students with disabilities to the general education curriculum, and now students with mild to moderate disabilities are held accountable for achieving the same standards as their nondisabled peers. The results of this research study indicate significant differences in mean achievement scores for students with disabilities before and after the implementation of an inclusion program at a

middle school in Tennessee. The results indicate significant differences for reading/language TCAP achievement tests and mathematics TCAP achievement tests. Inclusion involves collaboration between general education and special education personnel to bring the general education resources to students with disabilities in the setting that is most like the setting available to students without disabilities. The results of this study indicate inclusion may help students with mild to moderate disabilities make appropriate academic progress.

The implications for social change generated by this study include the impact of inclusion on successful experiences for middle school students with disabilities. More successful experiences at the middle school level may increase the likelihood of success at the high school level. The educational focus for special education is on how programs affect progress on standards-based achievement testing. Those standards are designed to indicate skills needed for successful higher education and career experiences. Inclusion may lead to improved preparation for high school and future efforts in higher education and the work force for students with mild to moderate learning disabilities.

Recommendations for action include increasing an understanding of the impact of inclusion on achievement test scores for students with mild to moderate learning disabilities to maintain and expand inclusion as a viable option in the continuum of special education services. This awareness involves educators, parents, and students as stakeholders in effective special education programs. An additional action recommendation involves providing training opportunities for special education and

general education teachers, staff, and administrators in working with students with disabilities in the general education setting.

Further research could explore whether or not the inclusion program has a greater impact on achievement test scores than the resource program. Additional research could examine learning characteristics to identify students who could benefit from the inclusion program. The findings of this study add to the available data suggesting that students with mild to moderate learning disabilities can display improved achievement outcomes when access to the general education setting and curriculum is available.

The current nationwide focus on improving student achievement outcomes is expected to continue. The current federal government leadership has expressed a commitment to reauthorize NCLB to maintain educational focus on rigorous standards and fair accountability for all students (USDOE, 2010). In March 2010, President Barack Obama's administration presented an outline of suggestions for changes to the Elementary and Secondary Education Act, which in 2001 was named No Child Left Behind. These suggestions included a prioritized outline of the department's commitment that education's goal is to prepare all students to graduate from high school prepared for higher education or careers "regardless of their income, race, ethnic or language background, or disability status" (USDOE, 2010, p. 3). The priorities included setting standards that raise expectations for all students with increased support to meet the needs of diverse learners.

> Our proposal will help ensure that teachers and leaders are better prepared to meet the needs of diverse learners, that assessments more accurately and appropriately measure the performance of students with disabilities, and that more districts and schools implement high-quality, state- and locally-determined curricula and instructional supports that incorporate the principles of universal design for learning to meet all students' needs. (USDOE, 2010, p.5)

Implementing strategies to achieve these priorities will continue to push educators to develop programs to focus on improving achievement for students with disabilities.

NCLB, which reauthorized the Elementary and Secondary Education Act (ESEA), had a dramatic effect on special education programs in public education. Changes may be made in the law when ESEA is again reauthorized; however, requirements for demonstrating student progress are expected to be retained in the statute. The findings for this study support a significant, positive impact of special education inclusion programs on TCAP reading/language and mathematics achievement test scores. Inclusion programming can be of benefit to educators as one effort to improve special education achievement for students with mild to moderate learning disabilities.

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Appendix A: Data Use Agreement

This Data Use Agreement is entered into by and between Ruth Carol Hawkins (Data Recipient) and XXXXXXX (school district). The purpose of this Agreement is to provide Data Recipient with access to a Data Set for use in research in accord with the HIPAA and FERPA Regulations. The T. Department of Education shall prepare and furnish to Data Recipient data in accord with any applicable HIPAA or FERPA Regulations. No direct identifiers such as names may be included in the Data Set. Data Recipient agrees to the data only as permitted by this Agreement and to use appropriate safeguards to prevent use or disclosure of the data to others than as permitted by this Agreement or required by law. IN WITNESS WHEREOF, each of the undersigned has caused this Agreement to be duly executed in its name and on its behalf.

DATA PROVIDER	DATA RECIPIENT
Signed: XXXXXXXXXXXX	Signed:
Print Name: XXXXXXXXXX	Print Name: Ruth Carol Hawkins
Print Title: XXXXXXXXXXXX	Print Title: Doctoral Candidate Walden

Appendix B: Letter of Permission to Conduct Research

November 30, 2010

Mrs. Carol Hawkins
XXX Middle School

Dear Mrs. Hawkins,

The request to conduct the research project at XXX Middle School on "The Impact of Inclusion on the Achievement of Middle School Students with Mild to Moderate Learning Disabilities" has been approved. Research in XXX County Schools that may include student surveys must also be in compliance with Board of Education Policy 6.4001.

Since you are extracting student achievement data, you must also adhere to FERPA requirements associated with student identification. Please consult with the school principal when obtaining student achievement data files. When research is conducted in the XXX County School System, it is standard procedure for the researcher to request the principal's approval, and if approved, data collection will also be subject to the time frame and conditions that the principal specifies. I emphasize that the research should not interfere with regular instructional program and that other school staff members' involvement be subject to his/her willingness to participate and the demands upon his/her time.

XX
Assistant
Superintendent
Curriculum and
Instruction

cc: XX, XXX Middle School Principal

Curriculum Vitae

Education

Doctor of Education in Teacher Leadership, Walden University, 2011

Masters Plus completed with graduate courses from Middle Tennessee State University and Walden University, 2009

Masters in Education in Special Education, Middle Tennessee State University, 1991

Bachelors of Science in Elementary Education with concentration in Special Education, Middle Tennessee State University, 1980

Teaching Experience

Middle School 2003 to present

Grade 8, Resource Reading, Language, and Math; Grades 6-8, Resource and Inclusion Math

Elementary School 1998 to 2003

Grades 6-8, Resource Reading, Language, and Math

Elementary School 1984 to 1998

Grades K-8, Resource; Grade 5, general education; Grades 5-8, Resource and Inclusion Reading, Language, and Math