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The Relationship Between Participation in Tutoring and Accountability Outcomes in Three Urban Middle Schools

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THE RELATIONSHIP BETWEEN PARTICIPATION IN TUTORING AND ACCOUNTABILITY OUTCOMES IN THREE URBAN MIDDLE SCHOOLS

by

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ABSTRACT

This quantitative study was conducted to determine the relationship between participation in a school based tutoring and change in accountability measures on the Florida Standards Assessment (FSA) in Mathematics and English Language Arts (ELA) in the 2014-2015 and 2015-2016 school years. The research was designed to determine the impact of participation in tutoring for urban middle school students. All students who attended one of the three urban middle schools and participated in the administration of FSA for mathematics or ELA in both the 2014-2015 and 2015-2016 school years were divided into two groups: students who participated in school based tutoring and students who did not participate in school based tutoring.

The results from this study unveiled the relationship between participating in school based tutoring and change in accountability measures on state assessments. The relationship of participation in tutoring and change in accountability measures was identified for all students, English learners, and students with disabilities who participated in school based tutoring and those who did not participate in school based tutoring. Lastly, the difference in mean change of accountability measures and participation by delivery model of school based tutoring: computer-based tutoring, small group tutoring, and a mixed mode of computer-based and small group tutoring was assessed.

Findings from Pearson Correlations, independent samples t-test, and one-way ANOVA did not indicate a statistical significance between change on accountability measures and participation in tutoring based on subgroups, delivery model, or grade level assessed. Though this study found no statistical significance, several of the mean changes on accountability measures based on subgroups, tutoring delivery models, or grade level was higher for students

who participated in tutoring than for students who did not participate in tutoring. There is still much to be understood about the impacts of tutoring on student achievement.

Every girl’s first love is her daddy.

My inspiration for achieving this success is my pops, my angel.

Although I only held your title and name for twenty-three days,

I will forever embrace your title and forevermore be your little girl.

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THE PROBLEM AND CLARIFYING COMPONENTS

Introduction

No Child Left Behind Act (NCLB) of 2002 required public education institutions to focus on accountability for student achievement. The NCLB reauthorization of the Elementary and Secondary Education Act of 1965 (ESEA), was intended to improve student achievement and renew the perseverance of the public education system. NCLB required all states to measure student achievement in mathematics and reading for Grades 3 through 8 and one time in Grades 10 through 12 (U.S. Department of Education [USDOE], 2015). In 2009, Race to the Top (RTTT) was established by President Barrack Obama. RTTT was a $4.35 billion federal program that awarded grants to the states in order to finance educational reforms. RTTT encouraged states to compete in creating educational reform and improvements in the classroom (USDOE, 2013). The increase of federal and governmental funds enhancing core educational reform also created tremendous growth of expectations in accountability for public education.

In 2010, end-of-course (EOC) assessments were established and continue as the Florida public school assessments (Florida Department of Education [FLDOE], 2010). Later, in 2014, Florida transitioned the state public school assessment from the Florida Comprehensive Assessment Test 2.0 (FCAT 2.0) to Florida Standards Assessment (FSA). The results of the tests provide information on individual student achievement and overall school success (FLDOE, 2014). FSAs no longer focus on the Next Generation Sunshine State Standards (NGSSS), but instead on the new Florida Standards that were derived from Common Core State Standards. FSAs measure student proficiency of reading, writing, and mathematics. EOC assessments

measure student mastery in specific courses for students including Algebra 1, Algebra 2, Geometry, Biology, Civics, and U.S. History (FLDOE, 2014).

Under NCLB, schools receiving Title I funds that have not made Adequate Yearly Progress for three or more years are required to provide access to supplemental educational services (SES) for all students who are performing below grade level (Slavin, 1999). According to Mendelsohn (2010), urban schools in particular, have encountered challenges expanding student achievement and have relied upon tutoring programs to assist in delivering supports for all students. Like many other categories in education, tutoring is not one size fits all. There are several reasons scholars are directed towards tutoring such as students whose parents drive them to excel, students who struggle academically, and students who want to perform well on standardized tests (Mendelsohn, 2010). Due to the increased accountability in Florida, public schools must ensure their students perform well on standardized tests. Urban schools have established tutoring programs to expand the support for all students. One strategy Wasik (1998) suggested to strengthening tutoring programs was coordinating tutoring with classroom instruction. The tutor must be in direct communication with the classroom teacher in order to ensure the session is directly related to classroom instruction (Wasik, 1998). According to the study conducted by Munoz, Potter, and Ross (2008), 71.9% of teachers indicated "not at all" (p. 16) when asked if the provider working with their students contacted them. These providers ranged from large national companies to local community-based organizations (Munoz et al., 2008).

According to the USDOE (2015), Every Student Succeeds Act (ESSA) was signed by President Obama in late 2015, and was a bipartisan reauthorization of the Elementary and

Secondary Education Act (ESEA). Intended to provide a smooth transition from ESEA to ESSA, states that received funds from the state formula grant under ESEA were required to continue implementation of that program for the 2016-2017 school year in accord with NCLB. ESSA provides autonomy to the states to reform their educational systems without the restriction of specific federal measures in place. Schools are encouraged to create initiatives to expand educational opportunity and improve student achievement under ESSA. ESSA creates equity by protecting America's disadvantaged and high-need students. The USDOE (2015), stated ESSA holds all students to high academic standards, prepares students for success in college and career, and provides access to high-quality preschool for more children. ESSA also ensures schools and students are improving, reduces the burden of testing while providing annual information to educators and families, and promotes evidence-based interventions that are developed by local leaders and educators. Most importantly, ESSA maintains the expectations of accountability and action to effect positive change in the nation's lowest performing schools (USDOE, 2015). ESSA empowers states to reduce the use of unnecessary assessments as well as the ability to include performance-based assessments for students. With responsibility shifting to each state, school districts are expected to provide supports for all schools to ensure growth of student achievement. In the 2017-2018 school year, ESSA is not a mandate for implementation of supplemental services, including tutoring programs, but school districts are still expected to create interventions that best meet the needs of their students. Under ESSA rules, 7% of a state's allocation of Title 1 funds must be spent on struggling schools implementing targeted and comprehensive services for all students. Therefore, determination of the development and implementation of a school-based tutoring program is crucial to determine what tutoring should

continue to be offered as an opportunity to achieve success on state assessments. Tutoring programs within the nation's public schools should be studied to determine their effectiveness in increasing student achievement.

In 2015, prior to the authorization of Every Student Succeeds Act (ESSA), Maestre completed research on the relationship between participation in tutoring and accountability measures in an urban high school setting. Maestre concluded students who participated in tutoring did not out-perform those who were not participants in tutoring, but the results showed that those who participated in tutoring demonstrated a greater change in developmental scale scores (DSS). Thus, the findings of Maestre (2015) supported the notion that participation in tutoring did impact student achievement on high stakes tests in an urban high school setting. Despite these findings, questions remain as to (a) whether the implementation of tutoring programs has an effect on student achievement and (b) the relationship of tutoring to high stakes testing in an urban middle school setting.

Statement of the Problem

The problem of this study was that there is a lack of evidence-based research on the effectiveness of tutoring approaches in middle schools. Accountability within public education has required schools to develop tutoring programs to assist in enhancing student performance outcomes, and these programs vary based on the specific needs of each school's population. Students in urban school districts are faced with unique challenges that students in affluent communities may not encounter as frequently (Hull, 2003), and a large population of students in

urban areas tend to rely on the school to provide tutoring programs to assist in closing achievement gaps (Payne, 2003a).

Purpose of the Study

The purpose of this study was to determine the relationship between middle school students' participation in tutoring and changes in outcomes on state accountability measures on the Florida Standards Assessment in English Language Arts and Mathematics. NCLB (2002) shaped the environment to increase accountability in the United States' public school systems, and as a result, Florida increased academic standards and produced new assessments to measure student performance outcomes. Several middle schools have responded to the calls for improvement by implementing tutoring programs. Though these programs have varied in design, they have shared the similar intentions of student achievement and success.

The researcher examined student achievement within three urban middle schools utilizing three resources for tutoring: (a) computer-based tutoring facilitated by a certified teacher, (b) small group tutoring delivered by a certified teacher, and (c) a mixed mode approach of small group tutoring and computer-based tutoring delivered by a certified teacher. This study was conducted to determine if frequency of participating in tutoring increased student achievement for middle school students, specifically in reading and mathematics.

Context of the Study

The schools at the center of the study were three urban middle schools in the central Florida area. The three middle schools are identified as School A, School B, and School C to

maintain anonymity. The researcher obtained demographic data for each school from the Enterprise Warehouse Database.

In School A, of the 1,074-student population, the English learner (EL) population was 21.0% and the exceptional student education (ESE) population was 15.7%. In 2016 the racial makeup of the school was diverse: 8.4% Black, 75.0% Hispanic, 12.8% White, 1.9% Asian/Pacific Islander, and 1.6% Multicultural. 100% of the students qualified for free or reduced lunch services during the 2015-2016 school year (Enterprise Student Warehouse, n.d.).

In School B, of the 729-student population in 2016, the English learner (EL) population was 7.0% and the exceptional student education (ESE) population was 16.0%. The racial makeup of the school was diverse: 89.4% Black, 8.1% Hispanic, 1.2% White, 0.3% Asian/Pacific, and 1.0% Multicultural. 100% of the students qualified for free or reduced lunch services during the 2015-2016 school year (Enterprise Student Warehouse, n. d.).

In 2016 in School C, of the 1,019-student population, the English learner (EL) population was 14.4% and the exceptional student education (ESE) population was 10.1%. The racial makeup of the school was diverse: 15.4% Black, 59.9% Hispanic, 14.8% White, 7.7% Asian/Pacific Islander, 1.8% Multicultural, 0.5% American Indian/Alaskan Native. 100% qualified for free or reduced lunch services during the 2015-2016 school year (Enterprise Student Warehouse, n.d.). These data are displayed in Table 1.

Table 1

Demographic Characteristics of Study Population (N=2,822)

	School A		School B		School C	
Characteristics	n	%	n	%	n	%
Total student enrollment	1,074	100.0	729	100.0	1,019	100.0
Free/reduced lunch	1,074	100.0	729	100.0	1,019	100.0
English learner	225	21.0	51	7.0	147	14.4
Exceptional student education	169	15.7	117	16.0	103	10.1
Race/ethnicity						
Black	90	8.4	652	89.4	157	15.4
Hispanic	810	75.0	59	8.1	610	59.9
White	137	12.8	9	1.2	151	14.8
Asian/Pacific Islander	20	1.9	2	0.3	78	7.7
Multi-racial	17	1.6	7	1.0	18	1.8
Other	0	0.0	0	0.0	5	0.5

Note. Other = American Indian/Pacific Islander.

Tutoring Approaches

During the 2015-2016 school year, students in each of the three urban middle schools were invited to participate in a school-wide tutoring program at their home middle school. The tutoring programs within each school differed slightly. School Improvement Plans (SIP) were reviewed to gather information regarding the tutoring model and offering times at each of the three schools. Each SIP only included before and after school times and programs, therefore each of the school's tutoring coordinator was contacted to confirm if any additional times or programs were offered as tutoring.

School A offered a fall and spring session before school Monday through Friday from 8:30 a.m. to 9:15 a.m. and afterschool on Monday and Tuesday from 4:00 p.m. to 5:00 p.m. School A utilized classroom teachers to conduct the tutoring sessions. Although a certified teacher was present, they were only used as facilitators of the computerized program. Tutoring

was conducted utilizing an intervention approach. Those students receiving tutoring in reading used the software, iStation, and those receiving tutoring in mathematics used the software, Think Through Math. Both intervention programs were purchased by the school from the urban school district's approved intervention product list. The approved list of products provides a variation of intervention for the principal to choose from based on their student population needs. The programs selected, iStation and Think Through Math provide differentiation based on individual student's need.

The morning tutoring sessions were available to any student who elected to participate. Initially, the school intended that the participation in the afterschool tutoring program would be based on teacher recommendations, but it was made available to any student recommended throughout the school year by a teacher or parent. Many of the students began attending after a parent conference was held during which the student's school performance was discussed. Transportation was provided from school to a bus stop located close to their homes for any students who participated in the afterschool tutoring program.

School B provided tutors every day after school for one hour. In the spring, additional tutoring was added on Saturday mornings from 9:00 a.m. to 12:00 p.m. Teachers who were employed by the school and were considered to be highly-qualified by the FLDOE conducted the tutoring sessions. Teachers who hold a valid Florida teaching certificate and are able to provide instruction in a specific subject area are considered to be highly-qualified. Small group instruction was utilized to ensure standards based instruction was continuing to occur. Tutors were expected to use data identified in their academic courses in combination with assessments completed in tutoring to determine daily instruction in tutoring. All tutors were provided an

hourly stipend from the school as compensation for tutoring. The individual students who participated in each of the tutoring programs were targeted by the school using previous formative test scores, achievement levels on FSA, and teacher recommendations.

School C provided tutoring three days per week from 4:00 p.m. – 5:15 p.m. At the end of January, eight Saturday sessions were added to emphasize FSA/EOC preparation. The school targeted those who did not score at the proficient level on the previous years' state assessment in mathematics and reading through previous FSA test scores and achievement levels. The teachers used a combination of small group instruction and computer-based tutoring to meet each student's need. Certified teachers were hired to deliver tutoring each week and were provided an hourly stipend from the school as compensation for tutoring. Table 2 displays the tutoring models that were used in the study.

Table 2

Tutoring Models

School	Schedule and Subjects	Tutors	Model
A	Fall and Spring Session Afterschool: Monday and Tuesday, 4:00 p.m. - 5:15p.m. Before school: Monday through Friday, 8:30 a.m. - 9:15 a.m. Mathematics and Reading	Certified Teachers	Computer-based instruction
B	Fall and Spring Session Afterschool: Monday through Friday, 1 hour Saturday: 4 sessions, 9:00 a.m.- noon Mathematics, Civics, Science, English Language Arts	Certified Teachers	Small group instruction
C	Fall and Spring Session Afterschool: Monday and Tuesday, Thursday, 4:00 p.m.- 5:15 p.m. Saturday: 8 sessions, 9:00 a.m. - 12:00 p.m. Mathematics and Reading	Certified Teachers	Computer-based instruction and small group instruction

Definition of Terms

The following terms and phrases were defined for the purpose of this study. All terms and phrases have been defined as they apply to education within the State of Florida.

Algebra 1. This course is offered to high achieving middle school students and provides early access to meet a high school requirement. The course is intended to provide students with

rich understanding of linear and exponential relationships. The students will utilize mathematics as a practical course to provide them with the ability to problem solve using logic and reasoning. Scored on a scale from 1 to 5, satisfactory is achieved at 3 and above (CPALMS, 2015).

Developmental Scale Score (DSS). DSS scores are utilized for educators and parents to identify annual academic progress from year to year. The DSS corresponds to an Achievement Level of 1 to 5, with the score of a 3 being the measure for passing (FLDOE, 2013).

Economically disadvantaged students. Economically disadvantaged refers to students who are classified as low socioeconomic status (SES) as determined by their receiving of free or reduced lunch (FLDOE, 2010).

English for Speakers of Other Languages (ESOL). ESOL programs are those programs developed for students who have been determined eligible for an educational program to provide instruction with language support for English learners (EL) (Maestre, 2015).

English learner (EL). An English learner is an individual who was not born in the United States and whose native language is a language other than English; an individual who comes from a home environment where a language other than English is spoken in the home; or an individual who is an American Indian or Alaskan native and who comes from an environment where a language other than English has had a significant impact on his or her level of English language proficiency and has difficulty speaking, reading, writing, or listening to the English language thus limiting their ability to learn successfully learn in classrooms where the language of instruction is English (Fla. Stat. § 1003.56).

Exceptional student education (ESE). ESE programs are those developed for students who have been determined eligible for a special program in accordance with rules of the State Board of Education. The special programs include students with autism spectrum disorder, speech impairment, intellectual impairments, language impairments, other health impairment, traumatic brain injury, orthopedically impaired, visual impairment, specific learning disability, emotional/behavioral disability, visually impaired, and also includes gifted students (Fla. Stat. § 1003.01).

Florida End-of-Course Assessment (EOC). EOCs are computer-based, criterion referenced assessments that measure Florida Standards. Courses impacted at the middle school level include Algebra 1, Geometry, and Civics as outlined in their course descriptions. End-of-course examinations that are assessing the Florida Standards are indicated by Achievement Levels on a scale from 1 to 5; satisfactory level is achieved at 3 and above (FLDOE, 2015).

Florida Standards. Mathematics and Language Arts Florida Standards were approved by the State Board of Education in 2014 with the intent to ensure all graduates have acquired solid critical thinking, problem solving, and communication skills. All public schools in the state of Florida began implementing the Florida Standards beginning in the 2014-2015 school year (FLDOE, 2016).

Florida Standards Assessment. The Florida Standards Assessment is in place to assess students in English Language Arts (ELA) and Mathematics in Grades 3 through 10. It measures educational gains and progress of students across Florida in the areas of reading, writing, and mathematics (FLDOE, 2015).

Formative assessment. Formative assessment includes questions, tools, and processes that are embedded in instruction and are used by teachers and students to provide timely feedback for purposes of adjusting instruction to improve learning (FLDOE, 2010).

High needs student. High needs students include those at risk of educational failure, generally requiring specialized supports in place for variety of reasons such as a student who is far below grade level, at risk for not graduating, dropped out of school prior to graduating, attends high-minority school, living in poverty, homeless, in foster care, history of incarceration, students with disabilities, or English learners (FLDOE, 2010).

Highly-qualified teacher status. This status specifies whether a teacher meets the criteria of a highly-qualified teacher. All teachers who instruct in a core academic subjects must be highly-qualified. A person earns this status when they hold an acceptable bachelor's or higher degree and has a valid Florida Temporary or Professional certificate (FLDOE, 2007).

Performance outcome. These outcomes represent the desired effect of student learning and can be measured in multiple ways. For the purpose of this study, performance outcomes are determined by student change scores earned on high-stakes testing on the Reading and Mathematics Florida Standards Assessment for two consecutive school years (FLDOE, 2015).

Race to the Top (RTTT). This federal initiative offers bold incentives to states willing to spur systemic reform to improve teaching and learning in America's schools. It has ushered in significant change in the U.S. education system, particularly in raising standards and aligning policies and structures to the goal of college and career readiness.

RTTT has helped drive states nationwide to pursue higher standards, improve teacher effectiveness, use data effectively in the classroom, and adopt new strategies to help struggling schools (The White House, 2014).

School-wide tutoring program. A school-wide program in a school is aimed to provide tutoring to meet the needs of all students. A school-wide tutoring program efforts is to identify the needs of students in specific subject areas and provide a service to meet their needs (Maestre, 2015).

Supplemental educational services (SES). Supplemental educational services are those provided to students who are faced with a combination of sociological and economic status. Individuals' poverty, education, and wealth and individuals are measured using a rating scale from high to low (FLDOE, 2013).

Student achievement. Student achievement is signified by a student's score on the State's assessment under the ESSA; and, as appropriate, by other measures of student learning, provided they are rigorous and is standard based (FLDOE, 2013).

Summative assessment. Summative assessments are used to evaluate student mastery of content of a full year or cumulative of instruction. Achievement Levels measure the results of these assessments (FLDOE, 2010).

Urban school setting. Urban schools are schools that are located in an urban area rather than a rural, small town, or suburban area with a relatively high rate of poverty (as measured by free and reduced lunch data). The school has a relatively high proportion of students of color and a relatively high proportion of students who are Limited English

Proficient. Though schools do not need to meet all of these characteristics in order to be considered urban, most do (FLDOE, 2010).

Conceptual Framework

Jean Piaget and Lev Vygotsky are two key theorists whose beliefs supported the Cognitivism Theory (Owens & Valesky, 2015). Although the two theorists did not align directly they had a shared common belief that the development at which learners process and retain information is a critical component to the process of learning (Woolfolk, 2004). When serving struggling students, applying components of the cognitivism theory throughout instruction can reinforce student learning, holding the ability to refer to several learning activities that could be integrated within a student's learning process to ensure information is correctly stored into long term memory or the student has grasped a full understanding of a concept such as but not limited to: (a) variety of practice; (b) corrective feedback and attentiveness to learners schema; (c) chunking information and basing new information on prior knowledge; (d) explanations and demonstrations, both verbally and illustratively; (e) use of advanced organizers or concept mapping with explicit instructions (Yilmaz, 2011).

If students struggle to remain on grade level during the traditional school day, school leaders must identify interventions to best support all learners. According to Van Zoeren (2003), tutoring programs within urban public schools have increased because students who are low achieving require additional time and individual assistance to achieve mastery. For the purpose of this study, the conceptual framework was focused on four components: (a) the impact of tutoring programs on students in urban settings; (b) the impact of tutoring programs on students

served in the exceptional student education program; (c) the impact of tutoring on students served in the English for Speakers of Other Languages (ESOL) program; and (d) the impact of specific tutoring approaches.

Impact of Tutoring Programs on Students in Urban Settings

No Child Left Behind Act of 2001 mandated public education organizations to focus on accountability for student achievement. If schools received Title I funds but did not display Adequate Yearly Progress for three or more years, they were required to provide supplemental educational services (SES) to all students who were struggling (NCLB, 2002). SES are utilized within underperforming public schools and are offered to students who qualify as low income as defined by receiving free and reduced meals and who needs assistance to acquire academic success (FLDOE, 2013). According to researchers (Lewis, 2006; Warkentien & Grady, 2009), there is little to no evidence to indicate large change for a school's Adequate Yearly Progress (AYP) when students participate in SES tutoring; however, there have been significant findings supporting the reliability of tutoring improving student achievement (Slavin, 1999). Tutoring in urban settings has had a significant and positive effect on test scores in mathematics but results in reading tend to be inconsistent. Springer, Pepper, and Ghosh-Dastidar (2014) were unable to track the extent of students receiving academic focused tutoring as well as the implementation model occurring. The authorization of Every Student Succeeds Act in 2015 required states to identify and monitor school districts to ensure they are providing comprehensive supports to improve their lowest-performing schools. Though ESSA (USDOE, 2015) did not mandate the implementation of supplemental education services, school districts were still held to the

expectation that they were providing comprehensive supports to increase student achievement for all students. With the transition to ESSA, school districts were required to have a plan of intervention supports they are providing at their struggling schools. This extended the need to further investigate if tutoring in urban middle schools had an effect on student achievement and determine the relationship of the tutoring approach to student achievement.

Tutoring Students with Disabilities

Students served in an exceptional student education program encounter unique challenges in regards to tutoring. Individuals with Disabilities Education Act (IDEA) has provided protections for students with disabilities. IDEA has mandated schools to identify students who have a disability which impedes their learning, ensure that all students with disabilities are monitored appropriately, and provide families with school choice to ensure services are being provided. The school must create an Individual Education Plan (IEP) and outline the additional services students require in order to access a free and appropriate public education (IDEA, 2004). When tutoring a student with an IEP, the school should review the goals and assist the student in achieving the outlined goals (Ryan & Cooper, 2004). Typically, the tutoring strategies do not differ based on whether the student has a disability; however, the tutor needs to be aware of individual needs such as additional time as examples or practice may be required for the student to acquire the concepts being taught (Hervey, 2013).

Tutoring English Learners

Tutoring strategies do not differ significantly for English learners (EL). According to Ryan & Cooper (2004), English learners require strong content support infused in tutoring as

well as embedded language acquisition within content mastery. Those tutoring ELs should be aware of the Sheltered Instructional Observation Protocol (SIOP). SIOP displays strategies to implement when working with English learners. Specifically, the model outlines eight interrelated components including lesson delivery, assessments, practice, preparation, background information, comprehensible input, interaction, and strategies (Center for Applied Linguistics, 2013).

Specific Tutoring Approaches

According to Hock, Pulvers, Deshler, and Schumaker (2001a), students must develop independent proficiency through strategic tutoring in order for tutoring to be effective. Tutoring cannot consist only of assignment assistance or homework help. Rather it should require students to interact with strategies to display a long-term effect. The tutoring fidelity checklist used in the research of Hock et al. show that in most cases, tutors were modeling the key effective strategies throughout their tutoring sessions. However, there were cases in which the tutors did not incorporate any of the key strategies, so it was difficult to determine if an increase in the quality of tutoring would have positively affected students' performance (Hock et al., 2001a). Maestre (2015) recommended that school leaders should understand the needs of their students and implement a tutoring model to meet students' needs.

Research Questions

The following research questions were closely aligned with those used by Maestre (2015) in a study of the academic impact of tutoring in one urban high school. Utilizing aligned research questions allowed for a direct comparison of the results between the 2015 high school

research and the current middle school study. The research questions were developed to determine if a relationship existed in students' participation in the three tutoring models and their achievement results. The following research questions were used to guide this study.

1. What is the relationship between students' frequency of participation in tutoring and change in performance outcomes on state assessments?
2. How does change in achievement on state assessments for students who participate in tutoring compare to change in achievement on state assessments for students who do not participate?
3. How does change in achievement on state assessments for students who are classified in the Exceptional Student Education (ESE) program and participate in tutoring compare to change in achievement on state assessments for ESE students who do not participate?
4. How does change in achievement on state assessments for students who are in the English for Speakers of Other Language (ESOL) program and participate in tutoring compare to change in achievement on state assessments for those who do not participate in tutoring?
5. How does the change in achievement on state assessments differ among the three tutoring models?

Methodology

A causal comparative study was conducted within three urban middle schools to analyze the relationship of school-based tutoring and change in student achievement. In addition, a

comparison of the models of tutoring being provided within each of the three middle schools was completed. The study was conducted to measure student achievement on the FSA English Language Arts and FSA Mathematics. The relationship of tutoring and the frequency of participation in the school's tutoring program for students who were assessed on one or more of the Florida Standards Assessment were compared to students who did not participate in the school based tutoring program. Spring 2015 and Spring 2016 score reports from the Florida Standards Assessment in English Language Arts and Mathematics were used to determine if treatment students demonstrated added success because of participating in the school based tutoring program.

Population and Sample

The population for this study consisted of 2,822 middle school students who were enrolled at one of the three urban middle schools in Central Florida during the 2015-2016 school year. The sample consists of all students who participated in the Florida Standards Assessment during the 2014-2015 and 2015-2016 school years for mathematics or English language arts. All middle school students were scheduled to participate in a state assessment through their English language arts and mathematics courses. Two groups were formed within each of the three schools: (a) students who participated in the school tutoring programs and (b) students who did not participate in the school tutoring programs.

Additionally, the students were identified within the groups as participants or nonparticipants in the English for Speakers of Other Languages (ESOL) program and the exceptional student education (ESE) Program. ESE students who participated in the Florida

Standards Alternate Assessment (FSAA) were not part of the ESE groups. In addition, gifted students were included as general education students and are not part of the ESE group.

The treatment groups included students in Grades 6-8 who were assessed by the Florida Standards Assessment for English Language Arts or Florida Standards Assessment for Mathematics and participated in the school tutoring program. The second group included students in Grades 6-8 who were also assessed by the FSA English Language Arts or FSA Mathematics but did not participate in the school tutoring program. Participation in the school tutoring programs at Schools A, B, and C was voluntary with data based decisions leading to invitations to students to participate.

Instrumentation

This study was a replication of research completed in 2015. The study also utilized student participation and frequency of attendance data collected from the target schools' archival data to determine the students who participated in the respective tutoring programs. Each student was assigned a numeric code beginning at one. The tutoring program attendance records were used to identify frequency of participation. Academic data that was requested from the school district included the following: demographics, Spring 2015 and Spring 2016 score reports, including developmental scale score, achievement level and learning gains, from FSA ELA and FSA Mathematics. These data were used to determine the extent to which treatment students experienced academic success in reading or mathematics compared to students who did not participate in tutoring.

Data Collection

The approval from the University of Central Florida's Institutional Review Board (Appendix A) was acquired prior to applying to the target school district for approval to gather data. Approval from the target school district (Appendix B) was sought and received in order to access the following data: archival data of frequency of participation of student in the tutoring programs within the three middle schools, demographics, Florida Standards Assessment scores for the 2014-2015 and 2015-2016 school years, and learning gains. All of the data collected were reported in aggregate.

Data Analysis

A Pearson Correlation, independent sample t-test and ANOVA were used to analyze data to respond to the research questions for this study. The data were analyzed using the Statistical Package for Social Sciences (SPSS), and the appropriate tests were conducted to determine the significance of the findings in the research. It was anticipated that the data analysis would determine if the frequency of attending tutoring resulted in a higher change of success for student developmental scale score outcomes within the three middle schools. The researcher used frequency of tutoring attendance, ESE status, and EL status to determine the impact of change in student achievement. The relationship between the research questions, sources of data and statistical analysis used in the data analysis are shown in Table 3.

Table 3

Research Questions, Data Sources, and Statistical Analysis

Research Questions	Data Sources	Analysis
1. What is the relationship between students' frequency of participation in tutoring and change in performance outcomes on state assessments?	Tutoring program attendance records Student DSS on FSA English Language Arts Student DSS on FSA Mathematics	Pearson Correlation
2. How does change in achievement on state assessments for students who participate in tutoring compare to change in achievement on state assessments for matched students who do not participate?	Tutoring program attendance records Student DSS on FSA English Language Arts Student DSS on FSA Mathematics	Independent samples t-test
3. How does change in achievement on state assessments for students who are classified in the Exceptional Student Education (ESE) program and participate in tutoring compare to change in achievement on state assessments for ESE students who do not participate?	Tutoring program attendance records Student DSS on FSA English Language Arts Student DSS on FSA Mathematics	Independent samples t-test
4. How does change in achievement on state assessments for English learners (EL) who are in the English for Speakers of Other Language (ESOL) program and participate in tutoring compare to change in achievement on state assessments for ELs who do not participate?	Tutoring program attendance records Student DSS on FSA English Language Arts Student DSS on FSA Mathematics	Independent samples t-test
5. How does the change in achievement on state assessments differ among the three tutoring models?	Tutoring method Tutoring program attendance records Student DSS on FSA English Language Arts Student DSS on FSA Mathematics	ANOVA

Note. DSS = Developmental Scale Score; FSA = Florida Standards Assessment

Delimitations and Limitations

This study included tutoring in reading and mathematics. Therefore, the relationship of tutoring in other content areas was not a part of this study. The population included ESE students who participated in the Florida Standards Assessment and EOCs. The study did not include students who participated in the Florida Standards Alternate Assessment, as they generally do not participate in additional tutoring.

The state of Florida includes gifted education under the umbrella of exceptional student education. However, gifted students were not included in the ESE data. Gifted students do not fall under the Individual Disabilities Education Act. Therefore, they were treated as general education students for the purpose of this study.

Personnel at each middle school created a unique tutoring program based on student needs at their schools. Thus, the amount of tutoring and approval process differed based on individual school administrative decisions.

Significance of the Study

It was the researcher's intent in this study to provide professional knowledge that may be useful to urban middle school personnel in developing their own tutoring programs. The study was intended to determine the relationship between the tutoring method utilized and student achievement as well as provide a clear understanding of the influence of tutoring on student achievement outcomes.

Summary

Existing research regarding the impacts of school tutoring programs on student achievement is inconclusive, and there have been limited findings explaining the relationship between frequency of attendance based on the tutoring models utilized and impacts on student achievement in large urban middle school settings. In the study conducted by Maestre (2015), the researcher contributed to existing research regarding the relationship between tutoring and high stakes testing accountability measures in a large urban high school setting. There continues to be a lack of research to determine if tutoring has an impact on student achievement at the middle school level as well as a clear understanding of the impacts of what models of tutoring intervention will result in the greatest outcomes.

This research will assist districts and school leaders in making decision regarding effective tutoring models to best meet the needs of their students. Grasping a full understanding of the impact of a tutoring program on student achievement will allow research based decisions to be made in order to ensure students' needs are being met efficiently.

CHAPTER 2
REVIEW OF THE LITERATURE

Introduction

The implementation of No Child Left Behind (NCLB) in 2002 and Race to the Top (RTTT) in 2009 created urgency for states to increase measurement of student accountability in efforts to increase student proficiency. With the efforts to increase student proficiency for all, including those in urban environments, federal funding created more opportunities for students to receive additional support in public schools. School districts logically sought out additional practices to ensure all students were successful on these state assessments. One of the pillars of NCLB allowed schools to utilize Title I dollars to provide supplemental services with the intent to increase student achievement for all. With the increase of funds, schools were required to implement services outside the normal day of instruction to provide extra assistance to disadvantaged students (FLDOE, 2013). Many public schools turned to after-school tutoring as a form of supplemental services for students below proficiency. Tutoring programs differed between districts and even schools, but all schools intended to provide effective tutoring programs to address the needs of their students and increase student achievement.

In the 2015-2016 school year, middle school students in Florida could potentially participate in three state assessments to measure their proficiency in precise areas. All students in Grades 6, 7, and 8 were required to take Florida Standards Assessment in English Language Arts (FSA ELA) as well as a state assessment for mathematics based on the courses in which they were enrolled. Students enrolled in Algebra 1 were assessed on the Algebra 1 end-of-course (EOC) examination; those enrolled in Algebra 2 were assessed on the Algebra 2 end-of-course

(EOC) examination; those enrolled in Geometry were assessed on the Geometry end-of course (EOC) examination; and the remaining students were assessed on the Florida Standards Assessment in Mathematics. Additionally, all students enrolled in Civics were required to take the Civics end-of-course (EOC) examination (Fla. Stat. § 1008.22, 2013).

In a 1982 meta-analysis incorporating 65 published studies evaluating effective tutoring, Cohen, Kulik, and Kulik determined there was a positive effect of tutoring on achievement. In a more contemporary study, Nunnery, Chappell, and Arnold (2013) found a positive correlation between student achievement and instructional practice. Though according to Springer et al. (2014), limited studies have been focused on the impact of supplemental educational services on student achievement, accountability of these programs has increased. Slavin (1999) observed that the reporting of how schools provided supplemental services was made a requirement for all schools who receive Title 1 funding. In an analysis conducted by Zimmer et al. (2010), supplemental services had a 26% effect size in mathematics and negligible effects in reading. There has been a lack of research on the effect of tutoring specifically for students served in the English learners or exceptional student education programs within urban schools. This study was conducted to increase the body of research on implementation models of after-school tutoring programs and its effects on English learners (EL), exceptional student education, and students instructed in urban school districts. This review of literature provided the basis on which to conduct further research on the analysis of after-school tutoring and its effects on student achievement in urban settings.

This review of literature sets the foundation to conduct further research on the analysis of after-school tutoring and its effects on student achievement in urban settings. Sources for this

literature review included educational journals from ERIC, SAGE, and LexisNexis as well as dissertations from Pro Quest. Keywords utilized during this research included, "tutoring OR tutors OR tutor training", "urban education OR urban schools", "English language learners OR ESOL OR English second language", "high stakes testing OR standardized tests", "academic achievement", "special education OR special needs students OR at risk students", and "high schools OR intermediate grades OR secondary schools. Similar to Maestre (2015), in this literature review, the researcher focused on four major subsections addressing: (a) the relationship of tutoring in urban education settings and student achievement, (b) the relationship of tutoring in urban education settings, and student achievement for English learners (EL), (c) the relationship of tutoring in urban education settings and student achievement for exceptional student education (ESE) students, and (d) the relationship of tutoring delivery models and student achievement.

The Relationship of Tutoring Programs in Urban Education Settings

According to Payne (2003), when there is only one parent in the home, the amount of time and energy to focus on essential skills, such as reasoning, shortens due to a focus on earning money to provide the necessities for the family. The higher the level of parental education reduces the likelihood of children living in a low-income family. Jiang, Ekono, and Skinner (2014) reported that 30% of children who had at least one parent with some college or additional education, and 85% of children whose parents have less than a high school education was classified as low-income families. Children who live in low-income families are exposed to more situations and stress than those of their peers from higher income families who are not

subject to experience and are more likely to encounter mental, physical, and educational problems (Wadsworth et al., 2008). Students in urban environments are more like to present an academic challenge due to their background characteristics, which causes a decline in success as an adult (National Center for Education Statistics [NCES], 1996) and adds to the cycle of poverty. Public schools in urban environments need to reinforce classroom instruction and student support in efforts to bridge the gap.

Increasing investments and resources in public education, specifically among low-income students, can create exponential growth in student achievement (Carey, 2002). Students who come from poverty tend to only receive intervention that is provided from the school (Payne, 2003b). Milner, Murray, Farinde, and Delal-O'Connor (2015), expressed their concern that students served in urban communities are frequently underserved because of misconceptions created by the educational system regarding these students, families, and communities. According to Carey (2002), their more affluent peers outperform children who live in low-income families in areas such as test scores, graduation rates, and college enrollment.

Public schools, including those in urban environments, who receive Title I funding have been required to provide supplemental education services, and this has generally taken the form of tutoring. Based on current research studies conducted across the nation, students have not exhibited any significant gains from providing SES tutoring (Lewis, 2006; Munoz et al., 2012). Slavin (1999) declared although there is little evidence to demonstrate gains from the implementation of SES tutoring programs, there continues to be literature supporting tutoring as an effective method to increase student achievement. Springer et al. (2014) examined the effect of supplemental education services (SES) on student test score gains and focused on specific

subgroups who benefited from participation in SES services, examining 17 elementary and middle schools that were required to provide SES services for some portion of a five-year span. The researchers found consistently significant effects between SES and test gain scores in mathematics and insignificant results for those who participated in reading. Springer et al. (2014) found female students and students with disabilities to benefit from SES most consistently. They also determined that after-school programs to include tutoring continues to be a popular trend to increase educational opportunities within the public-school sector. Overall, Springer et al. (2014) believed that school leaders should consider effective tutoring practices that lead to student achievement in urban schools.

Effective Tutoring Practices

School principals and educators must be proactive and understand different delivery models of tutoring and their effect on student achievement in order to address student needs purposively (Chappell, Arnold, Nunnery, & Grant, 2015). According to Saint Paul Public Schools Foundation (2011), the initial stage of a successful tutoring program was establishing a viable organizational structure to include the program's purpose and mission statement. Utilizing a well-organized purpose and mission statement designs a foundation for an intentional program to focus on goals to increase student achievement (Saint Paul, 2011). As early as 1982, Cohen et al. wrote that educators should implement a structured tutoring program to avoid the generic homework help or drill-and-practice tutoring because the generic forms of tutoring had been shown to provide little to no assistance on improving student achievement.

Researchers have found that strong relationships between tutors and students establish the foundation for a successful tutoring program (Gordon, 2009; Rothman & Henderson, 2011; Saint Paul, 2011). Rothman and Henderson (2011) found that students who were considered borderline proficient and participated in school-based tutoring outperformed students who were borderline proficient and did not participate in tutoring on state assessment in mathematics and language arts. The researchers attributed student success to positive teacher-student relationships and establishing an environment of confidence for the students (Rothman & Henderson, 2011).

The most significant results of student achievement, as noted by Gordon (2009), have occurred when providing a highly-qualified tutor. The Saint Paul Public Schools Foundation (2011), reported that the key to their successful tutoring program was concentrating on building an effective team of tutors. A quality team should be created through intentional recruiting, training, and continued professional development to ensure skills are being developed to build their understanding of working with youth (Saint Paul, 2011). The Foundation found that programs that focused on tutor preparation demonstrated more success than programs that did not provide preparation for tutors. Gordon (2009) discussed the importance of additional time, observing that Finnish tutors were trained for an additional year, specializing on methods and content to make them a highly-trained tutor. Cohen et al. (1982) concluded that tutoring programs not only have a positive effect on student achievement but can also improve student attitudes toward school, because with tutoring support, students are more successful in their classes.

Rothman and Henderson (2011) claimed school district teachers were more effective than an outside agency in conducting tutoring sessions. This was due to an understanding of the

curriculum and the ability to form a stronger bond with students, seeing them throughout the day and reminding them the importance of attending; and it demonstrated a sense of investment and care for the whole child. In the Rothman and Henderson study, teachers were instructed to send the message that the students were selected to participate in tutoring because they were the group of students who were most likely to pass the state assessment with some additional tutoring. Tutors in this study displayed a sense of confidence in students' ability to perform on the state assessment, providing motivation and serving as a confidence booster for students. Rothman and Henderson (2011) believed that school leaders should establish the mission, vision and goals of their tutoring programs, provide supports and professional development in order to provide highly-qualified tutors, and create a positive and supported environment for their students in their afterschool programs.

Effective Tutoring Programs in Urban Setting

The Saint Paul Foundation (2011) posited that students and families who feel and believe diversity is a crucial resource would be more willing to participate in their own learning and that establishing an effective tutoring program in an urban environment should begin with qualified instructors who have an understanding of how to incorporate culturally proficient strategies to reach all learners is key. The Foundation believed that recognizing tutors who are sensitive to cultural differences was critical and that continuing to build their competency to work with diverse students would increase support for them. Cobb (1998) identified the need for a supportive environment as the foundation of an effective tutoring program in an urban setting. Instilling a role model while conducting tutoring can promote academic success for students in

urban environments. Students who have found their way out of poverty tend to be grateful for a specific individual or group of individuals who believe in them and encourage them to strive for success. Students who are considered to be in poverty are strongly impacted by positive relationships that motivate them to be successful (Payne, 2003a). Creating positive social interactions in tutoring provides the foundational support students in urban environments need as well as support they value.

Students in urban environments may not be exposed to a full understanding of the educational progression nor receive support at home with learning strategies to support the academic process (Cole, 2008). Students served in urban environments often times face struggles encompassed with poverty and have limited parental support but are not less capable or intelligent than students served in suburban areas (Payne, 2003a). In the study conducted by Munoz, Chang, and Ross (2012), effective tutoring programs for low- achieving or at-risk students included three major components: (a) one-to-one or small group tutoring structure; (b) systematic tutoring training; and (c) continued program monitoring. In order to provide a meaningful session, it is important for the tutor to collect ongoing data in order to plan their upcoming instructional tutoring session focused on individualized needs of the students (Green, Alderman, & Liechty, 2004; Munoz et al., 2012). Therefore, the obstacles urban students face require strategic planning and monitoring of best interventions to provide effective support for learning.

Another researcher, Barley et al. (2002), organized 118 studies into six categories of classroom approaches: general instruction, cognitively oriented instruction, grouping structures, tutoring, peer tutoring, and computer-assisted instruction. The researchers delved deeper into

tutoring by categorizing the 23 studies into three categories: professional tutoring, volunteer tutoring, and student tutoring. Barley et al. (2002), suggested that regardless of the tutor's level, there continued to be a positive effect on student achievement; however, the researchers believed it to be necessary to have training for tutors and a variation of a diagnostics to determine the strengths and weaknesses of each student in order to establish the best teaching method to address student needs. Effective tutoring models provide professional development to expand the tutors' ability to meet the needs of students served in urban environments.

In the synthesis of effective programs for struggling readers, Slavin, Lake, Davis & Madden (2011) reviewed 97 studies that utilized one-to-one tutoring, small group tutorials, classroom instructional process approaches, and computer-assisted instruction. Slavin et al. concluded that educators should focus on classroom instructional process programs and utilize one-on-one tutoring as the next stage of intervention. They believed that for all students, and particularly for low achievers in urban schools, it was important to first focus on the core instruction occurring within the classroom. In addition, they saw engaging intervention programs as providing foundational skills to fill in the gaps that may occur. One-to-one tutoring conducted by classroom teachers utilizing Reading Recovery and other targeted reading intervention programs yielded a mean effect size of .56 (Slavin et al., 2011). Slavin et al. believed that schools should implement strategies and programs with proven effect sizes in urban environments to provide the most effective tutoring program.

Students who participated in the study conducted by Rothman & Henderson (2011) displayed positive results in both mathematics and language arts utilizing a test prep curriculum which was designed to be an extension of the classroom. Creating opportunities for previewing

or extending instruction can increase confidence for students who are at risk. Fashola (1998) supported the provision of qualified instructors who were familiar with the material and could be held accountable for the outcome when utilizing curriculum connected to the school.

After-school tutoring programs among urban schools vary based on the purpose outlined by the school leader, funding available, and quality of the program being implemented. However, they all face the same challenges in determining how they will meet the needs of their students. Fashola (1998), summarized that in order to provide an effective after-school program in an urban setting one must provide a well-trained staff, create a structured program, involve children and families in the planning process, and establish methods to evaluate the program. Table 4 contains a summary of the literature reviewed related to effective tutoring practices.

Table 4

Summary of Literature Reviewed: Effective Tutoring Practices

Effective Tutoring Summaries	Authors
Urban Setting Challenges	
Urban students face unique challenges socially and academically due to uncontrollable factors.	Carey (2002); Jiang, Ekono, & Skinner (2014); Lewis (2006); Milner, Murray, Farinde, & Delal-O'Connor (2015); Munoz, Chang, & Ross (2012; National Center for Educational Statistics (1996) Payne (2003a); Slavin (1999); Springer, Pepper, & Ghosh-Dastidar (2014). Wadsworth, Raviv, Reinhard, Wolff, Santiago, & Einhorn (2008)
Effective Practices	
Public schools consider successful tutoring practices to provide effective tutoring programs and increase student achievement.	Chappell, Arnold, Nunnery, & Grant (2015); Cobb (1998); Cole (2008); Cohen, Kulik, & Kulik (1982); Fashola (1998); Gordon (2009); Payne (2003a); Rothman & Henderson (2011); Saint Paul Public Schools Foundation (2011).
Effective Programs	
Programs that consider students' social and academic abilities in supports to close achievement gap.	Barley, Lauer, Arens, Apthorp, Englert, Snow, & Akiba (2002); Green, Alderman, & Liechty (2014); Munoz, Chang, & Ross (2012); Saint Paul Public School Foundation (2011); Slavin, Lake, Davis, & Madden (2011)

The Relationship of Tutoring for Exceptional Education Students

It is critical for school leaders and educators to abide by the laws that have been established to provide students with disabilities access to a free and appropriate public education. The Individuals with Disabilities Education Act (IDEA) ensures a free and appropriate public education for children ages 3-21, providing funding to schools to assist with the extra costs endured when educating a student with special needs. Additionally, the law provides parents and students the right to: (a) evaluations to be conducted in a timely manner; (b) attend all meetings in discussing the child's education; and (c) individualized transition planning. The Elementary and Secondary Act (ESEA) passed in 1965 was enhanced in 2001 at which time it became known as No Child Left Behind Act (NCLB), and it was again reauthorized in 2015 as The Every Student Succeeds Act (ESSA). Similar to NCLB, ESSA protect all students, including those with special needs, in holding schools accountable for providing rigorous standards and measures to report student achievement. ESSA require states to monitor all students' performance in both reading and mathematics in order to report progress made by students in specific groups, including those served in exceptional student education. With the standards held equally high for students with disabilities to achieve success, school leaders must consider best practices to serve their students with disabilities in reaching their goals.

Academic and social challenges increase for students with disabilities as the expectations grow higher in their academic careers. Maheady, Sacca and Harper (1988) identified five significant challenges students with disabilities display in school: (a) deficits in basic skills such as reading and mathematics; (b) limited content in specific areas such as science and social studies; (c) scarce independent functioning skills, such as note taking or study skills; (d) lack of

interest and motivation for academics; and (e) poor interpersonal skills (p. 52). All educators, including tutors working with students with disabilities, should consider the individual student's needs when deciding upon the intervention or strategy for instruction.

Given the increases in expectations combined with individual student need, school leaders face a severe challenge in providing interventions to support all student achievement. According to Harper and Maheady (2007), though students with learning disabilities require high quality instruction, it should not differ significantly from instruction given to any struggling learner. There is limited literature that focuses directly on after-school tutoring programs specifically identifying those served in an exceptional student education program; however, there is literature supporting the use of peer-tutoring, best practices or strategies for educating students with disabilities, and preparation for instructors of students with disabilities. The literature identified should be considered by school leaders when initiating an after-school tutoring program in order to provide the proper interventions and supports for students with disabilities and prepare effective tutors to facilitate success.

Effective Tutoring Strategies for ESE Students

A highly-qualified tutor understands not every strategy is equally effective for all students, and one strategy will not work for all learners; therefore, tutoring must focus on the impact the strategy has on student achievement (Harper & Maheady, 2007). ESE students require effective strategies and accommodations in order to receive a free and appropriate public education. Best practices identified for instructing ESE students should be considered when tutoring students with special needs, as the individual need of the student should drive the

instruction provided in a tutoring session. Therefore, tutors should be prepared and capable of utilizing a multitude of strategies in order to develop a meaningful course of instruction to assist ESE students in gaining a full understanding of the content provided.

Similar to all struggling learners, ESE students require effective instruction by their teachers. Effective instruction includes the use of modeling, guided practice, strategy of explicit instruction, independent practice, monitoring of achievement, and avoiding misconceptions or possible misunderstandings (Maccini & Gagnon, 2000). The strategy of effective wait-time or response rate should be considered when tutoring students with disabilities. Harper and Maheady (2007), reported students with learning disabilities need the opportunity to process the information and be provided with enough time to share their answers. Often times, even in small group settings, non-disabled students tend to drive the response rate, and this does not allow adequate processing time for all learners. Utilizing strategies that allow for an increased rate of student responding, provides immediate feedback, and allows students to correct their errors immediately have proven to be an effective for students with disabilities to show an increase of performance (Harper & Maheady, 2007).

Effective strategies to assist students with disabilities in mathematics are the proper use of manipulatives and real-world situations. These strategies allow students to generalize and make connections to the instruction, enabling students with disabilities to visualize the tasks they are completing (Maccini & Gagnon, 2000). Maccini and Gagnon (2000) found manipulatives are effective for students with disabilities to provide the appropriate answer but once the student is able to complete the task with manipulatives, it is important for educators to provide an alternative to the concrete manipulative. Doing so will ensure that students develop the

conceptual understanding and that they are not reliant upon the manipulatives in state assessments (Maccini & Gagnon, 2000).

In conducting tutoring sessions instructing students with disabilities, Gordon (2009) stated that it is crucial for tutors to display a diagnostic tutoring approach in order to assess the skills learned each session. If tutors conduct accurate observations, according to Gordon, they are better equipped to discover misconceptions or cognitive processing issues, allowing them to provide the appropriate supports. Continuous monitoring of the students' responses to the interventions provided in tutoring allows tutors to assess the effectiveness of the instruction and make informed decisions about next steps of support.

According to Hock et al. (2001a), students with disabilities must develop independent proficiency through strategic tutoring in order for tutoring to be effective. Tutoring cannot rely solely on assignment assistance but must require students to interact with strategies to display a long-term effect. Strategic tutoring does focus on the immediate support for academics while infusing long-term strategies to support students in performing independently (Hock, Schumaker, & Deshler, 2001b). The data collected from the tutoring fidelity checklist used by Hock et al. (2001a) showed that in most cases tutors were modeling the key effective strategies through their tutoring sessions. However, there were cases where tutors did not incorporate any of the key strategies, making it difficult to determine if an increase in the quality of tutoring would have positively affected the students' performance (Hock et al., 2001a).

Tutors should consider opportunities for students who may not require tutoring to participate in their sessions in order to utilize fluency and appropriate role models for students with disabilities. Heron, Welsch, and Goddard (2003) found utilizing class wide peer tutoring

and cross-age tutoring was not only an effective model for students with disabilities but was also a low-cost strategy to providing support for struggling learners. The researchers found that class wide peer tutoring increased students' performance more than did the traditional teacher-led instruction; and cross-age tutoring was shown to improve appropriate social interactions for students with disabilities. School age students who were entrusted to tutors tended to enjoy being in the role of the teacher and benefited socially and academically from the interaction (Heron et al., 2003).

In general, students who are at-risk, or served in an ESE program based on behaviors, have generally been found to desire to have a better relationship with their teachers. Tutors who serve ESE students must understand that these students may have been struggling academically for several years and be acting out due to task-avoidance.

Preparation for Tutors with ESE Students

In a 2013 study, McLurkin found that tutors with limited experience held unrealistic expectations for students and soon were defeated due to their lack of expertise regarding strategies to improve the students' success. Successful tutoring, according to McLurkin (2013), begins with proper professional development of those tutoring students with disabilities to develop an understanding of how they can best meet the needs of their students.

Selecting the best candidate to tutor ESE students can be challenging; however, in order to have an effective program, a school should consider the abilities and knowledge one holds in serving ESE students. Ultimately, school leaders should utilize their most experienced teachers to tutor students with disabilities and provide specific training for tutoring students with special

needs. McLurkin (2013) suggested schools should first consider those with professional experience or training in teaching students with disabilities. If unsuccessful, they could advertise for retired ESE or reading teachers who understand the challenges faced in providing interventions for ESE students. Other options would be for schools to contact local universities and to recruit tutors from undergraduate and graduate colleges of education (McLurkin, 2013).

Slavin et al. (2011) did not believe paraprofessionals or volunteers were as effective as classroom teachers and advised all educators to consider the supports or inventions they assigned to their paraprofessionals or volunteers to assist students with disabilities. The reality school leaders face, however, is that there is a limited number of highly-qualified educators willing to provide after-school tutoring. Therefore, the majority of those tutoring ESE students are often preservice teachers, paraprofessionals or volunteers with limited training in tutoring ESE students (Cobb & Allen, 2004). Proper instruction in tutoring has been shown to be effective for ESE students. As a result, tutoring coordinators or directors have been held responsible in providing supports to aid student achievement. Effective tutors, however, require actionable feedback to ensure they are providing research based practices in tutoring sessions. Cobb and Allen (2004) recommended monitoring tutoring using a tool to measure the effectiveness of the practices being provided. Specifically, they recommended the use of The Volunteer Tutor Instructional Practices Checklist (V-TIPC). This tool can be used to conduct one observation to provide feedback or can be used to measure the growth of the tutor over a period of time (Cobb & Allen, 2004). The use of a fidelity tool allows tutoring coordinators or directors to provide specific feedback in providing practices and strategies proven to be effective for ESE students.

Students who are served in an exceptional student education program require the creation of an Individual Education Plan (IEP) identifying needs, strengths, measurable goals, and accommodations in place to assist the student in reaching success. Tutors should work with school staff and the tutees' families to gather specific information regarding the students' deficits, specific goals, and accommodations used in the educational setting to provide support in students' learning (McLurkin, 2013). Information tutors gather regarding their ESE students will increase their confidence and ability to meet students' individual needs. Having background knowledge of students will reduce time in determining what strategies are inappropriate and provide more time to delve into the content with the proper supports in place. Tutors working with students with disabilities need to know what to instruct during their sessions and how to teach struggling learners (Sayeski, Gormley Budin, & Bennett, 2015). Highly effective tutors identify themselves as detectives of learning or coaches and do not identify themselves as helpers who simply assist with homework or drill in test prep strategies (Gordon, 2009). Table 5 contains a summary of the literature reviewed related to the tutoring of ESE students.

Table 5

Summary of Literature Reviewed: Tutoring of Exceptional Student Education (ESE) Students

Effective ESE Tutoring Summaries	Authors
Protections and expectations for ESE students	
ESE students have equal access to a free and appropriate education. Increased expectations require additional supports.	ESEA (); Harper & Maheady (2007); IDEA (); NCLB (2001); Maheady, Sacca, & Harper (2007).
Effective Tutoring Practices for ESE Students	
A variety of effective tutoring practices for ESE students exists. School leaders should monitor these practices to increase student achievement for ESE students.	Harper & Maheady (2007); Heron, Welsch & Goddard (2003); Hock, Pulver, Deshler, & Schumaker (2001); Hock, Schumaker, & Deshler (2001b); Maccini & Gagnoon (2000).
Preparation for ESE Tutors	
Student tutors should be properly trained and have a full understanding on how to best instruct ESE students.	Cobb& Allen (2004); Gordon (2009); McLurkin (2013); Sayeski, Gormley, Budin, & Bennett (2015); Slavin, Lake, Davis, & Madden (2011).

The Relationship of Tutoring for English Learners (EL)

Over the last several decades' public education has been designed to meet the needs of all students. A court case, Lau v. Nichols, was based on 1,800 students of Chinese ancestry being denied supplemental courses to address their language barriers. This case started as a class action suit but was denied in both District Court and the Courts of Appeals. The U.S. Supreme

Court issued a ruling based on the Civil Rights Act of 1964 which prohibits discrimination based on race, color, or national origin. The landmark case, Lau v. Nichols, led states to create laws protecting the rights of Limited English proficient students across the nation (Lau v. Nichols, 1974). In 1990, Florida courts signed an agreement to enforce The Florida Consent Decree protecting students whose native language was not English and ensuring they receive equal access to public education. Florida Statute 1003.56 stated that instruction must be provided for Limited English proficient students focusing in the areas of listening, speaking, reading, and writing. Limited English proficient students are those (a) who were not born in the United States and native language is not English, (b) whose language spoken in the home is other than English, and (c) who are American Indian or Alaskan native whose environment has had severe impact on English. Florida school districts are required to ensure appropriate strategies are used to instruct English for Speakers of Other Languages. Florida school districts must (a) develop and submit a plan to instruct students with limited English, (b) utilize assessments to identify students, (c) provide a plan to monitor if a student should be exited or reclassified in the program, (d) implement ESOL instruction, (e) uphold and maintain the students plan, (f) provide qualified teachers, (g) provide equal access to all educational programs for limited proficient students, and (h) involve parents in decision making regarding the students educational needs (Fla. Stat. § 1003.56).

A review of 2013 NCES data indicated 70% of English learners were classified below basic in reading and 69% were below basic in mathematics. Compared to students who were not classified as EL, 20% were below basic in reading and 24% were below basic in mathematics. Furthermore, only 4% of ELs in the nation were at or above proficiency in reading, and 5% were

at or above proficiency in mathematics (NCES, 2013). These statistics identify a major concern in educating English learners. There are more than five million ELs across the nation's schools, but there has been limited research conducted regarding how best to meet the needs of these students and few recommendations as to how school officials can support the needs of ELs in poverty (Gandara & Santibanez, 2016). School leaders are faced with the challenge of providing interventions during and after school in attempts to close the achievement gap. In addition, interventions during the school day and after-school tutoring programs are implemented with the intent to close the achievement gap. It is critical for school leaders to identify effective tutoring programs to ensure they are meeting the needs of the ELs and increasing their academic achievement.

Effective Tutoring Strategies for English Learners (EL)

The 21st century Common Core standards are much more complex than past standards and require students to acquire rigorous academic literacy skills. Therefore, more than ever, ELs require additional supports in place to improve student achievement. Goldenberg (2013) identified three underlying bases for supporting ELs academically: (a) if practice is effective for the majority of students, it is likely to be effective for ELs; (b) ELs require additional instructional supports in order to be successful; and (c) the integration of ELs' home languages can promote academic development (p. 5).

Goldenberg (2013) reinforced practices that have been effective for all learners but stressed that the importance of these strategies is magnified in the success of ELs. One practice is establishing clear goals, objectives, instructions and routines in order to set the foundation for

ELs to be successful. Once established, connecting instruction to the students' prior knowledge and providing ELs crucial background knowledge provides a contextual understanding designed to learn more efficiently (Goldenberg, 2013). For example, when introducing new vocabulary, it is critical for educators to make connections to the vocabulary so that ELs fully grasp the context both orally and visually (Loschky, 1994; Samson & Collins, 2012).

Goldenberg (2013) continued by identifying the benefit of using graphic organizers such as tables or Venn diagrams to provide support for ELs to organize their thoughts in order to process the content completely. Instruction should be chunked into digestible bites to allow processing for ELs. Graphic organizers can assist in identifying critical breaks in instruction, pinpointing crucial information on which to focus in order to help students progress. Marzano & Simms (2013) also noted the importance of segmented instruction by emphasizing the need to allow a sufficient amount of time for ELs to process the instruction.

Goldenberg (2013) suggested modeling the skill or procedure for the student and providing timely informative feedback to quickly reinforce the skill being taught. Hill and Flynn (2006) observed that feedback should be timely, corrective, criterion-referenced, and allow for student to reflect on the practices. Utilizing hands-on tasks allows ELs to interact with the material and provides visuals or demonstrations to reinforce the content being taught. Finally, as advocated by Goldenberg, assessments should be given frequently to measure the level of understanding with the intent to provide re-teaching as needed. Although these practices are beneficial for all learners, the practices are critical for ELs to develop strong academic skills in their grade-level academics.

Tutors of ELs should understand differentiated instruction is needed to develop both oral and written language development. Utilizing differentiated instruction as an intervention allows sufficient time and opportunity for English learners to address their individual goals set for them (Chirchick, 2009; Coleman & Goldenberg, 2010). Goldenberg (2013) supported the provision of additional time to practice and discuss concepts so as to clear up any misconceptions students may develop regarding content.

ELs require explicit instruction of techniques to support academic grammar they will encounter in the educational setting (Coleman & Goldenberg, 2010; Samson & Collins, 2012). Explicit instruction includes clearly stated goals, clear expectations, modeling, frequent practice requiring the students to work independently prior to closing with a summary of the instruction. Instructors should provide opportunity for ELs to interact with the material through conversation, allowing for open-ended questions that require them to formulate responses utilizing academic language (Coleman & Goldenberg, 2010).

The use of the home language has been proven effective to support ELs' academic development, but this simply means providing additional clarification in the home language. Instructors should intend for the majority of the content to be presented in English while supporting the content with statements in their home language. Providing cognates, brief explanations, and previewing lesson concepts in their home language can reinforce their ability to process the new information (Goldenberg, 2013). Providing instruction solely in English may create misconceptions of what students can do independently, and this may hinder students' progress academically. Determining where students are academically through assessment in

their home language will provide a foundational level for the appropriate level of support needed (Coleman & Goldenberg, 2010).

English learner students face a larger challenge when working with higher level tasks such as reading comprehension. ELs should be provided with challenging materials with clear instructions and the appropriate level of support to process any skill in order to have the most impact on student achievement (Coleman & Goldenberg, 2010; Goldenberg, 2013). Generally, the intervention programs utilized for English learners do not challenge their skills to the rigor of a grade level standard. Therefore, a strategic after-school curriculum should be utilized to ensure ELs are exposed to grade-level acquisition skills they need to be successful (Chirchick, 2009).

Samson & Collins (2012) stressed the need for support in the development of oral language to build ELs' capacity to converse academically and understand the content entirely. It is difficult to practice oral fluency with rigorous grade level passages, but oral fluency is a necessary skill for English learners. Exposing ELs to grade-level text while practicing oral fluency on a consistent basis allows for preparation of adequate instruction. Chirchick (2009), found the use of a rigorous fluency instruction can be reinforced by applying skills to a passage from a text used in class. Originally researchers were concerned that ELs would feel resentment if they were asked to read the same passage over and over, but to the contrary, ELs appreciated using the same text as they were able to move past decoding in order to focus on the comprehension of grade-level text (Chirchick, 2009). Allowing for students to feel success academically proved to be useful in furthering their motivation to struggle through the learning of grade-level instruction and a new language.

Preparation for Tutors of English Learners (EL)

Samson and Collins wrote in 2012 that the English learner population had increased 51% from 1997 to 2009 in the nation's public schools, yet the number of educators adequately prepared with sufficient knowledge on best practices to support ELs needs continued to be limited. Preparation for future educators has differed from state to state, and few preparation programs have delved into the pedagogy of teaching English learners. Educators lacking the proper preparation and development of best practices for instructing English learners cannot adequately meet the needs of these students. Samson and Collins acknowledged that the development of requirements for teachers to receive professional development for instructing ELs has been a positive step, the professional development provided is not enough to provide success for all educators instructing English learners. Educators state the most effective professional development for instructing ELs consists of modeling or side by side coaching during the classroom setting, followed by mock practices of best techniques and live coaching for improvements (Calderon, Slavin, & Sanchez, 2011).

Goldenberg (2013) recognized the need for high quality educators to utilize research based strategies to ensure the strategies meet the needs of English learners. First, tutors should collaborate with the classroom teachers to gather a full understanding of the students' abilities and replicate as many of the strategies or processes working within their classes during tutoring sessions (Samson & Collins, 2012). Goldenberg stated that similar to educators, tutors should discuss the content with colleagues to gather a full understanding of the standard or skill being taught and develop a plan of instruction to encompass a well-planned lesson. Tutors should be taught to review work samples to monitor the effectiveness of instruction being provided, to

analyze the data collected to determine what is working, and possess the knowledge to readjust instruction when necessary (Goldenberg, 2013).

Calderon et al. (2011) identified eight strategies that should be explicitly taught to those instructing ELs: (a) enhanced instruction beginning with planning, (b) engagement strategies, (c) developmental skills for oral language, (d) fluency skills for vocabulary, (e) skills to develop literacy, (f) how to involve parental support, (g) supporting reading comprehension, (h) and reflective practices through portfolios (p. 114). School leaders should reflect on how they plan to provide support and development for tutors and educators to reinforce the instruction being provided in the classroom. These researchers found a well-trained tutor, supervised paraprofessional, or a structured program can be an effective model for ELs to increase phonetic skills to properly support grade-level academics.

Two variables highly impacting an English learner are their linguistic and cultural diversity; and until these diversities are addressed, the gap will remain (Jong & Harper, 2005). When choosing tutors of ELs, a school leader needs to ensure the tutor values cultural diversity. Educators must be aware of the cultural differences among ELs and be prepared to understand and accept the differences. Jong and Harper (2005) expressed the belief that educators working with English learners should hold high expectations and provide positive attitudes toward the needs of English learners. They should not expedite the assumption of combining EL needs with those of students with special needs or a lack of motivation for academics. Learning a new language and moving to a new country can be traumatic for some, and educators should be sensitive to the struggles being displayed. An effective educator can draw conclusions and provide strategies to positively influence an EL towards a deeper drive for knowledge (Jong &

Harper, 2005). In addition, connecting parental involvement to tutoring sessions through letters or newsletters updating parents of the supports being provided can provide a well-rounded support for ELs (Samson & Collins, 2012).

Effective changes in instruction must occur to meet the needs of ELs. An educator should have a specific understanding of the process involved in learning a second language prior to instructing ELs (Jong & Harper, 2005). State and federal law reinforces interventions and supports in the classroom, but researchers have shared that there continues to be a need to provide additional professional development to ensure educators grasp a full understanding of how to best meet the needs of their ELs. After-school tutoring has been an intervention put in place for all learners including English language learners. After-school tutoring tends to support the typical academic need for all struggling learners. Therefore, school leaders should consider areas where tutors require support with hopes of developing an after-school tutoring program that provides effective support for English learners. Table 6 contains a summary of the literature reviewed related to the tutoring of English learners.

Table 6

Summary of Literature Reviewed: Tutoring of English Learners (EL)

Effective Tutoring Summaries	Authors
Protections and expectations for education of ELs	
ELs have equal access to education which is protected by federal law. With a growing EL population school leaders must consider how to best support their needs.	Florida Statute § 1003.56; Gandara & Santibanez (2016); Lau v. Nichols, 414 U.S. 563 (1974); National Center for Educational Statistics (2013).
Effective practices for Els	
There are a variety of tutoring practices that are effective for ELs. School leaders should monitor these practices to increase achievement for all students.	Coleman & Goldenberg (2010); Chirchick (2009); Goldenberg (2010); Hill & Flynn (2006); Loschky (1994); Samson & Collins (2012).
EL tutor preparation	
Due to the linguistic and cultural challenges of instructing ELs, tutors should be prepared and have full understanding on how to best meet EL needs.	Calderon, Slavin, & Sanchez (2011); Goldenberg (2013); Jong & Harper (2005); Samson & Collins (2012).

The Relationship of Tutoring Delivery Models and Student Achievement

Researchers have tended to support after-school tutoring as a moderately effective intervention to increase student achievement (Powell, 1997). After-school tutoring programs range in effectiveness for several reasons including the fidelity of implementation, time provided, student attendance or motivation, and teacher quality. The meta-analysis conducted by

Cohen et al. (1982) indicated that students who participated in effective tutoring programs outperformed those who did not attend tutoring on assessments. The meta-analysis also revealed that structured programs displayed much higher effect sizes compared to unstructured programs. The findings in the meta-analysis conducted by Cohen et al. (1982) emphasized the importance of seeking effective tutoring delivery models to support student achievement.

Tutoring delivery models differ in format, curriculum, and personnel. This review of literature was focused on the following tutoring delivery models: one-on-one tutoring and small group tutoring; tutoring, strategic tutoring, peer tutoring and homework help; and tutoring provided by certified teachers and volunteers. School leaders in public schools must consider their students' need and determine an effective after-school tutoring model to support student achievement within their school.

Effective Tutoring Delivery Models

Tutoring can address both academic and emotional skills by using strategies and techniques that interest students. Tutoring should begin where students are successful and continue to build on their skills to increase their success, adjusting the ratio of tutoring based on student need. The preparation and support required for effective tutoring varies based on the vision of the after-school tutoring program.

One-on-One Tutoring

In their meta-analysis, Elbaum, Vaughn, Hughes, & Moody (2000) suggested that appropriately implemented one-to-one tutoring can provide a significant impact for students who struggle with reading. Cobb and Allen (2004) recognized the reality that if a student requires

one-on-one tutoring, it would be most effectively provided by a highly-qualified teacher; however, time often only permits these interactions from a volunteer, college student, or a para-professional. The researchers determined that one-on-one tutoring was most effective for struggling learners. If, however, certified teachers were not able to provide the tutoring, a tool should be utilized by educators to monitor and provide feedback for one-on-one tutors to improve practices and have a positive effect on student achievement. Elbaum et al. (2000) had earlier recognized that the level of support may need to be increased to train effective volunteers and college students in order to provide one-on-one tutoring for a large population of students who could benefit from the intervention.

Small Group Tutoring

In the study conducted by Pinnell, Lyons, DeFord, Bryk, and Seltzer (1994), researchers compared one-on-one tutoring with a small group tutoring interaction of two to six students and found no significant advantage of one-on-one over small group tutoring. The findings indicated that when a highly-qualified teacher provided research based strategies in a small group setting, it could yield the same benefits as one-on-one tutoring (Pinnell et al. (1994). Small group instruction is an effective intervention that can be emphasized strategically in after-school tutoring programs. Lou et al. (1996) indicated a small group had the largest effect when there were no more than three or four students in the group, and that an insignificant effect occurred for small groups ranging from six to 10 when compared to those served in a whole group of 11 or more students. These researchers found that (a) small group tutoring promoted interdependent learning which has been found to increase student achievement and (b) low-achieving students benefited most from mixed-ability grouping but mid-achieving students benefited most from

homogenous grouping. Providing differentiated interaction between small groups allowed for the tutor to focus on specific skills for individual students (Lou et al., 1996).

Computer Based Tutoring

There has been a significant increase in the use of programs for intervention in the nation's public schools. Public schools providing tutoring as an intervention may select the use of a computer-based, after-school tutoring program. School leaders need, however, to review programs to determine their strengths and weakness and whether they are appropriate interventions to meet the needs of their students attending tutoring.

Slavin et al. (2011) supported computer-based classroom interventions such as *Reading Recovery*, noting they provided a strong effect size in filling in achievement gaps. Vasquez (2008) found the use of synchronous online technology had a significant effect on student outcomes. He described tutoring as an ample opportunity to provide one-to-one tutoring to a larger number of students and maximize the impact of tutoring on school wide student achievement.

Ke (2012) found a computer-game-based program for tutoring mathematics was an effective intervention to improve students' state test performance. When utilized in another school, however, the program did not display significant effects. Ke attributed the insignificant results based on a larger group participating in tutoring which caused for more socializing and less interaction with the computer game. When computers are being utilized for tutoring, it is important for the tutor to implement classroom management skills to ensure all students are receiving the proper intervention. In interviewing participants receiving intervention through the computer-based program, Ke found the majority to be entertained and engaged in the program.

He found that the use of interactive computer programs could provide engaging strategies to promote foundational skills for struggling students. Also, participants interacted with the instruction to tackle the goals needed in the game.

Strategic Tutoring

Tutoring programs required structure of specific curriculum in order to be effective. Wasik (1998) identified basic elements needed when creating a structured program to remediate reading such as reading familiar passages, word analysis, introducing new text, and writing. Allowing students being tutored to read familiar passages provides opportunities to increase fluency and word recognition while focusing on their comprehension of the text. Once a reread text is used, introducing a new text permits students to revisit familiar words while practicing with unfamiliar words. Word analysis strategies should be incorporated to build upon decoding of words and finding connections to familiar words while reading. Finally, Wasik stated that writing is the component that connects the relationship between reading and print, and that writing strategies allow students to essentially practice the print aspect of reading. Cohen et al. (1982) also indicated that structured tutorial programs focused on strategic skills to promote long retrieval of skills provide a higher effect on student achievement than unstructured tutorial programs.

Homework Assistance

In a study conducted by Allen and Chavkin (2004), students who were at risk for failing were provided between 13.5 and 61 hours of tutoring focused on providing assistance for students to pass core subjects in order to be promoted. Students were referred to the program if

they failed a six-week grading period in one of the core subjects. The average final grades for students attending the program increased from 60 to 73 by the end of the year, indicating homework help can be effective to promote support to address specific needs (Allen & Chavkin, 2004). Utilizing generic homework help has demonstrated insignificant effectiveness on sustaining student achievement (Cohen et al., 1982). Therefore, school leaders must identify the main purpose of providing homework help as a form of tutoring to determine if it is effective to meet the needs of their students.

Peer-Tutoring

Educators using peer tutoring can range in providing reciprocal, cross-age, or class-wide peer tutoring. Peer assisted learning strategies (PALS) have been used with increasing frequency in elementary and middle schools as an intervention to increase student achievement. Peer tutoring PAL strategies incorporates different teaching models and relies heavily on peer learning through social interactions between students in the same level of instruction and cross-aged tutoring (Williams & Reddy, 2016). Saenz, Fuchs, & Fuchs (2005) found peer assisted learning to be beneficial for both struggling readers and sufficient readers. They found PALS to have a strong effective on reading comprehension for ELs with and without learning disabilities (Saenz et al., 2005). ELs strive through observing good modeling and discovery through interactions in peer tutoring.

Peer tutoring is an evidence-based practice used in many instructional settings. One problem with peer tutoring is that educators have found it difficult to appropriately group students to ensure provisions are made based on correct or incorrect answers. Wood, Mackie, Norman, & Cooke (2007) identified four technology devices that can promote appropriate

feedback for peer tutoring interactions. Though the use of technology devices requires planning and time of the tutors or educators, it increases effective practice of new skills for struggling learners. The devices consist of an audio recorder, video pod, talking photo album, and a self-recorded PowerPoint (Wood et al., 2007). Wood and colleagues concluded that peer tutoring should be a supplement to whole-group instruction and educators should monitor their students frequently to provide support when needed. It is critical in peer tutoring to identify when students are off task and to promote good use of tutoring (Wood et al., 2007).

Tutoring by Certified Teachers and Volunteers

In the study conducted by Ritter, Barnett, Denny, and Albin (2009), tutoring delivered by volunteers had a positive impact on reading support for participants when compared to students who did not participate in tutoring. However, there was limited research supporting volunteers as tutors regarding the direct impact on high-stakes testing, specifically in mathematics (Ritter et al., 2009). Wasik (1998) and Morris (2006) concurred that if volunteers were utilized in an after-school tutoring program it was critical for a certified reading specialist to coordinate the tutoring program and monitor the implementation. The importance rests on the ability for the reading certified specialist to gather materials to provide quality lesson plans needed for implementation by the volunteer. Reading specialists understand the specific skills and strategies that will best meet the needs of their students and can support a volunteer in the implementation. In addition, the reading specialist can monitor the effectiveness of lessons and provide timely and specific feedback to increase support for the volunteers (Morris, 2006; Wasik, 1998). Wasik concluded the effectiveness of tutoring programs conducted by volunteers would be dramatically reduced if not supervised and supported by highly-qualified specialists.

Allen and Chavkin (2004) identified community volunteers with limited educational background to have a strong impact on tutoring for support in passing academic courses. These researchers found that limited training and support was required for tutors due to the focus of work often being on completing missed assignments to improve the students' grades. Providing an adult to support students towards work completion, in this situation, did positively affect final grades of courses and was thought to have potential in reducing drop-outs (Allen & Chavkin, 2004).

As has been shown in this review of tutoring models, the vision for the tutoring program will determine the level of professional development and support needed for volunteers. Utilizing an instrument such as the Volunteer Tutor Instructional Practices Checklist (V-TIPC) can provide specific feedback for a particular observation or ongoing support to monitor growth (Cobb & Allen, 2004). Volunteers can provide effective tutoring for students to develop academic skills with the proper support and training from the leadership of the school. The use of a tool such as the V-TIPC can provide additional support to improve after-school programs utilizing volunteers. Implementing structured programs delivered by volunteers should be well planned by a knowledgeable educator in order to have a positive impact on student achievement. Challenges are recognized when relying on volunteers to provide strategic tutoring, but with a strong commitment to raise achievement for struggling learners, volunteers can positively impact student achievement through tutoring (Morris, 2006). Table 7 contains a summary of the literature reviewed related to tutoring models and their impact on student achievement.

Table 7

Summary of Literature Reviewed: Tutoring Models and Student Achievement

Effective Tutoring Summaries	Authors
Tutoring groups: One-on-one tutoring and small group	
Group sizes differ based on the needs of the students and available resources.	Cobb & Allen (2004) Elbaum, Vaughn, Hughes, & Moody (2000); Lou, Abrami, Spence, Paulsen, Chambers, & d'Aollonia (1996); Pinnell, Lyons, Deford, Bryk, & Selter (1994).
Tutoring delivery models: Computer-based, strategic tutoring, homework help, & peer tutoring)	
There are a variety of effective tutoring delivery models. Consider the needs of students; determine the vision of support required.	Allen & Chavkin (2004); Cohan, Kulik, & Kulik (1982); Ke (2012); Saenz, Fuchs, & Fuchs (2005); Slavin, Lake, Davis, & Madden (2011); Vazquez (2008); Wasik (1998); William & Reddy (2016); Wood, Mackie, Norman, &Cook (2007).
Effective Tutors: Certified teachers and volunteers	
Resources (i.e., funding/time may limit who delivers services. Consider the model utilized and provide support to assure effective tutors.	Cobb & Allen (2004); Morris (2006); Ritter, Barnett, Denny, & Albin (2009); Wasik (1998).

Summary

The literature review in Chapter 2 established a basis for continuing research on accountability measures for providing effective tutoring in urban schools. The struggles students of poverty face which impact their academic success and require schools to increase the level of support being provided have been discussed. Supplemental education aervices (SES), especially tutoring, when used appropriately were identified as effective measures for support. However, there has been limited research to identify the relationship between frequency of tutoring and its impact on student achievement based on the model of tutoring. The model and implementation of tutoring should be determined by the school team to meet the specific needs of students with the resources available.

The methodology for the current study is delineated in Chapter 3 followed by the analysis of data and interpretation of the results in Chapter 4. A summary and discussion of the findings are presented in Chapter 5. The current study extended the findings of the study completed by Maestre (2014), analyzing data in a middle school setting across three schools using different methods of tutoring with the intent to increase student achievement.

CHAPTER 3
METHODOLOGY

Introduction

The purpose of this study was to determine the relationship between tutoring programs and student achievement on state assessments in Florida. Students in Grades 6 through 8, who were enrolled at three urban middle schools and participated in FSA English Language Arts (ELA) or FSA Mathematics, were examined to determine the impact of school-based tutoring. All three urban middle schools provided a variation of voluntary school tutoring in Fall 2015 and Spring 2016 with the expectation of increasing student performance in mathematics and reading. School A provided certified teachers to facilitate computer-based intervention before school Monday through Friday from 8:30 a.m. to 9:15 a.m. and in addition, after school Monday and Tuesday from 4:00 p.m. to 5:15 p.m. School B provided certified teachers to deliver standards-based small group instruction after school Monday through Friday for a total of one hour each day. Four additional three-hour sessions were added on Saturday mornings leading up to the FSA and EOC assessments. School C provided a certified teacher to deliver small group intervention in combination with computer-based intervention on Monday, Tuesday and Thursday from 4:00 p.m. to 5:15 p.m. Eight additional three-hour sessions were added on Saturday mornings leading up to the FSA and EOC assessments. In this study, the researcher compared student achievement on state assessments of those who participated in school-based tutoring and those who did not participate in school-based tutoring. The study was also conducted to compare the student achievement of participants who were served in the exceptional student education (ESE) program and English learners (EL) who were served in the

English for Speakers of Other Languages (ESOL) program, with the achievement of those like students who did not participate in tutoring. Lastly, the study was conducted to examine the effects of tutoring delivery models, comparing the three urban middle schools.

Causal comparative research was utilized to determine the relationship between student achievement and the frequency of participation in tutoring. Through this study, the researcher intended to contribute knowledge for school leaders to enhance decision making for developing effective school tutoring delivery models to best meet the needs of the student population. In this chapter, the methodology utilized is described and the rationale for the population and sample of this study is provided. Additionally, detailed in this chapter are data sources, methods, and procedures used in the collection and analysis of the data.

Population

The population for this study consisted of 2,822 middle school students in grades 6 through 8 in three urban middle schools in a large urban school district in the Southeastern United States. The three urban middle schools were categorized as Title 1 and 100% of the students in those middle schools received free and reduced lunch in the 2015-2016 school year. The study focused on student accountability on Florida Standards Assessments; therefore, students who participated were assessed utilizing the FSA English Language Arts or FSA Mathematics. Participation in tutoring was voluntary at each of the three middle schools, and all students enrolled had access to attend tutoring sessions.

Sample

Students enrolled at the three target middle schools in courses requiring them to be assessed on a Florida Standards Assessment in English language arts or mathematics created a convenience sample of 2,711 students. Student achievement scores were accessible for all students enrolled in a course utilizing the FSA English Language Arts or FSA Mathematics; ELA 6, ELA 7, ELA 8, mathematics 6, mathematics 7, and Pre-Algebra, as well as their respected honors or advanced courses. Similar to the study conducted by Maestre (2015), the students were divided into two groups: those who participated in tutoring and those who did not participate in tutoring. Students who participated in the exceptional student education (ESE) program and those who participated in the English Speakers of Other Language (ESOL) program were identified and compared against those who were not served in the ESE or ESOL programs. Tutoring at all three middle schools was intended to be initiated by a teacher or parent recommendation. Sessions were, therefore, voluntary and there was no control over the characteristics of those who participated. The school leadership team, including the principal, determined tutoring models within each of the three urban middle schools. The tutors were, however, certified teachers hired to facilitate or deliver tutoring sessions. School A utilized school district approved, computer-based programs to deliver tutoring; School B utilized data based decisions to ensure standards-based, small group instruction occurred; and School C utilized a combination of computer-based intervention and small group instruction as needed to meet each student's needs.

Instrumentation

Attendance records for those who participated in tutoring were collected from each of the three urban middle schools. School archival data for student demographics, EL status, ESE status along assessment data were collected from the school district archives. Attendance records were matched with archival data to identify student achievement of those who attended tutoring and those who did not. Statistical Analysis Software Package (SPSS) was utilized to categorize the data compiled to complete the analysis.

Student achievement data for all students who participated in the FSA Mathematics or FSA English Language Arts were collected. Student achievement scores were matched to tutoring attendance records for those who attended tutoring. Students who were served in an exceptional student education program and English learners who participated in the ESOL program were identified to analyze the data for each subgroup of students. After the implementation of FSA in Spring 2015, a process was utilized for standard setting of achievement level cut scores to provide a valid and reliable determination of student growth on assessments administered in continuous years. In January 2016, Florida Administrative Code Rule 6A-1.09422 identified the achievement level cut scores determined through standard setting and the cut scores for each achievement level on the FSA were adopted by the Florida State Board of Education.

Data Collection Procedures

Quantitative data for this causal comparative study were collected during the 2015-2016 school year. Tutoring attendance records were used to arrive at the frequency of students'

participation in school tutoring programs. The school leadership team identified tutoring practices and programs within each of the three urban middle schools and provided descriptions of those programs.

Collection of Quantitative Data

To meet statewide expectations, school leaders at the target urban middle schools provided a variety of tutoring programs within their schools with the expectation of increasing student achievement over the course of the 2015-2016 school year. Although teachers and parents made recommendations for students to participate in the tutoring program, participation was voluntary. For the purpose of after-school tutoring, transportation home was provided for all students at the three middle schools. However, parents were required to provide transportation in order for students to attend morning tutoring and Saturday tutoring. Tutoring programs were created with the intention of increasing student achievement on state assessments; therefore, all students had access to the scheduled tutoring sessions but attendance for morning tutoring and Saturday tutoring may have been effected by the lack of transportation.

School A provided tutoring before school Monday through Friday from 8:30a.m. to 9:15a.m. and after school Monday and Tuesday from 4:00 p.m. to 5:15p.m. School B provided tutoring after school Monday through Friday for a total of 1 hour. Four additional three-hour sessions were added on Saturday mornings leading up to the administration of the FSA and EOC assessments. School C provided tutoring on Monday, Tuesday and Thursday from 4:00 p.m. to 5:15 p.m., and eight additional 3-hour sessions were added on Saturday mornings leading up to the administration of the FSA and EOC assessments.

School A had a total population of 1,074 students, 871 (83.2%) of whom were assessed by FSA ELA for the 2014-2015 and 2015-2016 school year, 708 (65.9%) of whom were assessed by FSA Mathematics for the 2014-2015 and 2015-2016 school year, 169 (15.7%) students were classified as a student serviced in the exceptional student education (ESE) program and 225 (21.0%) were classified as students served in the English for Speakers of Other Languages (ESOL) program. In total, 93 (8.7%) students participated in at least one session of voluntary tutoring focused on reading and 65 (6.1%) participated in at least one session of voluntary tutoring focused on mathematics during the 2015-2016 school year. School B had a total population of 729 students of which 543 (74.5%) students were assessed by FSA ELA for the 2014-2015 and 2015-2016 school year, 501(68.7%) of whom were assessed by the FSA Mathematics for the 2014-2015 and 2015-2016 school year, 117 (16.0%) students were classified as a student serviced in the exceptional student education (ESE) program and 51 (7.0%) were classified as students served in the English for Speakers of Other Languages (ESOL) program. In total, 114 (15.6%) students participated in at least one session of voluntary tutoring focused on reading and 103 (14.1%) participated in at least one session of voluntary tutoring focused on mathematics during the 2015-2016 school year. School C had a total population of 1019 students of which 880 (86.4%) students were assessed by FSA ELA for the 2014-2015 and 2015-2016 school year, 665 (65.3%) of whom were assessed by FSA Mathematics for the 2014-2015 and 2015-2016 school year, 103 (10.1%) students were classified as a student serviced in the exceptional student education (ESE) program and 147 (14.4%) were classified as students served in the English for Speakers of Other Languages (ESOL) program. In total, 104 (10.2%) students participated in at least one session of voluntary tutoring focused on reading and 119 (11.7%)

participated in at least one session of voluntary tutoring focused on mathematics during the 2015-2016 school year.

In combination, the three urban middle schools had a total population of 2,822 students of which 2294 (81.4%) students were assessed by FSA ELA for the 2014-2015 and 2015-2016 school year, 1874 (66.5%) of whom were assessed by FSA Mathematics for the 2014-2015 and 2015-2016 school year. For the 2015-2016 school year, the three urban middle schools served a total of 389 (13.8%) students in the exceptional student education (ESE) program, and 423 (15.0%) in the English for Speakers of Other Languages (ESOL) program. Of the 389 ESE students served at one of the three urban middle schools, 253 (65.0%) participated in both years' mathematics assessments and 265 (68.1) participated in both years' assessments in ELA. Of the 423 ESOL participants, 266 (62.9%) participated in both years' mathematics assessments and 263 (62.2%) participated in both years ELA assessments. In total, 310 (11.0%) students participated in at least one session of voluntary tutoring focused on reading and 287 (10.2%) participated in at least one session of voluntary tutoring focused on mathematics during the 2015-2016 school year at one of the three urban middle schools. Of the 310 students who participated in tutoring focused on reading 51 (16.5%) were served in an ESE program and 54 (17.4%) were served in the ESOL program. Of the 287 students who participated in tutoring focused on mathematics, 40 (14.0 %) were served in an ESE program and 53 (18.5%) were served in the ESOL program.

According to Rule 6A-1.09422, standardized assessments were required to be reported in "Achievement Levels" which were categorized in levels ranging from 1 through 5, with Level 3 indicating satisfactory performance. The assessments were also required to be reported using a

scale score defined by the baseline assessment administered in the 2014-2105 school year (Rule 6A-1.09422). Results from the Florida Standards Assessments were reported to the school districts in June 2016. Following are tables containing the FSA English Language Arts scale scores (Table 8), FSA Mathematics scale scores (Table 9), and Geometry and Algebra 1 EOC scale scores (Table 10) for the 2015-2016 school year.

Table 8

Florida Standards Assessments: English Language Arts (ELA) Scale Score Ranges (240-412) by Achievement Level

Grade Level	Level 1	Level 2	Level 3	Level 4	Level 5
Grade 6 ELA	259-308	309-325	326-338	339-355	356-391
Grade 7 ELA	267-317	318-332	333-345	346-359	360-397
Grade 8 ELA	274-321	322-336	337-351	352-365	366-403

Table 9

Florida Standards Assessments Mathematics Scale Score Ranges (240-393) by Achievement Level

Grade Level	Level 1	Level 2	Level 3	Level 4	Level5
Grade 6 Mathematics	260-309	310-324	325-338	339-355	356-390
Grade 7 Mathematics	269-315	316-329	330-345	346-359	360-391
Grade 8 Mathematics	273-321	322-336	337-352	353-364	365-393

Table 10

End-of-Course (EOC) Assessment Scale Score Ranges (425-575) by Achievement Level: Algebra 1 and Geometry

Assessment	Level 1	Level 2	Level 3	Level 4	Level 5
Algebra 1 EOC	425-486	487-496	497-517	518-531	532-575
Geometry EOC	425-485	486-498	499-520	521-532	533-575

Data Analysis

This comparative causal study utilized a quantitative methodological approach in analyzing the data. Frequency of attendance of tutoring, indicating participation in exceptional student education (ESE) and English Speakers of Other Language (ESOL) programs using yes or no were entered into SPSS using the numeral assigned. To analyze the relationship between frequency in tutoring and student achievement scale scores on Florida Standards Assessment in English language arts and mathematics were also entered into SPSS. For the purpose of this study, ESE data did not include students served in the gifted program nor those who were assessed using the Florida Standards Alternative Assessment.

Data Analysis for Research Question 1

Tutoring attendance logs were collected from each of the three schools. School A provided a running record of attendance on google sheets of only students who attended tutoring, School B provided an excel workbook of all students assessed on FSA and indicated those who participated in tutoring and how many hours each student received, and School C provided hard

copies of sign in sheets from each tutoring session. For School A and School C, a roster of all students was also provided and the researcher individually entered attendance of tutoring for those who participated. Once all three schools had a compiled list of hours participated in tutoring, the three rosters were sent to the accountability department in the large urban school district. The Research and Accountability team pulled archival data for students participating in FSA at one of the three urban middle schools and merged the information with the tutoring attendance logs provided. A Pearson Correlation test was then utilized to determine the relationship between the frequency of tutoring and mean change in developmental scale scores of students on state assessments for FSA English Language Arts and FSA Mathematics. The frequency of participation in tutoring was recorded and utilized as the independent variable, and student change in developmental scores served as the dependent variable. The data were interpreted to determine the relationship of frequency of tutoring and change in student achievement.

Data Analysis for Research Question 2

To determine the difference between tutoring and student achievement, an independent two-sample t-test was completed. The independent two-sample t-test was utilized to determine if there was a significant variance of student achievement between those who participated in tutoring and those who did not participate in tutoring. In order to perform this test, the mean scores of students' achievement was calculated for those who participated in tutoring and those who did not participate in tutoring. The data were interpreted to determine the relationship of student achievement and after-school tutoring.

Data Analysis for Research Question 3

To determine the difference of students served in an exceptional student education program and student achievement, an independent two-sample t-test was completed. The independent two-sample t-test was utilized to determine if there was a significant variance of student achievement for those served in an ESE program who participated in tutoring versus those who did not participate in tutoring. In order to perform this test, the mean scores for each of the assessments for students served in an ESE program who participated in tutoring were compared to the mean scores for students served in an ESE program who did not participate in tutoring.

Data Analysis for Research Question 4

To determine the difference between tutoring of English learners (ELs) served in an English Speakers of Other Languages (ESOL) program and student achievement, an independent two-sample t-test was completed. The independent two-sample t-test was utilized to determine if there was a significant variance of student achievement for those served in an ESOL program who participated in tutoring versus those who did not participate in tutoring. In order to perform this test, the mean scores for each of the assessments for students served in an ESOL program who participated in tutoring were compared to the mean scores for students served in an ESOL program who did not participate in tutoring.

Data Analysis for Research Question 5

To determine the extent of the difference between the model of tutoring, (a) computer-based, (b) small group, and (c) a mixed method of both computer-based and small group and its

effect of student achievement were compared using an ANOVA test. An ANOVA was performed for each of the three models using the student achievement scores for those who participated in tutoring. Table 11 shows the relationship between all research questions, sources of data, and statistical analyses used in the data analysis.

Table 11

Research Questions, Data Sources, and Statistical Analysis

Research Questions	Data Sources	Analysis
1. What is the relationship between students' frequency of participation in tutoring and change in performance outcomes on state assessments?	Tutoring program attendance records Student DSS on FSA English Language Arts Student DSS on FSA Mathematics	Pearson Correlation
2. How does change in achievement on state assessments for students who participate in tutoring compare to change in achievement on state assessments for matched students who do not participate?	Tutoring program attendance records Student DSS on FSA English Language Arts Student DSS on FSA Mathematics	Independent sample t-test
3. How does change in achievement on state assessments for students who are classified in the Exceptional Student Education (ESE) program and participate in tutoring compare to change in achievement on state assessments for ESE students who do not participate?	Tutoring program attendance records Student DSS on FSA English Language Arts Student DSS on FSA Mathematics	Independent sample t-test
4. How does change in achievement on state assessments for English learners (EL) who are in the English for Speakers of Other Language (ESOL) program and participate in tutoring compare to change in achievement on state assessments for ELs who do not participate?	Tutoring program attendance records Student DSS on FSA English Language Arts Student DSS on FSA Mathematics	Independent sample t-test
5. How does the change in achievement on state assessments differ among the three tutoring models?	Tutoring method Tutoring program attendance records Student DSS on FSA English Language Arts Student DSS on FSA Mathematics	ANOVA

Note. DSS = Developmental Scale Score

Summary

In Chapter 3, the methods and procedures used for the current study were identified. The population was described and the procedure on identifying the sample was explained. To gather quantitative data, the researcher collected tutoring logs from the three participating schools and requested archival data from the district. The measures in response to the five quantitative research questions were also described. The statistical test and data sources utilized were identified. The results of the five research questions are detailed in Chapter 4.

CHAPTER 4
RESULTS

Introduction

The intended purpose of this study was to determine if a significant relationship between participation in school tutoring and change in student accountability on state assessments existed in an urban middle school setting. A causal comparative research design was utilized to analyze the data collected from the school district. The data collected included tutoring logs at three urban middle schools, student achievement on 2014-2015 and 2015-2016 state assessments in English language arts and mathematics, and individual student demographics.

The researcher compared students who participated in a school-based tutoring program compared to students who did not participate in a tutoring program in order to determine the difference between participation in school tutoring and change in student achievement. A correlation between the frequency of participation in tutoring and the change in student achievement was analyzed to determine if a relationship between frequency and change in student achievement existed. Additionally, the data were analyzed to determine the level of success of tutoring for students who specifically were served in the English Speakers of Other Languages (ESOL) Program or an exceptional student education (ESE) Program.

For the purpose of this study, achievement for students assessed on the Florida Standards Alternative Assessment, Algebra 1 End-of-Course (EOC) or Geometry EOC assessment was excluded from this study. In addition, students who were served in the gifted program were excluded from students served in an ESE program.

Descriptive Statistics

Change in Florida Standard Assessment (FSA) measures for English language arts and mathematics were utilized to determine the difference between participation in school-based tutoring and student achievement. Only those variables used in the analysis of the five research questions are discussed in this section. The demographic variables made up the categorical data for this study, and the change scores on the FSA made up the continuous data. In order to classify the change in student achievement, data for only those students who participated on the FSA English Language Arts for the 2014-2015 and 2015-2016 school year were analyzed. The same method was used to determine the change in student achievement for those who participated on the FSA Mathematics.

Categorical Variables

The categorical data for this study included classification of an ESE program, ESOL program, and attending school for the 2015-2016 school year. The frequency of each of the identified classifications was determined. Of the 2,822 students enrolled at one of the three schools, data from the schools only included 2,711 due to elimination of students who participated on the Florida State Alternate Assessment. Of the 2,711 students enrolled, 412 students received services in the ESOL program and 360 students received services in the ESE program. Total students attending the three schools were: School A (1,074), School B (618), and School C (1,019).

Continuous Variables

The continuous variables consisted of frequency of participation in school-based tutoring and developmental scale scores for students participating in FSA English Language Arts and FSA Mathematics. Due to the need to compare change in student achievement, only students who participated on the FSA ELA 2014-2015 and FSA ELA 2015-2016 were included in the study. Of the 2,711 enrolled at one of the three schools, 2,294 students were assessed on both the 2014-2015 and 2015-2016 FSA ELA. Of the 2,294 students who were assessed on both years' FSA, 310 students participated in a school-based tutoring program at their respective schools.

The same process was used to compare students who participated in the FSA Mathematics 2014-2015 and FSA Mathematics 2015-2016 assessments. Of the 2,711 students enrolled at one of the three schools, 1,875 students were assessed on both the 2014-2015 and 2015-2016 FSA Mathematics. Of the 1,875 students who were assessed on both years FSA, 287 students participated in a school-based tutoring program at their enrolled schools. For both FSA ELA and FSA Mathematics, the largest number of students tutored was assessed on the 6^{th} grade assessment, followed by the 7^{th} grade assessment. The least number of students was tutored on the 8^{th} grade assessment. Tables 12 and 13 contain the frequency of participation by range of hours on each of the grade level assessments in ELA by tutoring delivery model overall and by school. Tables 14 and 15 contain frequency of participation by range of hours on each of the grade level assessments in mathematics by tutoring delivery model overall and by school.

Table 12

Overall Tutoring Participation in English Language Arts (ELA) (N=2,294)

Participation	ELA 6 n	ELA 7 n	ELA 8 n	Total n
No Tutoring	646	702	636	1,984
Tutored	116	113	81	310

Table 13

Tutoring Participation in English Language Arts (ELA) by School

	School A				School B				School C			
Participation Hours	ELA 6 n	ELA 7 n	ELA 8 n	Total n	ELA 6 n	ELA 7 n	ELA 8 n	Total n	ELA 6 n	ELA 7 n	ELA 8 n	Total n
0	233	300	246	779	162	147	120	429	251	255	270	776
1	16	14	9	39	0	0	0	0	14	11	9	34
2	1	2	6	9	0	0	0	0	5	11	9	25
3-4	1	2	4	7	1	1	0	2	7	1	3	11
5-7	6	6	1	13	0	0	0	0	5	2	2	9
8-13	2	6	1	9	0	5	2	7	1	2	2	5
14-18	6	2	4	12	3	2	4	9	4	0	0	4
19-21	0	0	1	1	10	8	8	26	2	1	0	3
22-27	0	1	0	1	12	11	2	25	2	0	0	2
28-34	0	1	0	1	6	11	6	23	3	1	1	5
35+	0	0	0	0	5	10	7	22	4	2	0	6

Table 14

Overall Tutoring Participation in Mathematics (N=1,875)

Participation	Mathematics 6 n	Mathematics 7 N	Mathematics 8 n	Total n
No Tutoring	530	657	401	1588
Tutored	125	100	62	287

Table 15

Tutoring Participation in Mathematics by School

	School A				School B				School C			
Participation Hours	Math 6 n	Math 7 n	Math 8 n	Total n	Math 6 n	Math 7 n	Math 8 n	Total n	Math 6 n	Math 7 n	Math 8 n	Total n
0	160	323	161	644	164	114	120	398	206	220	120	546
1	10	5	2	17	0	0	0	0	13	15	9	27
2	6	1	4	11	0	0	0	0	8	7	3	18
3-4	4	5	2	11	0	2	0	2	5	3	1	9
5-7	2	5	5	12	0	0	1	1	8	5	1	14
8-13	4	4	1	9	2	2	1	5	3	0	4	7
14-18	2	1	1	4	3	4	2	9	7	3	0	10
19-21	1	0	0	1	6	5	9	20	2	0	2	4
22-27	0	0	0	0	11	13	2	37	4	1	0	5
28-34	0	0	0	0	7	10	6	23	3	1	0	4
35+	0	0	0	0	5	6	6	17	9	2	0	11

Table 16 contains the five research questions that guided the study. Also shown are the independent and dependent variables associated with each of the questions.

Table 16

Research Questions, Independent and Dependent Variables

Research Questions	Independent Variable	Dependent Variable
1. What is the relationship between students' frequency of participation in tutoring and change in performance outcomes on state assessments?	Frequency of tutoring hours on attendance records	The change in developmental scale score received by each student on the 2014-2015 FSA and 2015-2015 FSA; Developmental scale scores was used for FSA English Language Arts and FSA Mathematics.
2. How does change in achievement on state assessments for students who participate in tutoring compare to change in achievement on state assessments for matched students who do not participate?	Tutoring program attendance records; Data was utilized to determine if student did or did not participate in a school-based tutoring program. All students who received at least one hour of school-based tutoring were classified as receiving tutoring.	The change in developmental scale score received by each student on the 2014-2015 FSA and 2015-2015 FSA; Developmental scale scores was used for FSA English Language Arts and FSA Mathematics.
3. How does change in achievement on state assessments for students who are classified in the Exceptional Student Education (ESE) program and participate in tutoring compare to change in achievement on state assessments for ESE students who do not participate?	Student classification of ESE Status; students who were assessed on FSAA or classified as gifted were not included in ESE data.	The change in developmental scale score received by each student on the 2014-2015 FSA and 2015-2015 FSA; Developmental scale scores was used for FSA English Language Arts and FSA Mathematics.

Research Questions	Independent Variable	Dependent Variable
4. How does change in achievement on state assessments for English learners (EL) who are in the English for Speakers of Other Language (ESOL) program and participate in tutoring compare to change in achievement on state assessments for ELs who do not participate?	Student classification of EL Status; only students served in the English Speakers of Other Languages were utilized.	The change in developmental scale score received by each student on the 2014-2015 FSA and 2015-2015 FSA; Developmental scale scores was used for FSA English Language Arts and FSA Mathematics.
5. How does the change in achievement on state assessments differ among the three tutoring models?	School Identification Data for each of the three participating schools.	The change in developmental scale score received by each student on the 2014-2015 FSA and 2015-2015 FSA; Developmental scale scores was used for FSA English Language Arts and FSA Mathematics.

Data Analysis for Research Question 1

What is the relationship between students' frequency of participation of in tutoring and change in performance outcomes of state assessments?

A Pearson Correlation was utilized to answer the first research question. The Pearson Correlation was completed to determine the relationship between frequency of participation in tutoring and change in accountability measures on the FSA English Language Arts and FSA Mathematics. In order to calculate change in accountability scores, only data for students who were assessed on the FSA ELA both years were analyzed. The same requirement was utilized for those who were assessed on the FSA Mathematics.

Mean change was compared by hours of participation in tutoring on each of the grade level assessments for ELA. On FSA ELA 6, the highest mean change was found for students

who participated in 14-18 hours of tutoring (M=8.92, SD=10.444). On FSA ELA 7, the highest mean change was found for students who participated in 3-4 hours of tutoring (M=15.75, SD=15.414). On FSA ELA 8, the highest mean change was found for students who participated in 35+ hours of tutoring (M=22.17, SD=15.46). Table 17 contains participation hours and mean change in FSA ELA by the grade level assessment.

As shown in Table 18, a statistical significance was found at $p<.05$ soley on FSA ELA 7 for students who participated in 35+ hours of tutoring, r=.719, n=12, p=.008. The results shown in Tables 17 and 18 indicated there was no relationship between the hours of participation in tutoring and change in accountability measurement on the FSA ELA from one year to the next.

Table 17

Tutoring Participation Hours: Mean Changes in FSA English Language Arts by Grade Level

	English Language Arts 6			English Language Arts 7			English Language Arts 8		
Participation Hours	n	Mean Change	Std. Deviation	N	Mean Change	Std. Deviation	n	Mean Change	Std. Deviation
0	646	1.41	11.786	702	7.50	12.46	636	5.39	12.779
1	30	3.33	9.984	25	10.40	15.930	18	8.67	9.133
2	6	-2.83	12.172	13	12.54	13.295	15	6.40	10.796
3-4	9	3.56	13.427	4	15.75	15.414	7	7.43	19.603
5-7	11	3.91	14.956	8	10.75	7.741	3	9.33	5.859
8-13	3	-5	31.000	13	.54	15.120	5	7.40	4.775
14-18	13	8.92	10.444	4	1.25	10.996	8	4.50	13.959
19-21	12	.67	11.332	9	7.89	8.223	9	2.33	13.323
22-27	14	.0	10.975	12	-.08	11.421	2	-5.50	6.364
28-34	9	3.67	12.135	13	6.38	9.896	7	4.29	15.89
35+	9	7.44	9.153	12	9.92	18.128	7	22.17	15.46

Note. FSA = Florida Standards Assessment.

Table 18

Pearson Correlation: Tutoring Participation Mean Change in FSA English Language Arts

	English Language Arts 6			English Language Arts 7			English Language Arts 8		
Participation Hours	Pearson Correlation	Sig (2-tailed)	n	Pearson Correlation	Sig (2-tailed)	n	Pearson Correlation	Sig (2-tailed)	n
1			30			25			18
2			6			13			15
3-4	-.310	.416	9	-.281	.719	4	.504	.248	7
5-7	.111	.744	11	.098	.817	8	-.345	.776	3
8-13	.742	.468	3	.218	.474	13	-.306	.617	5
14-18	.225	.461	13	.709	.291	4	.537	.170	8
19-21	-.163	.613	12	.281	.463	9	.065	.867	9
22-27	-.413	.142	14	-.494	.103	12	-1		2
28-34	-.161	.679	9	.146	.635	13	-.579	.174	7
35+	-.106	.786	9	.719	.008	12	.269	.560	7

Note. FSA = Florida Standards Assessment

A Pearson Correlation was used to identify the mean change and compare by hours of participation in tutoring on each of the grade level assessments for mathematics. On FSA Mathematics 6, the highest mean change was found for students who participated in 20-22 hours of tutoring (M=1.22, SD=11.702). On FSA Mathematics 7, the highest mean change was found for students who participated in 8-13 hours of tutoring (M=14.33, SD= 10.237). On FSA Mathematics 8, the highest mean change was found for students who participated in 28-35 hours of tutoring (M=14.00, SD= 12.066). Table 19 contains tutoring participation hours and mean change in FSA Mathematics by the grade level assessment.

Although a negative correlation, a statistical significance was found at $p<.05$ for FSA Mathematics 6 for students who participated in 36+ hours of tutoring, r=-.588, n=14, p=.027, FSA Mathematics 7 for students who participated in 3-4 hours of tutoring, r=-.582, n= 10, p=.078, and FSA Mathematics 8 for students who participated in 3-4 hours of tutoring, r=-.993, n=9, p=.075. These results are reflected in Table 20.

Table 19

Tutoring Participation Hours: Mean Change in FSA Mathematics by Grade Level

	Mathematics 6			Mathematics 7			Mathematics 8		
Participation Hours	n	Mean Change	Std. Deviation	N	Mean Change	Std. Deviation	n	Mean Change	Std. Deviation
0	530	-2.27	11.952	657	3.48	13.621	401	5.90	14.588
1	23	-4.09	11.732	20	6.05	16.308	11	6.00	11.967
2	14	-2.64	11.764	8	10.63	12.501	7	-2.14	8.783
3-4	9	-3.00	10.630	10	6.60	9.419	9	-1.33	21.221
5-7	10	-5.00	11.795	10	8.00	11.652	7	-1.57	12.581
8-13	9	-5.44	10.944	6	14.33	10.237	6	13.83	15.145
14-19	12	-4.17	8.601	8	7.38	10.993	3	-1.00	18.520
20-22	9	1.22	11.702	5	-2.60	13.428	11	9.82	9.611
23-27	15	-3.87	12.688	14	5.64	18.661	2	10.00	15.556
28-35	10	-6.90	7.172	11	-.27	10.071	6	14.00	12.066
36+	14	-2.57	12.684	8	4.88	9.746	6	12.50	8.961

Note. FSA = Florida Standards Assessment

Table 20

Pearson Correlation: Tutoring Participation Mean Change in FSA Mathematics

	Mathematics 6			Mathematics 7			Mathematics 8		
Participation Hours	Pearson Correlation	Sig (2-tailed)	n	Pearson Correlation	Sig (2-tailed)	n	Pearson Correlation	Sig (2-tailed)	n
1			23			20			11
2			14			8			7
3-4	.080	.838	9	-.582	.078	10	-.993	.075	9
5-7	.279	.435	10	-.181	.617	10	-.126	.787	7
8-13	-.501	.169	9	-.454	.366	6	-.852	.031	6
14-19	.180	.576	12	.493	.215	8	.842	.363	3
20-22	-.119	.760	9	-.400	.505	5	-.181	.594	11
23-27	-.352	.198	15	.079	.789	14	1.000		2
28-35	-.251	.484	10	-.125	.715	11	-.106	.842	6
36+	-.588	.027	14	.624	.098	8	-.501	.312	6

Note. FSA = Florida Standards Assessment

A Pearson Correlation was completed to analyze the relationship between students who participated in one or more hours of tutoring focused on reading and their mean change score on the FSA ELA. Of the 2,294 students who were assessed on the FSA ELA in the 2014-2015 and 2015-2016 school years, 310 participated in at least one hour of school-based tutoring in reading. The correlation coefficient of frequency of participation in tutoring and change in developmental scale score (DSS) on the FSA ELA, $r=.008$, $n=310$, $p=.884$, represented a miniscule positive correlation, but the results were not statistically significant at $p < .05$. These results are reflected in Tables 21 and 22.

A Pearson Correlation was also completed to analyze the relationship between students who participated in one or more hours of tutoring in mathematics and their mean change score on FSA Mathematics. Of the 1,875 students who were assessed on the FSA Mathematics in the 2014-2015 and 2015-2016 school years, 287 participated in at least one hour of school-based tutoring in mathematics. The correlation coefficient between frequency of participation in tutoring and change in developmental scale score on the FSA Mathematics, $r=-.001$, $n=287$, $p=.981$, represented a miniscule negative correlation, and the results were not statistically significant at $p < .05$. The results, reflected in Tables 21 and 22, indicated there was no relationship between the hours of participation in tutoring and change in accountability measurement on FSA Mathematics from one year to the next.

Table 21

Mean Participation Hours and Change in Accountability Descriptive Statistics

Assessment	Mean Participation Hours	Standard Deviation	Mean Accountability Change	Standard Deviation	Tutoring Participants
FSA ELA	13.76	12.970	4.98	12.677	310
FSA Mathematics	14.62	13.301	2.13	13.660	287

Note. FSA = Florida Standards Assessment; ELA = English Language Arts.

Table 22

Pearson Correlation: Participation and Change in Accountability Outcomes

Assessment	Pearson Correlation	Sig (2-tailed)	Tutoring Participants
FSA ELA	.008	.884	310
FSA Mathematics	-.001	.981	287

Note. FSA = Florida Standards Assessment; ELA = English Language Arts.

Data Analysis for Research Question 2

How does change in achievement on state assessments for students who participate in tutoring compare to change in achievement on state assessments for matched students who do not participate?

An independent sample t-test was utilized to compare the mean change scores for students who did and did not participate in a school-based tutoring program focused on reading or mathematics. Independent sample t-tests were utilized to determine significance of participation in tutoring. The independent sample t-test was based on grade level assessment and tutoring delivery model in ELA and mathematics.

Mean change for students who participated on the FSA ELA 6 (M=3.16, SD=12.017), FSA ELA 7 (M=7.58, SD=13.912), and FSA ELA 8 (M=7.41, SD=13.022) and participated in tutoring was greater than for students who did not participate in tutoring and participated on the FSA ELA 6 (M=1.41, SD=11.786), FSA ELA 7 (M=7.50, SD=12.46), FSA ELA 8 (M=5.39, SD=12.779). Table 23 displays the descriptive statistics of students participating in tutoring and mean change on FSA ELA for each grade level assessment. In each of the grade level assessments, as shown in Table 24, no statistical significance was identified based on participation in school-based tutoring at $p<.05$.

Table 23

Group Statistics: Participation in Tutoring and Mean Change on FSA English Language Arts by Grade Level

Attendance	n	Mean	Std. Deviation	Std. Error
ELA 6				
No Tutoring	646	1.41	11.786	.464
Tutoring	116	3.16	12.017	1.116
ELA 7				
No Tutoring	702	7.50	12.467	.471
Tutoring	113	7.58	13.912	1.309
ELA 8				
No Tutoring	636	5.39	12.779	.507
Tutoring	81	7.41	13.022	1.447

Note. FSA = Florida Standards Assessment; ELA = English Language Arts.

Table 24

Independent Samples t-Test: Participation in Tutoring and Mean Change in FSA English Language Arts by Grade Level

	Levene's Test for Equality of Variances		t-Test for Equality of Means					95% Confidence Interval of the Difference	
Variables	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
FSA ELA 6	.257	.612	1.471	760	.142	1.754	1.192	-.586	4.094
FSA ELA 7	.153	.696	.059	813	.953	.075	1.285	-2.447	2.597
FSA ELA 8	.015	.902	1.338	715	.181	2.022	1.511	-.944	4.988

Note. FSA ELA = Florida Standards Assessment, English Language Arts.

An independent samples t-test was utilized to determine the difference between participation in tutoring and mean change in FSA ELA by tutoring delivery model. For each tutoring delivery model, the mean change for students who participated in tutoring was slightly higher than for students who did not participate in tutoring. Table 25 displays descriptive statistics. Utilizing each of the tutoring delivery models, no statistical significance was identified based on participation in school-based tutoring. Results of the analysis are shown in Table 26.

Mean change for students who attended School A and participated in computer-based tutoring, (M=6.15, SD=12.519), School B, small group tutoring, (M=5.31, SD=12.070), and School C, a mixed mode of computer-based and small group tutoring (M=6.27, SD=13.870) and participated in tutoring was greater than for students who did not participate in tutoring but attended the same school; School A (M=5.37, SD=12.519), School B (M=4.50, SD=12.556), School C (M=4.49, SD=12.712). Table 25 displays the difference of participation in tutoring and mean change on FSA ELA for each grade level assessment. In each of the grade level

assessments, as shown in Table 26, no statistical significance was identified based on participation in school-based tutoring at $p<.05$.

Table 25

Group Statistics: Participation in Tutoring and Mean Change in FSA English Language Arts by Tutoring Delivery Model

Participation	n	Mean	Std. Deviation	Std. Error
School A				
No Tutoring	779	5.37	12.519	.449
Tutoring	92	6.15	13.620	1.420
School B				
No Tutoring	429	4.50	12.556	.606
Tutoring	114	5.31	12.070	1.130
School C				
No Tutoring	776	4.49	12.712	.456
Tutoring	104	6.27	13.870	1.360

Note. FSA ELA = Florida Standards Assessment, English Language Arts. School A = computer-based tutoring; School B = small group tutoring; School C = mixed mode of computer-based and small group tutoring.

Table 26

Independent Samples t-Test: Participation in Tutoring and Mean Change in FSA ELA by Tutoring Delivery Model

	Levene's Test for Equality of Variances		t-Test for Equality of Means					95% Confidence Interval of the Difference	
Variables	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
School A	.010	.922	.561	869	.575	.781	1.393	-1.954	3.516
School B	.336	.563	.618	541	.537	.811	1.312	-1.768	3.389
School C	.122	.726	1.322	878	.186	1.774	1.342	-.860	4.409

Note. FSA ELA = Florida Standards Assessment, English Language Arts. School A = computer-based tutoring; School B = small group tutoring; School C = mixed mode of computer-based and small group tutoring.

Students who participated on the FSA Mathematics 7 (M=5.99, SD=13.456) and FSA Mathematics 8 (M=6.50, SD=12.950) and participated in tutoring held a higher mean change score than students who did not participate in tutoring and were assessed on the FSA Mathematics 7 (M=3.48, SD=13.621) and FSA Mathematics 8 (M=5.90, SD=14.588). Table 27 contains the difference of participation in tutoring and mean change on FSA Mathematics by each grade level assessment. In each of the grade level assessments, no statistical significance was identified based on participation in school-based tutoring. The independent samples t-test results, $t(757) = 1.718$, $p=.086$ (2-tailed), indicated that the difference of those assessed on FSA Mathematics 7 between those who participated in tutoring and those who did not participate in tutoring was not statistically significant at $p<.05$ but was approaching significance by a sheer .06. The results of the analysis are displayed in Table 28.

Table 27

Group Statistics: Participation in Tutoring and Mean Change in FSA Mathematics by Grade Level

Participation	n	Mean	Std. Deviation	Std. Error
Mathematics 6				
No Tutoring	530	-2.27	11.952	.519
Tutoring	125	-3.67	11.023	.986
Mathematics 7				
No Tutoring	657	3.48	13.621	.531
Tutoring	100	5.99	13.456	1.346
Mathematics 8				
No Tutoring	401	5.90	14.588	.728
Tutoring	62	6.50	12.950	1.645

Table 28

Independent Samples t-Test: Participation in Tutoring and Mean Change in FSA Mathematics by Grade Level

	Levene's Test for Equality of Variances		t-Test for Equality of Means					95% Confidence Interval of the Difference	
Variables	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
FSA Math 6	.889	.346	-1.197	653	.232	-1.402	1.171	-3.702	.898
FSA Math 7	.000	.986	1.718	755	.086	2.508	1.460	-.358	5.373
FSA Math 8	.029	.864	.307	461	.759	.602	1.963	-3.255	4.459

An independent samples t-test was utilized to determine the difference between participation in tutoring by delivery model and mean change in FSA Mathematics. Students who participated in a tutoring program at School B receiving small group tutoring had a slightly

higher mean change than students who did not participate in tutoring. Table 29 contains descriptive statistics by tutoring delivery model. Utilizing each of the tutoring delivery models, no statistical significance was identified based on participation in school-based tutoring. Results of the analysis are shown in Table 30.

Mean change for students who were assessed on FSA Mathematics were found for each of the tutoring delivery models at the three schools. Students who attended School A and participated in computer-based tutoring, (M=.66, SD=12.111), and students who attended School B and participated in small group tutoring, (M=1.63, SD=14.285), was lower than students who attended the same school but did not participate in tutoring; School A (M=1.88, SD=13.578) and School B (M=3.22, SD=13.962). Students who attended School C and participated in mixed mode of computer-based and small group tutoring (M=2.97, SD=12.678) was greater than students who did not participate in tutoring but attended the same school; School C (M=1.20, SD=13.628). Table 29 displays the difference of delivery model of tutoring and mean change on FSA Mathematics for each of the three schools. In each of the schools, as shown in Table 30, no statistical significance was identified based on tutoring delivery model of school-based tutoring at $p<.05$.

Table 29

Group Statistics: Participation in Tutoring and Mean Change in FSA Mathematics by Tutoring Delivery Model

Participation	n	Mean	Std. Deviation	Std. Error
School A				
No Tutoring	644	1.88	13.578	.535
Tutoring	65	.66	12.111	1.502
School B				
No Tutoring	546	3.22	13.962	.598
Tutoring	119	1.63	14.285	1.310
School C				
No Tutoring	398	1.20	13.628	.683
Tutoring	109	2.97	12.678	1.249

Note. School A = computer-based tutoring; School B = small group tutoring; School C = mixed mode of computer-based and small group tutoring.

Table 30

Independent Samples t-Test: Participation in Tutoring and Mean Change in FSA Mathematics by Tutoring Delivery Model

	Levene's Test for Equality of Variances		t-Test for Equality of Means					95% Confidence Interval of the Difference	
Variables	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
School A	.423	.516	-.698	707	.485	-1.222	1.751	-4.659	2.215
School B	.115	.735	-1.121	663	.263	-1.590	1.418	-4.375	1.196
School C	.040	.842	1.190	449	.235	1.767	1.486	-1.152	4.686

Note. FSA = Florida Standards Assessment; School A = computer-based tutoring; School B = small group tutoring; School C = mixed mode of computer-based and small group tutoring.

An independent samples t-test was completed to determine the difference between mean change of developmental scale scores on the 2014-2015 and 2015-2016 FSA English Language Arts for all students who participated in school based tutoring regardless of delivery model and those who did not participate in tutoring and attended one of the three schools. The mean change of the 310 students who participated in reading tutoring (M=5.88, SD=13.12) and the 1,984 students who did not participate in reading tutoring (M=4.84, SD=12.60) was 1.04. The independent samples t-test results, t (2294) = 1.345, p=.179 (2-tailed), indicated students who participated in tutoring had a slightly higher change in accountability score, but the difference between those who participated in tutoring and those who did not was not statistically significant at $p<.05$.

An independent samples t-test was completed to analyze the mean change in developmental scale scores on the 2014-2015 and 2015-2016 FSA Mathematics for all students who participated in tutoring regardless of delivery model and students who attended one of the three schools but did not attend school-based tutoring. The difference between the 287 students who participated in tutoring (M=1.89, SD=13.23) and the 1,588 students who did not participate in mathematics tutoring (M=2.17, SD=13.74) resulted in a difference in means of -.281. The independent samples t-test results, t (1875) = -.321, p=.749 (2-tailed), indicated the difference between those who participated in tutoring and those who did not was not statistically significant at $p<.05$. These results of the analyses are shown in Tables 31 and 32.

Table 31

Group Statistics: Participation in Tutoring and Change in Accountability Outcome

Assessment	Tutoring Y/N	n	Mean	Standard Deviation	Standard Error
FSA ELA	Y	310	5.88	13.123	.745
	N	1,984	4.84	12.604	.283
FSA	Y	287	1.89	13.234	.781
Mathematics	N	1588	2.17	13.739	.345

Note. FSA = Florida Standards Assessment; ELA = English Language Arts.

Table 32

Independent Samples t-Test: Participation in Tutoring and Change in Accountability Outcome

Variables	Levene's Test for Equality of Variances		t-Test for Equality of Means					95% Confidence Interval of the Difference	
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
FSA ELA	.001	.978	1.345	2292	.179	1.041	.774	-.477	2.559
FSA Mathematics	.011	.917	-.320	1873	.749	-.281	.876	-1.999	1.438

Note. FSA = Florida Standards Assessment; ELA = English Language Arts.

Data Analysis for Research Question 3

How does change in achievement on state assessments for students who are classified in the Exceptional Student Education (ESE) program and participate in tutoring compare to change in achievement on state assessments for ESE students who do not participate?

An independent samples t-test was completed to determine the difference between mean change in student outcome and participation in tutoring for students who were served in an ESE program. Tutoring programs focused on reading and mathematics. Table 33 shows the hours of participation in tutoring and mean change in FSA ELA by grade level assessment for ESE students. For students who were served in an ESE program who completed the FSA ELA 6 assessment, those who participated in 5-7 hours (M=3.33, SD= 19.674), 14-18 (M= 10.00, SD= 9.695), 22-27 (M=20.00), and 35+ (M= 13.00, SD= 6.083) hours of tutoring had a higher mean change than students who were served in an ESE program but did not participate in tutoring (M=1.61, SD= 12.948). On FSA ELA 7, students who were served in an ESE program and participated in 1 (M=28.00, SD=24.042), 2 (M=16.00), 3-4 (M=17.00, SD= 12.728), 5-7 (M=12.50, SD= 4.950), and 19-21 (M=16.00) hours of tutoring had a higher mean change than students who did not participate in tutoring (M=7.64, SD= 13.339). On FSA ELA 8, all mean changes for students who were served in an ESE program and participated in at least one hour of tutoring had a higher mean change than students who did not participate in tutoring (M=.91, SD=13.292).

Table 33

Group Statistics: ESE Students' Participation in Tutoring and Mean Change in FSA English Language Arts

	ELA 6			ELA 7			ELA 8		
Participant Hours	N	Mean Change	Std. Deviation	N	Mean Change	Std. Deviation	N	Mean Change	Std. Deviation
0	66	1.61	12.948	90	7.64	13.339	58	.91	13.292
1	7	1.43	9.396	2	28.00	24.042	1	2.00	
2	2	-12.50	6.364	1	16.00		1	8.00	
3-4	1	-2.00		2	17.00	12.728	1	7.00	
5-7	6	3.33	19.674	2	12.50	4.950			
8-13	0			5	-4.40	21.408	1	7.00	
14-18	4	10.00	9.695	1	6.00		3	4.67	22.480
19-21	1	-15.00		1	16.00				
22-27	1	20.00		3	-7.33	12.014			
28-34	0			1	5.00				
35+	3	13.00	6.083	1	-26.00				

Note. ESE = Exceptional Student Education; FSA = Florida Standards Assessment; ELA = English Language Arts.

An independent samples t-test was performed to determine the difference between mean change and participation in tutoring for ESE students by grade level assessment regardless of number of hours. The mean change for ESE students who participated in tutoring was higher for ESE students assessed on ELA 6 (M=3.48, SD= 13.675) and ELA 8 (M=5.43, SD=13.138) than those who did not participate in tutoring and were assessed on the ELA 6 (M=1.61, SD=12.948) and ELA 8 (M=.91, SD=13.292) assessments. However, the same was not true for ESE students assessed on ELA 7 who participated in tutoring (M=4.63, SD=18.922). Their mean change was lower than that of ESE students who did not participate in tutoring (M=7.64, SD=13.339). Table 34 displays the frequency of participation in tutoring and mean change in FSA ELA for ESE students assessed on each of the grade level assessments. No significance was identified at $p < .05$. Results are shown in Table 35.

Table 34

Group Statistics: Participation in Tutoring and Mean Change in FSA English Language Arts for ESE Students by Grade Level

Participation	n	Mean	Std. Deviation	Std. Error
ELA 6				
No Tutoring	66	1.61	12.948	1.594
Tutoring	25	3.48	13.675	2.735
ELA 7				
No Tutoring	90	7.64	13.339	1.406
Tutoring	19	4.63	18.922	4.341
ELA 8				
No Tutoring	58	.91	13.292	1.745
Tutoring	7	5.43	13.138	4.966

Note. ESE = Exceptional Student Education; FSA = Florida Standards Assessment; ELA = English Language Arts.

Table 35

Independent Samples t-Test: Participation in Tutoring and Mean Change in FSA English Language Arts for ESE Students by Grade Level

	Levene's Test for Equality of Variances		t-Test for Equality of Means					95% Confidence Interval of the Difference	
Variables	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
FSA ELA 6	.701	.405	.607	89	.545	1.874	3.088	-4.261	8.009
FSA ELA 7	1.514	.221	-.827	107	.410	-3.013	3.643	-10.235	4.209
FSA ELA 8	.457	.502	.850	63	.399	4.515	5.313	-6.102	15.131

Note. ESE = Exceptional Student Education; FSA = Florida Standards Assessment; ELA = English Language Arts.

Table 36 includes frequency of participation in tutoring and mean change in FSA ELA by each tutoring delivery model for ESE students. Students attending School A receiving computer-based tutoring, and who were served in an ESE Program and participated in tutoring for 1 (M=7.17, SD=19.773), 3-4 (M=8.00), 5-7 (M=8.67, SD=18.715), and 14-18 (M=5.14, SD=13.120) had a higher mean change than students who were served in an ESE program but did not participate in any tutoring (M=4.73, SD=12.709). Students attending School B receiving small group tutoring, and who were served in an ESE program and participated in small group tutoring for 3-4 (M=26.00), 8-13 (M=3.50, SD=14.849), 14-18 (M=24.00), 19-21 (M=16.00), and 35+ (M=10.00) hours had a higher mean change than students who did not participate in tutoring (M=2.83, SD=13.882). Students attending School C receiving a mixed variation of computer-based and small group tutoring, and who were served in an ESE program and participated in a combination of both and small group tutoring for 1 (M=6.25, SD=14.258), 8-13

(M=7.00), and 28-34 (M=5.00) hours held a higher mean change that students who did not participate in tutoring (M=2.83, SD=13.882).

Table 36

Group Statistics: Participation in Tutoring and Mean Change in FSA ELA for ESE Students by Tutoring Delivery Model

	School A			School B			School C		
Participation Hours	n	Mean Change	Std. Deviation	n	Mean Change	Std. Deviation	n	Mean Change	Std. Deviation
0	84	4.73	12.709	60	2.83	13.882	70	4.00	14.258
1	6	7.17	19.773	0			4	6.25	9.570
2	0			0			4	-.25	14.975
3-4	1	8.00		1	26.00		2	2.50	6.364
5-7	6	8.67	18.715	0			2	-3.50	10.607
8-13	3	-9.67	26.502	2	3.50	14.849	1	7.00	
14-18	7	5.14	13.120	1	24.00		0		
19-21	0			1	16.00		1	-15.00	
22-27	0			4	-.50	16.823	0		
28-34	0			0			1	5.00	
35+	0			1	10.00		3	1.00	

Note. ESE = Exceptional Student Education; FSA = Florida Standards Assessment; ELA = English Language Arts.
School A = computer-based tutoring; School B = small group tutoring; School C = mixed mode of computer-based and small group tutoring.

An independent samples t-test was conducted to determine the difference between mean change and participation in tutoring for ESE students by tutoring delivery model. On FSA ELA, the mean change was slightly higher for ESE students at School A who participated in computer-based tutoring (M=4.78, SD=17.717) than ESE students who did not participate in tutoring (M=4.73, SD=12.709). The mean change in FSA ELA was higher for ESE students at School B participated in small group tutoring (M=8.10, SD=15.081) than ESE students who did not participate in tutoring (M=2.83, SD=12.702). Table 37 consists of frequency of participation in tutoring and mean change in FSA ELA for ESE students by tutoring delivery model. As shown in Table 38, no significance was identified at $p < .05$.

Table 37

Frequency of Participation in Tutoring and Mean Change in FSA English Language Arts for ESE Students by Tutoring Delivery Model

Participation	n	Mean	Std. Deviation	Std. Error
School A				
No Tutoring	84	4.73	12.709	1.387
Tutoring	23	4.78	17.717	3.694
School B				
No Tutoring	60	2.83	12.702	1.576
Tutoring	10	8.10	15.081	4.769
School C				
No Tutoring	70	4.00	14.285	1.704
Tutoring	18	1.22	12.656	2.983

Note. School A = computer-based tutoring; School B = small group tutoring; School C = mixed mode of computer-based and small group tutoring.

Table 38

Independent Samples t-Test: Participation in Tutoring and Mean Change in FSA English Language Arts for ESE Students by Tutoring Delivery Model

	Levene's Test for Equality of Variances		t-Test for Equality of Means					95% Confidence Interval of the Difference	
Variables	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
School A	.901	.345	.017	105	.986	.056	3.273	-6.434	6.547
School B	.396	.531	1.098	68	.276	5.267	4.798	-4.307	4.554
School C	.032	.859	-.753	86	.453	-2.778	3.688	-10.110	14.841

Note. ESE = Exceptional Student Education; FSA = Florida Standards Assessment; ELA = English Language Arts; School A = computer-based tutoring; School B = small group tutoring; School C = mixed mode of computer-based and small group tutoring.

Table 39 includes frequency of participation in tutoring and mean change in FSA Mathematics by grade level assessment for ESE students. On FSA Mathematics 6, ESE students who participated in 2 (M=.50, SD=8.737), 14-19 (M=1.33, SD=4.163), 20-22 (M=.00), and 23-27 (M=7.50, SD=14.849) hours had a higher mean change than students who were served in an ESE program but did not participate in tutoring (M=-1.20, SD=10.829). On FSA Mathematics 7, ESE students who participated in 2 (M=16.50, SD=4.950), 5-7 (M=16.00, SD=5.965), 8-13 (M=21.00), and 36+ (M=16.00) hours had a higher mean change than students who did not participate in tutoring (M=3.97, SD=14.780). On FSA Mathematics 8, ESE students who participated in 1 (M=14.00) and 5-7 (M=10.00) hours of tutoring had a higher mean change than ESE students who did not participate in tutoring (M=3.42, SD=14.497).

Table 39

Group Statistics: ESE Students' Participation in Tutoring and Mean Change in FSA Mathematics

	Mathematics 6			Mathematics 7			Mathematics 8		
Participation Hours	n	Mean Change	Std. Deviation	n	Mean Change	Std. Deviation	n	Mean Change	Std. Deviation
0	64	-1.20	10.829	97	3.97	14.780	52	3.42	14.497
1	5	-6.40	6.309	2	16.50	4.950	1	14.00	
2	4	.50	8.737	1	1.00		1	3.00	
3-4				2	-8.50	3.536	0		
5-7				2	16.00	5.965	1	10.00	
8-13	3	-7.33	2.517	1	21.00		0		
14-19	3	1.33	4.163	0			0		
20-22	1	.00		0			1	2.00	
23-27	2	7.50	14.849	3	-2.67	8.021	0		
28-35	2	-8.00	4.243	1	-11.00		0		
36+	3	-1.00	15.133	1	16.00		0		

An independent samples t-test was conducted to determine the difference between mean change in FSA Mathematics and participation in tutoring for ESE students by grade level assessment. The mean change for ESE students who were assessed on the FSA Mathematics 7 (M=5.15, SD=12.562) and FSA Mathematics 8 (M=7.25, SD=5.737) and participated in tutoring was higher than students who participated in FSA Mathematics 7 (M=3.97, SD=14.780) and FSA Mathematics 8 (M=3.42, SD=14.497) but did not participate in tutoring. The mean change for ESE students who were assessed on the FSA Mathematics 6 assessment and participated in tutoring (M=-2.26, SD= 8.609) was lower than ESE students who did not participate in tutoring (M=-1.20, SD=10.829). Table 40 shows the frequency of participation in tutoring and mean change in FSA Mathematics for ESE students assessed on each of the grade level assessments. No significance at $p < .05$ was identified as shown in Table 41.

Table 40

Group Statistics: Participation in Tutoring and Mean Change in FSA Mathematics for ESE Students by Grade Level

Participation	n	Mean	Std. Deviation	Std. Error
Mathematics 6				
No Tutoring	64	-1.20	10.829	1.354
Tutoring	23	-2.26	8.609	1.795
Mathematics 7				
No Tutoring	97	3.97	14.780	1.501
Tutoring	13	5.15	12.562	3.484
Mathematics 8				
No Tutoring	52	3.42	14.497	2.010
Tutoring	4	7.25	5.737	2.869

Table 41

Independent Samples t-Test: Participation in Tutoring and Mean Change in in FSA Mathematics for ESE Students by Grade Level

	Levene's Test for Equality of Variances		t-Test for Equality of Means					95% Confidence Interval of the Difference	
Variables	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
FSA Math 6	1.381	.243	-.422	85	.674	-1.058	2.504	-6.037	3.921
FSA Math 7	.121	.729	.276	108	.783	1.185	4.297	-7.333	9.703
FSA Math 8	2.592	.113	.521	54	.604	3.827	7.344	-10.897	18.551

Note. ESE = Exceptional Student Education; FSA = Florida Standards Assessment.

Table 42 includes frequency of participation in tutoring and mean change in FSA Mathematics by tutoring delivery model for ESE students. ESE students at School A receiving computer-based tutoring for 2 (M=4.00, SD=4.243) and 5-7 (M=12.00) hours had a higher mean change than ESE students who did not participate in any tutoring (M=1.66, SD=13.122). ESE students at School B and participated in small group tutoring for 5-7 (M=M=10.00), 20-22 (m=2.00), and 23-27 (M=2.50, SD=12.234) hours had a higher mean change than students who did not participate in tutoring (M=1.14, SD=13.973). ESE students at School C who participated in a combination of computer- based and small group tutoring for 5-7 (M=20.00) hours had a higher mean change than students who did not participate in tutoring (M=4.17, SD=14.471).

Table 42

Group Statistics: Participation and Mean Change in FSA Mathematics for ESE Students by Tutoring Delivery Model

	School A			School B			School C		
Participation Hours	n	Mean Change	Std. Deviation	n	Mean Change	Std. Deviation	n	Mean Change	Std. Deviation
0	90	1.66	13.122	58	1.14	13.973	65	4.17	14.471
1	4	.00	9.866	0			4	3.75	16.132
2	2	4.00	4.243	0			4	-.50	7.937
3-4				2	-8.50	3.536			
5-7	1	12.00		1	10.00		1	20.00	
8-13	4	-.25	14.315	0					
14-19				0			3	1.33	4.163
20-22				1	2.00		1	.00	
23-27				4	2.50	12.234	1	-3.00	
28-35				2	-8.00	4.243	1	-11.00	
36+							4	3.25	14.997

Note. ESE = Exceptional Student Education; FSA = Florida Standards Assessment.

School A = computer-based tutoring; School B = small group tutoring; School C = mixed mode of computer-based and small group tutoring.

An independent samples t-test was conducted to determine the difference between mean change and participation in tutoring for ESE students by tutoring delivery model at each of the three schools. The mean change in FSA Mathematics was slightly higher for ESE students at School A who participated in computer-based tutoring (M=1.73, SD=10.335) than ESE students who did not participate in tutoring (M=1.66, SD=1.66). Table 43 shows the frequency of participation in tutoring and mean change in FSA Mathematics for ESE students by tutoring delivery model. No significance at $p < .05$ was identified as reflected in Table 44.

Table 43

Group Statistics: Participation and Mean Change in FSA Mathematics for ESE Students by Tutoring Delivery Model

Participation	n	Mean	Std. Deviation	Std. Error
School A				
No Tutoring	90	1.66	13.122	1.383
Tutoring	11	1.73	10.335	3.116
School B				
No Tutoring	58	1.14	13.973	1.835
Tutoring	10	-1.10	9.826	3.107
School C				
No Tutoring	65	4.17	14.471	1.795
Tutoring	19	1.89	11.170	2.563

Note. School A = computer-based tutoring; School B = small group tutoring; School C = mixed mode of computer-based and small group tutoring.

Table 44

Independent Samples t-Test: Participation in Tutoring and Mean Change in FSA Mathematics for ESE Students by Tutoring Delivery Model

	Levene's Test for Equality of Variances		t-Test for Equality of Means					95% Confidence Interval of the Difference	
Variables	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
School A	1.186	.279	.017	99	.986	.072	4.110	-8.084	8.227
School B	1.615	.208	-.485	66	.629	-2.238	4.617	-11.455	6.979
School C	1.559	.215	-.631	82	.530	-2.274	3.603	-9.442	4.893

Note. ESE = Exceptional Student Education; FSA = Florida Standards Assessment; School A = computer-based tutoring; School B = small group tutoring; School C = mixed mode of computer-based and small group tutoring.

An independent samples t-test was conducted to determine the difference between mean change of developmental scale scores on the 2014-2015 and 2015-2016 FSA English Language Arts and participation in tutoring for ESE students. The mean difference of the 51 students served in an ESE program who participated in any model of tutoring (M=4.18, SD=15.489) and the 214 students served in an ESE program who did not participate in reading tutoring (M=3.96, SD=13.519) was .219. The independent samples t-test results, t (265) = .101, p=.920 (2-tailed), indicated students who participated in tutoring had a slightly higher change in accountability score, but the difference between those who participated in tutoring and those who did not participate in tutoring was not statistically significant at $p<.05$.

An independent samples t-test was conducted to determine the difference between mean change of developmental scale scores on the 2014-2015 and 2015-2016 FSA Mathematics and participation in tutoring for ESE students. The mean difference for the 40 students served in an

ESE program who participated in any model of tutoring (M=1.10, SD=10.436) and the 213 students served in an ESE program who did not participate in mathematics tutoring (M=2.28, SD=13.770) was -1.182. The independent samples t-test results, t (253) = -.622, p=.536 (2-tailed), indicated the difference between those who did and did not participate in tutoring was not statistically significant at p<.05. These results are reflected in Tables 45 and 46.

Table 45

Group Statistics: Participation in Tutoring for ESE Students and Change in Accountability Outcome

Assessment	Tutoring Y/N	n	Mean	Standard Deviation	Standard Error
FSA ELA	Y	51	4.18	15.489	2.169
	N	214	3.96	13.519	.924
FSA Mathematics	Y	40	1.10	10.436	1.650
	N	213	2.28	13.770	.944

Note. ESE = Exceptional Student Education; FSA = Florida Standards Assessment; ELA = English Language Arts.

Table 46

Independent Samples t-Test: Participation in Tutoring for ESE Students and Change in Accountability Outcome

	Levene's Test for Equality of Variances		t-Test for Equality of Means					95% Confidence Interval of the Difference	
Variables	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
FSA ELA	.656	.419	.101	263	.920	.219	2.168	-4.051	4.488
FSA Mathematics	3.954	.048	-.622	67.347	.536	-1.182	1.901	-4.975	2.612

Note. ESE = Exceptional Student Education; FSA = Florida Standards Assessment; ELA = English Language Arts.

Data Analysis for Research Question 4

How does change in achievement on state assessments for English learners (EL) who are in the English for Speakers of Other Language (ESOL) program and participate in tutoring compare to change in achievement on state assessments for ELs who do not participate?

Independent samples t-tests were performed to determine the difference between change in student outcome and participation in tutoring for English learner students who were served in an EL program. Tutoring programs focused on reading and mathematics. Table 47 shows the frequency of participation in tutoring and mean change in FSA ELA by grade level assessment for English learners. On ELA 6, EL students who participated in 1 (M=11.33, SD=10.33), 5-7 (M=3.67, SD=14.503), 8-13 (M=7.00, SD=32.527), 14-18 (M=8.20, SD=5.975), 22-27 (M=8.33, SD=3.786), and 28-34(M=14.00) hours held a higher mean change than EL students who did not participate in tutoring (M=2.44, SD=13.876). On FSA ELA 7, EL students who participated in 1

(M=29.75, SD=19.449), 2 (M=51.00), 5-7 (M=14.33, SD=2.887), 8-13 (M=10.33, SD=11.060), 22-27 (M=10.00), 28-34 (M=23.00) and 35+ (M=51.00) hours had a higher mean change than EL students who did not participate in tutoring (M=8.40, SD=16.094). On FSA ELA 8, EL students who participated in 2 (M=1350, SD=4.950), 3-4 (M=47.00), 5-7 (M=10.50, SD=7.778), and 28-34 (M=12.00) hours of tutoring had a higher mean change than EL students who did not participate in tutoring (M=11.47, SD=14.505).

Table 47

Group Statistics: Participation in Tutoring for English Learner Students and Mean Change in FSA English Language Arts

	English Language Arts 6			English Language Arts 7			English Language Arts 8		
Participation Hours	n	Mean Change	Std. Deviation	n	Mean Change	Std. Deviation	n	Mean Change	Std. Deviation
0	86	2.44	13.876	65	8.40	16.094	58	11.47	14.505
1	6	11.33	10.033	4	29.75	19.449	1	-9.00	
2	4	-3.25	11.558	1	51.00		2	13.50	4.950
3-4	2	-13.50	13.435	1	-2.00		1	47.00	
5-7	3	3.67	14.503	3	14.33	2.887	2	10.50	7.778
8-13	2	7.00	32.527	3	10.33	11.060			
14-18	5	8.20	5.975				2	5.00	7.7071
19-21	1	-15.00					1	-6.00	
22-27	3	8.33	3.786	1	10.00		1	-10.00	
28-34	1	14.00		1	23.00		1	12.00	
35+	1	-3.00		1	51.00				

An independent samples t-test was conducted to determine the difference between mean change and participation in tutoring for EL student by grade level assessment. The mean change was higher for EL students who were assessed on the FSA ELA 6 (M=4.11, SD=12.985) and FSA ELA 7 (M=21.73, SD=18.172) assessment who participated in tutoring than for those who did not participate in tutoring and were assessed on the FSA ELA 6 (M=2.44, SD=13.876) and FSA ELA 7 (M=8.40, SD=16.094). Table 48 displays the frequencies of participation in tutoring and mean changes in FSA ELA for EL students assessed on each of the grade level assessments. Significance was identified for EL students assessed on FSA ELA 7. The independent samples t-test results for EL students assessed on ELA 7, t (80) = 2.823, p=.006 (2-tailed), indicated the difference between those who participated in tutoring and those who did not participated in tutoring was statistically significant at p<.05. No significance was identified for FSA ELA 6 & FSA ELA 8. These results are reflected in Table 49.

Table 48

Group Statistics: Participation in Tutoring and Mean Change in EL Students' FSA English Language Arts

Participation	n	Mean	Std. Deviation	Std. Error
ELA 6				
No Tutoring	86	2.44	13.876	1.496
Tutoring	28	4.11	12.985	2.454
ELA 7				
No Tutoring	65	8.40	16.094	1.996
Tutoring	15	21.73	18.172	4.692
ELA 8				
No Tutoring	58	11.47	14.505	1.905
Tutoring	11	8.36	16.033	4.834

Table 49

Independent Samples t-Test: Participation in Tutoring and Mean Change in EL Students' Florida Standards Assessment

	Levene's Test for Equality of Variances		t-Test for Equality of Means					95% Confidence Interval of the Difference	
Variables	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
FSA ELA 6	.069	.793	.560	112	.577	1.665	2.974	-4.226	7.557
FSA ELA 7	.363	.549	2.823	78	.006	13.333	4.722	3.932	22.735
FSA ELA 8	.002	.9665	-.640	67	.525	-3.102	4.848	-12.779	6.576

Table 50 includes frequency of participation in tutoring and mean change in FSA ELA by tutoring delivery model for EL students. EL students at School A receiving computer-based tutoring for 1 (M=13.00, SD=17.021), 2 (M=10.00), 3-4 (M=22.50, SD=34.648), 5-7 (M=15.25, SSD=2.986), 8-13 (M=9.00, SD=18.138), and 22-27 (M=10.00) hours of tutoring had a higher mean change than EL students who did not participate in any tutoring (M=7.09, SD=13.735). EL students at School B who participated in small group tutoring for 14-18 (M=7.00) and 28-34 (M=17.50, SD=7.778) hours of tutoring had a higher mean change than EL students who did not participate in tutoring (M=5.74, SD=15.190). EL students at School C who participated in a combination of computer-based and small group tutoring for 1 (M=24.67, SD= 20.306), 2 (M=9.17, SD= 23.786), 14-18 (M=13.00), 28-34 (M=14.00), and 35+ (M=24.00, SD=38.184) hours of tutoring had a higher mean change than EL students who did not participate in tutoring (M=6.70, SD=17.210).

Table 50

Group Statistics: Participation in Tutoring and Mean Change in FSA English Language Arts for English Learner Students by Tutoring Delivery Model

	School A			School B			School C		
Participation Hours	n	Mean Change	Std. Deviation	n	Mean Change	Std. Deviation	n	Mean Change	Std. Deviation
0	109	7.09	13.735	23	5.74	15.190	77	6.70	17.210
1	8	13.00	17.021				3	24.67	20.306
2	1	10.00					6	9.17	23.786
3-4	2	22.50	34.648				2	-13.50	13.435
5-7	4	15.25	2.986				4	3.50	11.091
8-13	5	9.00	18.138						
14-18	5	6.20	6.496	1	7.00		1	13.00	
19-21				1	-6.00		1	-15.00	
22-27	1	10.00		3	3.67		1	4.00	
28-34				2	17.50	7.778	1	14.00	
35+							2	24.00	38.184

Note. FSA = Florida Standards Assessment; School A = computer-based tutoring; School B = small group tutoring; School C = mixed mode of computer-based and small group tutoring.

An independent samples t-test was performed to determine the difference between mean change and participation in tutoring for EL students by tutoring delivery model. The mean change for EL students who participated in tutoring at School A receiving computer-based tutoring, (M=11.77, SD=14.465), small group tutoring at School B, (M=6.71, SD=11.280), and a combination of both computer-based and small group tutoring at School C (M=8.57, SD=20.760), was higher than EL students who did not participate in any tutoring and attended School A (M=7.09, SD=13.735), School B (M=5.74, SD=15.190), and School C (M=6.70, SD=17.210). Table 51 includes the frequency of participation in tutoring and mean changes in FSA ELA for EL students by tutoring delivery model. No significance was identified at $p < .05$. Results of the analysis are shown in Table 52.

Table 51

Group Statistics: Participation in Tutoring and Mean Change in FSA English Language Arts for English Learner Students by Tutoring Delivery Model

Participation	n	Mean	Std. Deviation	Std. Error
School A				
No Tutoring	109	7.09	13.735	1.316
Tutoring	26	11.77	14.465	2.837
School B				
No Tutoring	23	5.74	15.190	3.167
Tutoring	7	6.71	11.280	4.263
School C				
No Tutoring	77	6.70	17.210	3.167
Tutoring	21	8.57	20.760	4.263

Note. FSA = Florida Standards Assessment; ELA = English Language Arts.

Table 52

Independent Samples t-Test: Participation in Tutoring and Mean Change in FSA ELA for EL Students by Tutoring Delivery Model

	Levene's Test for Equality of Variances		t-Test for Equality of Means					95% Confidence Interval of the Difference	
Variables	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
School A	.001	.979	1.545	133	.125	4.677	3.028	-1.313	10.667
School B	.499	.486	.156	28	.877	.975	6.234	-11.795	13.745
School C	.352	.555	.422	96	.674	1.870	4.433	-6.29	10.670

Note. ESE = Exceptional Student Education; FSA = Florida Standards Assessment; ELA = English Language Arts; School A = computer-based tutoring; School B = small group tutoring; School C = mixed mode of computer-based and small group tutoring.

Table 53 displays frequency of participation in tutoring and mean change in FSA Mathematics by grade level assessment for EL students. On FSA Mathematics 6, EL students who participated in 8-13 (M=12.00), 20-22 (M=4.00, SD=12.490), and 23-27 (M=11.00) hours of tutoring had a higher mean change than EL students who did not participate in tutoring (M=.01, SD=12.714). On FSA Mathematics 7, EL students who participated in 3-4 (M=6.33, SD=5.774), 8-13 (M=21.00), and 23-27 (M=21.50, SD=4.950) hours had a higher mean change than EL students who did not participate in tutoring (M=4.56, SD=15.896). On FSA Mathematics 8, EL students who participated in 1 (M=17.00), 3-4 (M=23.00), 8-13 (M=28.00), and 28-35 (M=20.50, SD=4.950) hours of tutoring had a higher mean change that EL students who did not participate in tutoring (M=5.88, SD= 15.464).

Table 53

Tutoring Participation for EL Students and Mean Change in FSA Mathematics by Grade Level

	Mathematics 6			Mathematics 7			Mathematics 8		
Participation Hours	n	Mean Change	Std. Deviation	n	Mean Change	Std. Deviation	n	Mean Change	Std. Deviation
0	82	.01	12.714	72	4.56	15.896	59	5.88	15.464
1	4	-12.25	8.770	4	-12.00	25.742	1	17.00	
2	5	-2.20	14.114	1	1.00				
3-4	2	-14.50	19.092	3	6.33	5.774	1	23.00	
5-7	4	-.50	18.412	2	-1.00	5.657	2	.50	16.263
8-13	1	12.00		1	21.00		1	28.00	
14-19	7	-3.00	8.226						
20-22	3	4.00	12.490						
23-27	1	11.00		2	21.50	4.950			
28-35							2	20.50	4.950
36+	6	-7.33	15.895						

An independent samples t-test was conducted to determine the difference between mean change in FSA Mathematics and participation in tutoring for EL students by grade level assessment. The mean change was higher for ELs who were assessed on the FSA Mathematics 8 assessment and participated in any model of tutoring at the three schools (M=15.71, SD=12.932) than those ELs who did not participate in school based tutoring (M=5.88, SD=15.464). Table 54 contains frequencies of participation in tutoring and mean change in FSA Mathematics for English learners assessed on each of the grade level assessments. No significance was identified for any of the grade levels at $p < .05$. Results are shown in Table 55.

Table 54

Group Statistics: Participation in Tutoring and Mean Change in EL Students' FSA Mathematics

Participation	n	Mean	Std. Deviation	Std. Error
Mathematics 6				
No Tutoring	82	.01	12.714	1.404
Tutoring	33	-3.67	13.336	2.322
Mathematics 7				
No Tutoring	72	4.56	15.896	1.873
Tutoring	13	2.62	18.455	5.119
Mathematics 8				
No Tutoring	59	5.88	15.464	2.013
Tutoring	7	15.71	12.932	2.013

Table 55

Independent Samples t-Test: Participation in Tutoring and Mean Change of English Learner Students in FSA Mathematics

	Levene's Test for Equality of Variances		t-Test for Equality of Means					95% Confidence Interval of the Difference	
Variables	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
FSA Math 6	.476	.492	-1.384	113	.169	-3.679	2.658	-8.945	1.587
FSA Math 7	.073	.787	-.395	83	.694	-1.940	4.909	-11.704	7.824
FSA Math 8	.698	.407	1.613	64	.112	9.833	6.094	-2.342	22.007

Note. FSA = Florida Standards Assessment; ELA = English Language Arts.

Table 56 includes frequency of participation in tutoring and mean change in FSA Mathematics by tutoring delivery model for EL students. EL students at School A who participated in computer-based tutoring for 2 (M=8.00, SD=8.485), 5-7 (M=4.25, SD=11.117), 8-13 (M=21.00), and 14-19 (M=8.00) hours of tutoring had a higher mean change than EL students who did not participate in any tutoring (M=2.20, SD=14.980). EL students at School B who participated in small group tutoring for 20-22 (M=6.00, SD=16.971), 23-27 (M=21.50, SD=4.950), and 28-35 (M=20.50, SD=4.950) hours of tutoring had a higher mean change than EL students who did not participate in tutoring (M=5.54, SD=12.937). EL students at School C who participated in a combination of computer-based and small group tutoring for 3-4 (M=8.33, SD=12.858), 8-13 (M=8.00), and 23-27 (M=11.00) hours of tutoring had a higher mean change than EL students who did not participate in tutoring (M=3.97), SD= 15.125).

Table 56

Group Statistics: Participation in Tutoring and Mean Change of English Learner Students in FSA Mathematics by Tutoring Delivery Model

	School A			School B			School C		
Participation Hours	n	Mean Change	Std. Deviation	n	Mean Change	Std. Deviation	n	Mean Change	Std. Deviation
0	119	2.20	14.980	26	5.54	12.937	68	3.97	15.125
1	4	-6.00	19.218				5	-11.20	21.241
2	2	8.00	8.485				4	-6.50	12.288
3-4	3	-4.00	21.378				3	8.33	12.858
5-7	4	4.25	11.117				4	-5.00	16.062
8-13	1	21.00					2	8.00	
14-19	1	8.00		1	-12.00		5	-3.40	7.127
20-22				2	6.00	16.971	1	.00	
23-27				2	21.50	4.950	1	11.00	
28-35				2	20.50	4.950			
36+							6	-7.33	15.895

Note. FSA = Florida Standards Assessment; School A = computer-based tutoring; School B = small group tutoring; School C = mixed mode of computer-based and small group tutoring.

An independent samples t-test was conducted to determine the difference between mean change and participation in tutoring for English learner students by tutoring delivery model. The mean change in FSA Mathematics was higher for EL students at School A who participated in small group tutoring (M=12.00, SD=14.776) than EL students who did not participate in tutoring (M=5.54, SD=12.937). Table 57 contains frequencies of participation in tutoring and mean change in FSA Mathematics for EL students by tutoring delivery model. The independent samples t-test results for students served in an ESOL program and served at School B using small group instruction, $t(33) = 1.140$, $p=.042$ (2-tailed), indicated the difference between those who participated in tutoring and those who did not participate in tutoring was statistically significant at $p<.05$. However, as shown in Table 58, this resulted in a negative mean change for EL students who participated in tutoring. No significance was identified at School A for students receiving computer-based tutoring and School C for students who received a mix of both computer-based and small group tutoring at $p < .05$.

Table 57

Group Statistics: Participation in Tutoring and Mean Change in FSA Mathematics for Students by Tutoring Delivery Model

Participation	n	Mean	Std. Deviation	Std. Error
School A				
No Tutoring	119	2.20	14.980	1.373
Tutoring	15	1.73	15.392	3.974
School B				
No Tutoring	26	5.54	12.937	2.537
Tutoring	7	12.00	14.776	5.585
School C				
No Tutoring	68	3.97	15.125	1.834
Tutoring	31	-2.81	15.404	2.767

Table 58

Independent Samples t-Test: Participation in Tutoring and Mean Change in English Learner Students' FSA English Language Arts by Tutoring Delivery Model

	Levene's Test for Equality of Variances		t-Test for Equality of Means					95% Confidence Interval of the Difference	
Variables	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
School A	.039	.844	-.114	132	.910	-.468	4.116	-8.611	7.674
School B	.083	.776	1.140	31	.263	6.462	5.669	-5.100	18.023
School C	.094	.759	-2.056	97	.042	-6.777	3.297	-13.320	-.234

Note. FSA = Florida Standards Assessment; School A = computer-based tutoring; School B = small group tutoring; School C = mixed mode of computer-based and small group tutoring.

An independent samples t-test was conducted to determine the difference between mean change of developmental scale scores on the 2014-2015 and 2015-2016 FSA English Language

Arts and participation in tutoring for English learners. The difference in the mean scores of the 54 EL students who participated in reading tutoring (M=9.87, SD=16.717) and the 209 EL students who did not participate in reading tutoring (M=6.80, SD=15.191) was 3.071. The independent samples t-test results, t (263) = 1.297, p=.196 (2-tailed), indicated students who participated in tutoring had a greater DSS change in reading, but the difference between those who participated in tutoring and those who did not was not statistically significant at p<.05.

An independent samples t-test was conducted to determine the difference between mean change in developmental scale scores on the 2014-2015 and 2015-2016 FSA Mathematics and participation in tutoring for English learners. The difference in the mean scores of the 53 EL students who participated in any model of school based tutoring (M=.43, SD=15.831) and the 213 students served in an ESOL program who did not participate in mathematics tutoring (M=3.17, SD=14.777) was -1.182. The independent samples t-test results, t (266) = -1.191, p=.235 (2-tailed) indicated the difference between those who participated in mathematics tutoring and those who did not participate in mathematics school based tutoring was not statistically significant at p<.05. These results are displayed in Tables 59 and 60.

Table 59

Group Statistics: Participation in Tutoring of English Learner Students and Change in Accountability Outcome

Assessment	Tutoring Y/N	n	Mean	Standard Deviation	Standard Error
FSA ELA	Y	54	9.87	16.717	2.275
	N	209	6.80	15.191	1.051
FSA Mathematics	Y	53	.43	15.831	2.175
	N	213	3.17	14.777	1.013

Table 60

Independent Samples t-Test: Participation in Tutoring of English Learner Students and Change in Accountability Outcome

	Levene's Test for Equality of Variances		t-Test for Equality of Means					95% Confidence Interval of the Difference	
Variable	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
FSA ELA	.017	.896	1.297	261	.196	3.071	2.368	-1.592	7.734
FSA Mathematics	.832	.362	-1.142	76.112	.235	-2.740	2.301	-7.271	1.791

Data Analysis for Research Question 5

How does the change in achievement on state assessments differ among the three tutoring models?

A one-way ANOVA was utilized to compare the effects of tutoring on student achievement with the use of computer-based tutoring, small-group tutoring and a mixed-mode of small group and tutoring. Three tutoring models were utilized to determine the difference between the model of tutoring and change in student achievement. School A utilized computer-based tutoring; School B utilized small group tutoring; and School C utilized a mixed mode of computer-based and small group tutoring. Changes in student achievement scores on the FSA ELA for the 92 students who participated in computer-based tutoring (M= 6.15, SD= 13.620), the 104 students who participated in small-group tutoring (M= 6.27, SD= 13.870), and the 114 students who participated in a mixed-method of small group tutoring and computer-based tutoring (M=5.31, SD 12.070) were determined. The findings were not statistically significant in

reading on the FSA English Language Arts at the p< .05 level in the comparison of computer-based, small-group, and mixed-mode of both in tutoring F (2, 307) = .173, p=.841.

Changes in student achievement scores on the FSA Mathematics of the 65 students who participated in computer-based tutoring (M= .66, SD= 12.111), the 103 students who participated in small-group tutoring (M= 2.97, SD= 12.678), and the 119 students who participated in a mixed-method of small-group tutoring and computer-based tutoring (M=1.63, SD 1.63) were determined. The findings were not statistically significant for the FSA Mathematics at the p< .05 level comparing computer-based, small-group, and mixed-mode of both in tutoring F (2, 284) = .645, p=.525. The results of the analysis are displayed in Tables 61 and 62.

Table 61

Group Statistics: Model of Tutoring and Change in Accountability Outcome

						95% Confidence Interval for Mean			
Assessment	School	n	Mean	Std. Deviation	Std. Error	Lower Bound	Upper Bound	Min	Max
FSA ELA	A	92	6.15	13.620	1.420	3.33	8.97	-40	47
	B	114	5.31	12.070	1.130	3.07	7.55	-19	48
	C	104	6.27	13.870	1.360	3.57	8.97	-29	51
	Total	310	5.88	13.123	.745	4.41	7.35	-40	51
FSA Mathematics	A	65	.66	12.111	1.502	-2.34	3.66	-29	22
	B	103	2.97	12.678	1.249	.49	5.45	-26	29
	C	119	1.63	14.285	1.310	-.96	4.22	-39	50
	Total	287	1.89	13.234	.781	.35	3.43	-39	50

Note. FSA ELA = Florida Standards Assessment English Language Arts.

Table 62

One-way ANOVA: Relationship of Model of Tutoring and Change in Accountability Outcome

Variable		Sum of Squares	df	Mean Squares	F	Sig.
FSA ELA	Between Groups	59.998	2	29.999	.173	.841
	Within Groups	53156.585	307	173.148		
	Total	53216.584	309			
FSA Mathematics	Between Groups	226.454	2	113.227	.645	.525
	Within Groups	49861.198	284	175.568		
	Total	50087.652	286			

Note. FSA ELA = Florida Standards Assessment English Language Arts.

Summary

In this chapter, quantitative data were analyzed based on the conclusions of the causal comparative study. Descriptive variables for both categorical and continuous variables were identified and used in the analysis of data to respond to the five research questions. Chapter 5 contains a summary and discussion of the findings of this study. The implications of this causal comparative study and recommendations for future research are also discussed.

CHAPTER 5
SUMMARY, DISCUSSION, AND RECOMMENDATIONS

Introduction

This chapter reiterates the purpose of this study and describes the population, research design, and instrumentation utilized to determine the relationship between participation in tutoring and outcomes on student achievement. The subsequent sections further discuss and summarize the findings with respect to the five research questions, suggest implications for policy and practice, limitations to the study, and recommendations for further research.

Purpose of the Study

The purpose of this study was to determine the relationship between participation in school based tutoring and change in outcomes of student achievement on state assessments in reading and mathematics in an urban middle school setting. The researcher intended to determine if a statistically significant relationship existed between participation in school-based tutoring during the 2015-2016 school year and change in outcome on FSA English Language Arts and FSA Mathematics from the 2014-2015 and 2015-2016 assessments. The researcher also studied the relationship between participation and change in student outcomes for students who participated in an exceptional student education program or English learner program and compared change in outcomes based on the model of tutoring experienced by students.

Population, Research Design, and Instrumentation

For this study, a convenience sample of three middle schools was selected, all received funding from Title I and offered school-based tutoring for enrolled students. All three schools

identified individuals who participated in tutoring, thereby allowing the researcher to focus on the relationship between participation in tutoring and change in outcomes on state assessments associated with accountability measures. A causal comparative study was conducted to collect quantitative data from students who did and did not participate in tutoring and were enrolled at one of the three middle schools. Quantitative data were analyzed to correlate archival data of tutoring attendance logs and accountability outcomes on FSA ELA and FSA Mathematics for the 2014-2015 and 2015-2016 school years. In addition, subgroups of students who participated in an exceptional student education program or English learner program were analyzed to determine the difference between tutoring delivery models and the change in outcomes on state assessments for students receiving the tutoring services and students who did not.

Statistical analyses, including a Pearson Correlation, independent samples t-tests, and one-way ANOVA, were utilized to answer the five research questions which guided this study. All data were analyzed utilizing the Statistical Package for Social Sciences (SPSS), and the respective tests were conducted to determine the significance of the research findings. The variables were used to identify if the change in student outcomes differed based on (a) the frequency of participation in tutoring, (b) whether students were served in an exceptional student education program, (c) whether students were served in an English learner program, and (d) the model of tutoring received.

Summary and Discussion of Findings

In this section, quantitative results and findings are discussed for each of the five research questions of this causal comparative study. In addition, the extent of agreement of the findings of the researcher with those of other relevant researchers are also discussed.

Research Question 1

What is the relationship between students' frequency of participation of in tutoring and change in performance outcomes of state assessments?

The findings from the quantitative analysis utilizing Pearson Correlations were that a statistical significance did not exist between the frequencies of participation in tutoring as determined by the total number of hours' individuals attended tutoring and change in student achievement outcomes on the FSA ELA and FSA Mathematics for the 2014-2015 and 2015-2016 school years. Similar to Maestra (2015), the researcher did identify ranges of hours participated in tutoring; no significance was identified. Although the findings were not statistically significant, it should be considered that on each of the grade level Florida Standards Assessment in ELA the mean change for 60% of the ranges by hours of participation was higher than the mean change for students who did not participate in tutoring. Therefore, it was determined to be educationally relevant that tutoring can impact student achievement in reading. On the FSA Mathematics 6, only students who participated in 20-22 hours of tutoring had a higher mean change than students who did not participate in tutoring. The mean change for students assessed on FSA Mathematics 6 who did not participate in tutoring was negative. Therefore, it would be critical to focus on core instruction. The mean change for 92% of ranges by hours of tutoring displayed an even more extreme negative mean change indicated that

strategies used throughout 6th grade tutoring should perhaps be revised. On the FSA Mathematics 6, only students who participated in 20-22 hours of tutoring had a higher mean change than students who did not participate in tutoring. The mean change for students assessed on FSA Mathematics 6 who did not participate in tutoring was negative. On FSA Mathematics 8, the mean change for 60% of ranges by hours of tutoring attended was higher than the mean change for students who did not participate in tutoring. Therefore, it is educationally relevant for school leaders to consider the implementation effect on students tutored in mathematics.

Research Question 2

How does change in achievement on state assessments for students who participate in tutoring compare to change in achievement on state assessments for students who do not participate?

The findings from the independent samples t-tests conducted revealed that the relationship between participation in tutoring for reading or mathematics and change in student outcomes was not statistically significant. Students were divided into two groups, those who attended and those who did not attend tutoring. Although the findings were not statistically significant, the mean change in student outcome on FSA ELA was slightly higher for students who did participate in tutoring than those who did not participate in tutoring.

Although not statistically significant, the mean change DSS on the FSA ELA for students who participated in tutoring was 1.04 higher than students who did not participate. The change mean for students in tutoring who were tutored in reading and assessed on FSA ELA 6 and FSA ELA 8 had nearly a two-point higher mean change than students who did not participate in tutoring. In contrast, the mean change DSS on the FSA Mathematics for students who did not

participate in tutoring was .28 higher. However, it is relevant to note that students who were assessed on FSA Mathematics 7 and FSA Mathematics 8 and participated in tutoring had a higher mean change than students who were also assessed on the same assessment but did not participate in tutoring. The findings from this study contradict those of researchers displaying effects between SES and test gain scores in mathematics and no effect for those who participated in reading (Springer et al., 2014; Zimmer et al., 2010) when observing all tutored students compared to non-tutored student regardless of assessment. It is critical to identify areas of strength in tutoring and replicate or improve the strategies to impact a larger group of students.

Research Question 3

How does change in achievement on state assessments for students who are classified in the Exceptional Student Education (ESE) program and participate in tutoring compare to change in achievement on state assessments for ESE students who do not participate?

The findings from the two independent samples t-tests conducted showed that the relationship between ESE students who participated in tutoring for reading or mathematics and change in student outcomes was not statistically significant. ESE students were divided into two groups, those who attended tutoring and those who did not attend tutoring. Although the findings were not statistically significant, the mean for ESE students' change in outcome on FSA ELA was slightly higher for students who did participate in tutoring than those who did not participate in tutoring.

To delve deeper, ESE students were first divided by grade level assessment followed by two groups, those who attended tutoring and those who did not attend tutoring. The mean change for ESE students who were assessed on FSA ELA 6 and FSA ELA 8 was higher for those

who participated in tutoring than those who did not participate in tutoring. The mean change for ESE students who were assessed on FSA Mathematics 7 and FSA Mathematics 8 was higher for those who participated in tutoring than those who did not participate in tutoring. Therefore, it is educationally relevant for school leaders to consider researched based strategies to serve ESE students through tutoring.

Research Question 4

How does change in achievement on state assessments for students who are in the English for Speakers of Other Language (ESOL) program and participate in tutoring compare to change in achievement on state assessments for those who do not participate in tutoring?

The findings from the two independent samples t-tests conducted showed no statistical significance in the relationship between English learners (EL) who participated in tutoring for reading or mathematics and change in student outcomes. English learners were divided into two groups, those who attended and those who did not attend tutoring. Although the findings were not statistically significant, the mean for English learners' change in outcome on the FSA ELA was higher for students who did participate in tutoring than those who did not participate in tutoring.

To delve deeper, English learners were divided by grade level assessment and then into two groups, those who attended tutoring and those who did not attend tutoring. The mean change for English learners who were assessed on FSA ELA 6 and FSA ELA 7 was higher for ELs who participated in tutoring than ELs who did not participate in tutoring. On FSA Math 8, the mean change for ELs who participated in tutoring tripled that of the mean change for ELs

who did not participate in tutoring. Tutoring can be effective for English learners if the appropriate strategies and methods are put in place.

Research Question 5

How does the change in achievement on state assessments differ among the three tutoring models?

The results of a one-way ANOVA revealed no difference between small group tutoring, computer-based tutoring, and a mixed mode of small group and computer-based tutoring. The quantitative analysis indicated that, regardless of hours participated in tutoring, the means associated with each of the models of tutoring did not differ significantly. In order to provide an effective after-school program in an urban setting one must provide a well-trained staff, create a structured program, involve children and families in the planning process, and establish methods to evaluate the program (Fashola, 1998).

Although an ANOVA was utilized to answer Research Question 5, several independent samples t-tests were used (to respond to Research Questions 2-4) to delve deeper into the success of each model of tutoring focused on all students, ESE students, and English learners. When comparing the three-tutoring delivery models, all students who were assessed on either the FSA ELA 6, FSA ELA 7, or FSA ELA 8 were divided into two groups: those who participated in tutoring and those who did not participate in tutoring at each of the schools.

The mean change for all students who participated in tutoring for each of the delivery models was higher than the mean change for all students who attended the same school but did not participate in tutoring. A mixed mode of computer-based tutoring and small group tutoring held the highest mean difference when comparing the three tutoring delivery models for all

students who participated in FSA ELA. ESE students who were assessed on FSA ELA and attended computer-based tutoring at school A and students who attended small group tutoring at school B had a higher mean change than ESE students who did not participate in tutoring at those two schools. The mean change for ESE students who participated in small group tutoring was three times as high as that of ESE students who attended the same school but did not participate in tutoring. Although not statistically significant, it is evident that ESE students who had access to solely small group tutoring almost doubled the mean change of ESE students who used computer-based tutoring and was more than four times higher than ESE students who received a mixed mode of tutoring. The mean change in FSA ELA for English learners who participated in tutoring for each of the delivery models was higher than the mean change for English learners who attended the match school but did not participate in tutoring. The highest mean difference between ELs who did and did not participate in tutoring and the highest mean change among all ELs who participated in computer-based tutoring was found for ELs who participated in tutoring at School A. Therefore, based on the findings for students assessed on FSA ELA, tutoring delivery models depend on student population. A mixed mode including both small group and computer-based tutoring held highest mean change overall for all who participated; small group tutoring held the highest mean change for ESE students; and computer-based tutoring had the highest mean change for English learners.

The same independent t-tests were used throughout Research Questions 2, 3, and 4 to further explore the effects between delivery models for all students, ESE students, and English learners. When comparing the tutoring delivery models, all students who were assessed on FSA Mathematics 6, FSA Mathematics 7, and FSA Mathematics 8 were divided into two groups:

those who did and did not participate in tutoring at each of the schools. The mean change for all students who participated in a mixed mode of computer-based and small group tutoring was the only mean change found to have a higher mean change than all students who attended the matched school but did not participate in tutoring. ESE students who participated in computer-based tutoring at School A were found to be involved in the only model that displayed a higher mean change for ESE students who participated in tutoring than ESE students who attended the same school but did not participate in tutoring. However, the highest mean change for ESE students participating in tutoring was found at School C utilizing a mixed mode of computer-based and small group tutoring. English learners who participated in a mixed mode of small group and computer-based tutoring at School C were the only group of ELs who were tutored and displayed a higher mean change than ELs who attended the matched school but did not attend tutoring. The mean change for ELs who participated in tutoring was nearly three times higher than that of ELs who did not participate in tutoring. Therefore, based on findings for students assessed on FSA Mathematics, the tutoring delivery model utilized can be a component to assist in guiding students to success in mathematics. The overall population of students being tutored demonstrated the most success when enrolled in a mixed mode of computer-based and small group tutoring for all students. Computer-based tutoring was found to be most beneficial for ESE students, and a mixed mode of computer-based and small group tutoring was determined to be most successful with English learners.

Limitations of the Study

There are multiple limitations to be considered by those seeking to interpret the findings from this study. The researcher was vigilant with the data collection and implementation of the study; however, limitations did arise during the course of the study. The following limitations should be considered prior to interpretation of the findings of the research study conducted:

1. Rosters for one of the schools was received directly from the school and did not include 100% of the student population; therefore, data for 113 students were not collected.
2. Change in student achievement was calculated based on the difference of developmental scale scores from the 2014-2015 and 2015-2016 school years. Although each assessment score was based on a continuous scale, the baseline administration of FSA was given in 2014-2015 and was the first school year the assessment of new standards was reported. Scores from the 2014-2015 FSA were used in the standard setting process and were distributed as percentile scores until achievement level cut scores were adopted by the Florida Administrative Code (6A-1.09422) in January 2016. Therefore, with new standards being implemented there were several instructional shifts during the first years of the implementation of FSA.
3. Although there were additional participants in tutoring, students who were not assessed during both the 2014-2015 and 2015-2016 FSA administrations were not included in this study.
4. Students enrolled in ELA and ELA honors participate in the same assessment. Therefore, all ELA students who were assessed in both years' assessments were part

encompassed in the group of those who participate in tutoring. In mathematics, students who are on the accelerated pathway or receive a satisfactory score of a level 3 on FSA Mathematics 7 are generally enrolled in Algebra 1 or Geometry and are given the respective End-of-Course assessment. Only data for students who participated in their grade level assessment were included in the group of students who were tutored and all accelerated students were eliminated for the purpose of this study.

Implications for Policy and Practice

Although legislation has shifted from No Child Left Behind (NCLB) to Every Student Succeeds Act (ESSA), an urgency to provide tutoring interventions continues across the public-school system to provide support for all learners to demonstrate success. Based on the findings of this study, five implications that can apply to school-based and district-based administrators are presented. Each of the implications will be discussed as to how they might apply to educational policy or practice.

1. Tutoring programs should be highly structured and aligned with state assessed standards. This would allow for tutors to meet the needs of individuals rather than taking a generalized approach to tutoring. Providing lessons to implement in tutoring should encompass a structure to deliver content and address test-taking strategies to meet individual student needs.
2. Formative assessments should be utilized throughout the course of tutoring to provide evidence of success and allow data-based decisions to occur for adjustment in the

session if needed. Formative assessments provide a quick check of understanding to identify areas of need and areas of mastery. In addition, formative assessments allow for tutors to decipher further between misconceptions or fundamental processing issues. In order to provide a meaningful session, it is important for the tutor to collect ongoing data to plan their upcoming instructional tutoring session focused on individualized needs of the students (Green, Alderman, & Liechty, 2004; Munoz et al., 2012).

3. Tutoring sessions should be meaningful for each student in attendance. Providing monitoring tools for all students to understand the impact tutoring has on their education could increase consistency and desire to attend tutoring. School leaders should ensure their programs are highly engaging and geared towards individual students, driven through databased decisions.
4. Collaboration time for tutors and classroom teachers should be created to ensure student progress in tutoring is aligning to the individual students' educational needs. There should be a direct correlation of what the student is learning in school and what skills are being addressed through their tutoring program.
5. The most significant results of student achievement, as noted by Gordon (2009), have occurred when providing highly-qualified tutors. Opportunities for professional development should exist for all teachers who are delivering tutoring. The professional development should include best practices and strategies for providing differentiated instruction and addressing specific student needs. Furthermore, providing professional development for tutors will allow for teachers to delve deeper

into progressive strategies to meet the specific needs when tutoring ESE students, English learners and struggling learners. Providing effective professional development will fortify the impact of school-based tutoring programs.

6. School leaders must be selective in hiring tutors. Consider a criterion to reference when hiring tutors to ensure each tutor is equipped to provide effective tutoring to all students.
7. School leaders should be consistent in visiting and monitoring after-school tutoring, thereby providing continuity in support. This would allow for monitored feedback for tutoring, and movement toward optimal effectiveness of the school based tutoring program.

Recommendations for Further Research

The following recommendations for future research are presented based upon the findings of the current study.

1. Evidence of structures or specific methods used during each of the tutoring sessions were not monitored during this study, it could be replicated with a focus on monitoring the tutoring approach. This would create fidelity of specific tutoring strategies or approaches in determining the relationship between participation in tutoring and change in student outcomes.
2. A mixed-method design could be conducted to include qualitative findings determined by a survey from the tutor or student to further study the relationship

impact on tutoring programs. This would provide schools with specific findings to be monitored when implementing a school-based tutoring program.

3. This study could be replicated using student outcomes of state assessments from one school year rather than change score. This would allow for courses that are assessed on respective EOC, (e.g., Algebra 1, Geometry, and Civics at the middle school level) to be studied. This would provide further implications of standard aligned tutoring programs.
4. Develop a criterion for tutors and a checklist for effective tutoring. Monitor the compliance of tutors meeting the criteria and checklist compared to student growth on the Florida Standard Assessment.
5. This study could be replicated at the elementary level to study the difference between student performance on state assessments for students who have participated in tutoring and those who have not.

Summary

This study was conducted to better comprehend the impact of tutoring on student achievement and to expand the literature available on the relationship between tutoring and change in student outcomes on state assessments. The findings from this study showed that there were no statistical significance of change in student outcomes on state assessments based on frequency of tutoring participation, tutoring attendance, tutoring model, or student services groups. An intervention program provided to struggling learners should provide success, and the

findings from this study was a realization of the need to ensure schools are providing structured, engaging, and effective tutoring practices in order to lead all students to success.

Maestre (2015) found significant differences for tutoring impacting student outcomes in specific high school courses. The results from this study indicate that tutoring at the middle school level may not have the same result on student achievement. At the middle school level, students are assessed on statewide assessments specifically FSA ELA and FSA Mathematics and change in outcome was calculated. At the high school level, Maestra was able to provide a comparison of End-of-Course assessment attached to a specific course, e.g., students in Algebra 1 were tutored and assessed on the Algebra 1 EOC and students enrolled in Biology were tutored and assessed on the Biology EOC.

Although most of the findings were not statistically significant at the middle school level, school leaders should not eliminate after-school tutoring from consideration. Rather, they should focus on strengthening their tutoring programs and identifying areas in need of improvement. There are many variables in the relationship between attendance in tutoring and student outcomes for school leaders to focus on. School leaders hold the responsibility to offer intervention programs that best meet the needs of their student population. School leaders and decision makers who have a full understanding of effective tutoring models may increase the overall success of school based tutoring.

APPENDIX A
UCF INSTITUTIONAL REVIEW BOARD APPROVAL

University of Central Florida Institutional Review Board
Office of Research & Commercialization
12201 Research Parkway, Suite 501
Orlando, Florida 32826-3246
Telephone: 407-823-2901 or 407-882-2276
www.research.ucf.edu/compliance/irb.html

Approval of Exempt Human Research

From: **UCF Institutional Review Board #1**
FWA00000351, .IRB00001138

To: **Pamela L. Rajadhyax**

Date: **July 18, 2016**

Dear Researcher:

On 07/18/2016, the IRB approved the following activity as human participant research that is exempt from regulation:

Type of Review:	Exempt Determination
Project Title:	THE RELATIONSHIPS BETWEEN PARTICIPATION IN TUTORING AND ACCOUNTABILITY MEASURES IN THREE URBAN MIDDLE SCHOOLS
Investigator:	Pamela L Rajadhyax
IRB Number:	SBE-16-12390
Funding Agency:	
Grant Title:	
Research ID:	N/A

This determination applies only to the activities described in the IRB submission and does not apply should any changes be made. If changes are made and there are questions about whether these changes affect the exempt status of the human research, please contact the IRB. When you have completed your research, please submit a Study Closure request in iRIS so that IRB records will be accurate.

In the conduct of this research, you are responsible to follow the requirements of the Investigator Manual.

On behalf of Sophia Dziegielewski, Ph.D., L.C.S.W., UCF IRB Chair, this letter is signed by:

Joanne Muratori

Signature applied by Joanne Muratori on 07/18/2016 01:42:45 PM EDT

IRB Manager

APPENDIX B
OCPS APPROVAL TO CONDUCT THE STUDY

Orange County Public Schools
445 West Amelia Street • Orlando, FL 32801-1129 • Phone 407.317.3200 • www.ocps.net

Notice of Approval

Approval Date: 09/29/2016 Approval Number: **0056**

Project Title: *THE RELATIONSHIP BETWEEN PARTICIPATION IN TUTORING AND ACCOUNTABILITY MEASURES IN THREE URBAN MIDDLE SCHOOLS*

Requester: Pamela Rajadhyax

Project Director/Advisor: Dr. Rosemarye Taylor

Sponsor Agency/Institutional Affiliation: University of Central Florida

Thank you for your request to conduct research in Orange County Public Schools. We have reviewed and approved your application. This Notice of Approval expires one year after issue 09/28/2017.

If you are interacting with OCPS staff or students, you should have submitted a Principal Notification Form with your application. You may now email the principals who have indicated interest in participating, including this Notice as an attachment. After initial contact with principals, you may then email any necessary staff. This notice does not obligate administrators, teachers, students, or families of students to participate in your study; participation is entirely voluntary.

OCPS badges are required to enter any OCPS campus or building (see the Security Clearance Flow Chart).

You are responsible for submitting a Change Request Form to this office prior to implementing any changes to the currently approved protocol. If any problems or unexpected adverse reactions occur as a result of this study, you must notify this office immediately by emailing a completed Adverse Event Report Form. On or before 08/28/2017, you must complete a Request for Renewal or Executive Summary Submission. Email all forms to research@ocps.net. All forms may be found at www.tinyurl.com/OCPSresearch.

Should you have questions or need assistance, please contact Mary Ann White at (407) 317-3201 or mary.white@ocps.net.

Best wishes for continued success,

Tavy Chen, Ed.D.
tavy.chen@ocps.net
Director of Accountability, Research and Evaluation
Orange County Public Schools

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