

A STUDY ON THE RELATIONSHIPS BETWEEN PARTICIPATION IN TUTORING
AND ACCOUNTABILITY MEASURES IN ONE URBAN HIGH SCHOOL

by

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ABSTRACT

The purpose of this study was to identify relationships between an urban high school's student participation in an after-school tutoring program and its relationship to accountability measures on the Florida Comprehensive Assessment Test (FCAT) Reading and End of Course (EOC) exams in the 2013-2014 school year. The research aimed to determine the influence of tutoring participation for urban high school students.

Participants included students enrolled in one urban high school who participated in the FCAT Reading and EOC assessments and it was identified if they participated in the school tutoring program or not.

Quantitative results revealed the relationship between students' frequency of participation and performance outcomes on state assessments. Then, the relationship between achievement on state assessments for all students, students with disabilities, and English Learners who participated in after school tutoring and those who did not participate in after school tutoring were examined. Finally, the relations of frequency of participation in tutoring to corresponding final grades were evaluated. Participants included students enrolled in one urban high school who participated in the FCAT Reading and EOC assessments and it was identified if they participated in the after school tutoring program or not.

Statistically significant differences in performance outcomes existed between tutored students in mathematics courses who participated in tutoring and those who did not. However, there was no statistically significant difference in performance outcomes with students in courses that were heavily based on reading as a result of their

participation in tutoring. The students with disabilities subgroup as well as the English Learners subgroup both experienced statistically significant differences in reading scores as a result in tutoring participation. These same subgroups did not experience statistically significant difference on other assessments: Algebra 1 EOC, Geometry EOC, Biology EOC, and U.S. History EOC.

Although this study identified relationships tutoring participation had with accountability measures achieved by students there is still much to be understood. The structure and approach to tutoring intervention programs should continue to be sought after in research in an effort to continue providing all students with opportunities for success on high stakes testing.

My inspiration to achieve this accomplishment was a
result of the unwavering love and support of my parents.

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CHAPTER 1 PROBLEM OF PRACTICE

Introduction

Accountability for student achievement has quickly become the guiding force behind reforms in public education since the inception of the No Child Left Behind Act of 2002 (No Child Left Behind [NCLB], 2002). This most recent iteration of the Elementary and Secondary Education Act (ESEA) of 1965, set a goal to improve student achievement and revitalize the scope of the American public education system. The law required all states to annually measure student progress in reading and mathematics for students in Grades 3 through 8 and at least once in Grades 10 through 12 (U.S. Department of Education, 2005). The issuance of NCLB in the early 2000s began an influx of federal involvement in state public education systems.

In 2009, President Barack Obama and Secretary of Education Arne Duncan announced a \$4.35 billion federal program to award grants to states that led the way in educational reform. This program, Race to the Top (RTTT), established a grant competition between the states to support reforms and innovation in classrooms. The program focused specifically on four core education assurance areas to implement reform policies (a) adopting standards and assessments with the aim of post-secondary preparedness for the purpose of competing in the changing global economy; (b) building data systems to better monitor student annual growth from their primary through secondary education to identify learning needs; (c) recruiting the most qualified teachers, developing teacher strategies and pedagogy, and rewarding the most effective teachers

through merit pay systems; and (d) using data to impact change in the nation's struggling schools (U.S. Department of Education [USDOE], 2013).

In 2010, Florida transitioned the state public school assessment from the Florida Comprehensive Assessment Test (FCAT) to FCAT 2.0 and End-of-course (EOC) assessments. The results have been used to measure individual student and school success. FCAT 2.0 measured student mastery of reading, writing, mathematics, and science, and the EOC assessments measured student mastery in four specific courses for high school students including Algebra 1, Geometry, Biology, and United States History.

Given the importance of these assessments, educators had an obvious responsibility to ensure that their students performed highly. Urban school settings, in particular, have encountered challenges and turned to tutoring programs to provide the maximum level of support for students. The challenge has been finding highly qualified tutors to meet the needs of non-proficient learners in urban settings. One effective strategy to accomplish this, according to Gallagher, Goodyear, Brewer, and Rueda (2012) was to identify certified teachers to fill tutor positions because those individuals are aware of the instructional strategies and skills that can help non-proficient students achieve success.

If schools are to maximize results for student achievement, they may develop and implement tutoring programs designed to provide their students with opportunities to achieve success on state assessments. Thus, tutoring programs initiated to increase student-learning outcomes should be studied in order to determine their overall effectiveness.

Statement of the Problem

The increase in accountability has led to the creation of after school tutoring programs to enhance student performance outcomes. Tutoring programs vary among schools as they each aim to establish a program that specifically meets the needs of their students. Schools should therefore determine how to establish a tutoring program to meet the learning needs of their students.

Purpose of the Study

The purpose of this study is to determine the relationship between participation in after-school tutoring and high school student accountability measures on state assessments, i.e., FCAT 2.0 and EOCs, and teacher assigned final grades in corresponding courses in one urban school setting. NCLB (2002) and RTTT (USDOE, 2013) have both created a climate of increased accountability in the United States' public school systems. As a result, Florida has increased academic standards and produced new assessments to measure student performance outcomes. Some high schools have responded with the development of tutoring programs in multiple subject areas. Though these programs have varied in design, they have shared the similar intentions of student achievement and success. Urban schools have had unique challenges in the creation of their programs because their students typically have challenges in terms of their ability to participate in the programs (Hull, 2003).

Though most public schools in the United States provide some type of tutoring, students in urban settings have not had tutoring programs equal to those of the programs

in suburban settings (Hull, 2003). Tutoring programs in urban public schools are often overcrowded or are staffed by tutors who lack teaching expertise and do not provide adequate tutoring instruction. When more educated suburban parents identify that their students are non-proficient, they pay for a tutoring service to meet their individual student's needs. In an urban setting, non-proficient students are serviced primarily through tutoring programs developed by schools, which take a more unified approach (Payne, 2003). The tutoring program in the school of interest in this study was still in its infancy at the time of the present study, and there was little evidence to suggest that the program led to greater students' success.

Context of the Study

The school at the center of the study was a large urban high school in Central Florida. Of the 2,484 student population, 2,014 (81.1%) students qualified for free or reduced lunch services during the 2013-2014 school year. The English Learner (EL) population was 409 (16.5%) and the Exceptional Student Education (ESE) population was 345 (13.9%). The racial makeup of the school was diverse: 84.9% Black, 9.1% Hispanic, 2.3% White, 2.2% Asian/Pacific Islander, 1.1% Multicultural, and 0.5% American Indian/Alaskan Native.

During the 2013-2014 school year all students in the school were provided the opportunity to participate in a school-wide tutoring program, which took place weekly on each Monday and Thursday, after school from 2:45 p.m. to 4:45 p.m. An additional day of tutoring was added on Saturday mornings from 9:00 a.m. to 11:00 a.m. beginning in

February 2014, as state assessments grew closer. The FCAT 2.0 Reading assessment took place from April 14, 2014 through April 29, 2014 and the End-of-course examinations took place from April 30, 2014 through May 23, 2014.

The tutors were teachers employed at the school and were highly qualified as defined by the Florida Department of Education (FDOE). Highly qualified ensures that teachers provide instruction in a core area, hold an acceptable bachelor's degree or higher in their subject area, and hold a valid Florida teaching certificate. All tutors were provided an hourly stipend from the school as compensation for tutoring. The individual students being tutored consisted of a mixture of students who were on tutors' active within-the-school-day class rosters and students who were not enrolled in their classes. Student tutoring rosters were created during the first tutoring session, and new students were assigned to tutors as they enrolled throughout the school year.

The tutor program was designed based on the needs of the students as determined by school administrators. After reviewing state assessment results from the 2012-2013 school year, data-based decisions were made to establish the course areas of focus for the tutoring program. The purpose of the program was to increase the overall percentage of students meeting proficiency by earning a 3 or higher on state assessments. In the 2012-2013 school year, the school achieved the following results on state assessments: FCAT 2.0 Reading, 32% proficient; Algebra 1 EOC, 40% proficient; Geometry EOC, 30% proficient; Biology EOC, 84% proficient; U.S. History EOC, 31% proficient.

Definition of Terms

The following terms and phrases were defined for the purpose of this research and to aid in conducting the study. All terms and phrases have been defined as they apply to the State of Florida.

Algebra 1. This high school course aims to provide students with a deep understanding of linear and exponential relationships. Students will use mathematical models to identify trends and apply formulas to solve real world problems. The students will interact with mathematics as a logical and coherent subject to provide them with the ability to problem solve using logic and reasoning. Scored on a scale from 1 to 5, mastery is achieved at 3 and above (CPALMS, 2013).

Biology. This high school course provides students with a deep understanding of the scientific method and procedures to include inquiry, measurement, investigation, procedures for experimentation, problem solving, the use of scientific technology, e.g. microscopes and Bunsen Burners, and laboratory safety. Laboratory experiments should serve the purpose of developing an understanding of the complexity of the research and experimentation process, as well as the skills and process to generate conclusions. Scored on a scale from 1 to 5, mastery is achieved at 3 and above (CPALMS, 2013).

Common standards for K-12 students. Content standards for specific assessment areas are determined by the Florida Department of Education (FDOE). Based on student achievement and growth models, determinations are made to identify minimum competency levels to show mastery. Common standards that will be addressed in this

study include reading, algebra 1, geometry, biology, and United States History (FDOE, 2010).

Developmental Scale Score (DSS). The way in which parents can track their student's annual academic progress in reading 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 (FL DOE, 2013).

Economically disadvantaged students. Economically disadvantaged refers to students who are of a low Socioeconomic Status (SES) and receive free or reduced lunch (FDOE, 2010).

Educational Standards. These standards include expected content to be covered in a particular course area as determined by the Next Generation Sunshine State Standards. Every course has an outlined description of measurable objectives to which students will be exposed in the course of an academic year (FDOE, 2010).

End-of-course Assessment (EOC). EOCs are computer-based, criterion-referenced assessments that measure the Next Generation Sunshine State Standards in specific courses, as outlined in their course descriptions. These courses include Algebra I, Geometry, Biology, and United States History. Scored on a scale from 1 to 5, mastery is achieved at 3 and above (FDOE, 2013x).

English for Speakers of Other Languages (ESOL). Educational programs developed for students who have been determined eligible for an educational program in accordance with rules of the State Board of Education. The program provides instruction with language support for English Learners (EL).

English Learners (EL). 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). Educational programs developed for students who have been determined eligible for a special program in accordance with rules of the State Board of Education. Programs include gifted students as well as students with intellectual disabilities, autism spectrum disorder, speech impairment, language impairment, orthopedic impairment, other health impairment, traumatic brain injury, visual impairment, emotional/behavioral disability, or a specific learning disability (Fla. Stat. § 1003.01).

Florida Comprehensive Assessment Test (FCAT) 2.0 Reading. This assessment is administered annually to Florida students in Grades 3-10 to measure comprehension, writing, and vocabulary through the use of passages of texts both fiction and non-fiction. Scored on a scale from 1 to 5, mastery is achieved at 3 and above (FDOE, 2013x).

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 (FDOE, 2010).

Geometry. This high school course aims to provide students with a deep understanding of complex geometric situations and deepen their understanding of relationships. Students will use mathematical models to identify trends and apply formulas to solve real world problems. The students will interact with mathematics as a logical and coherent subject to provide them with the ability to problem solve using logic and reasoning. Scored on a scale from 1 to 5, mastery is achieved at 3 and above (CPALMS, 2013).

High needs student. This category includes students at risk of educational failure or otherwise in need of special assistance and support, such as students who are living in poverty, who attend high-minority schools, who are far below grade level, who have left school before receiving a regular high school diploma, who are at risk of not graduating with a diploma on time, who are homeless, who are in foster care, who have been incarcerated, who have disabilities, or who are English language learners (FDOE, 2010).

High quality assessment. These assessments are designed to measure a student's knowledge, understanding of, and ability to apply, critical concepts through the use of a variety of item types and formats. Such assessments should enable measurement of student achievement and student growth; be of high technical quality; incorporate technology where appropriate; include the assessment of students with disabilities and English language learners; and to the extent feasible, use universal design principles in development and administration (FDOE, 2010).

Highly qualified teacher status. This status indicates whether a teacher meets the definition of a highly qualified teacher. All teachers who give instruction in the core academic subjects of art-visual arts, drama-theatre, English, foreign languages, language arts, mathematics, music, reading, science, social studies and KG-6 Grade self-contained at any level must be highly qualified. This status is earned when the educator holds an acceptable bachelor's or higher degree, a valid Florida Temporary or Professional certificate (FDOE, 2007).

Item Specifications. These specifications define the content and format of the test and test items for item writers and reviewers. They indicate the alignment of test items with the Next Generation Sunshine State Standards (NGSSS). They also serve to provide all stakeholders with information about the scope and function of the end-of-course assessments (FDOE, 2013x).

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 scores earned on high-stakes testing on the FCAT Reading 2.0 assessment and End-of-course examinations in Algebra 1, Geometry, Biology, and United States History (FDOE, 2013x).

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).

Scale Score. A score used to report results on a specific content area assessment. Student raw scores are converted into a Scale Score through an equating process to ensure that the Scale Scores represent the same level of difficulty each year (FL DOE, 2013).

School-wide tutoring program. A school-wide program in a school is aimed at the tutoring needs of all students, not just a select few. These programs work to identify the needs of students in specific subject areas so that the services can cater to needs.

Socioeconomic Status (SES). SES is a combination of someone's sociological and economic status. Individuals' poverty, education, and wealth and individuals are measured using a rating scale from high to low (FDOE, 2013x).

Student achievement. Student achievement is represented by a student's score on the State's assessment under the ESEA; and, as appropriate, by other measures of student learning, provided they are rigorous and comparable across classrooms (FDOE, 2013x).

Summative Assessment. Summative assessments are used to evaluate student mastery of content at or near the conclusion of the school year. The results of these assessments are measured by Achievement Levels (FLDOE, 2010).

United States (U.S.) History. This high school course provides students with the political, economic, religious, social, intellectual, and artistic events, which influenced the development of the United States and the resulting impact on the rest of the world.

Students will be able to identify relationships between historical events, and how the United States has developed since the time of the U.S. Civil War (CPALMS, 2013).

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. Schools do not need to meet all of these characteristics in order to be considered urban, but most do (FDOE, 2010).

Conceptual Framework

The conceptual framework for this study was addressed in terms of (a) the relationship tutoring programs have on students in urban settings, (b) the relationship tutoring programs have on high needs students who are in the Exceptional Student Education (ESE) program and/or the English for Speakers of Other Languages (ESOL) program, and (c) the relationship between tutoring programs and support in preparation for high-stakes testing. As increasing accountability continues to place pressure on public schools, leaders have sought additional instructional time to allow students to process fundamental components necessary for benchmark mastery. In urban schools, there has been an increase in offerings of tutoring opportunities for students because these low achieving students need more individualized attention and additional time to complete assignments and work towards mastery (Van Zoeren, 2003).

A well-structured tutoring program provides the necessary components for students to work towards mastery with additional time. The additional time provides the students with an environment that fosters the need for re-teaching, additional time on assignments, and increased collaboration among the participants (Bloom, 1985). A school would, therefore, want to ensure that the initiated tutoring program meets those specifics.

There are many types of tutoring models to be considered for development. According to the Saint Paul Public Schools Foundation (2011), schools should choose the model that would work best in their individual situation. Schools have a choice of peer tutoring, small group academic tutoring, and large group academic tutoring, among others. When determining the optimal tutoring program for a school to implement leaders should consider which would yield the highest results for their student participants (Saint Paul, 2011). School leaders should determine the needs of their students to implement the tutoring model that best fits the students at their school. Selecting the model that works best will help to provide effective tutoring strategies for student participants.

As a result of cost factors, urban school settings typically turn to group tutoring sessions. This involves students coming into a classroom and receiving tutoring services in a broad-based setting so that whole concepts can be reviewed and students can engage in a review of the process with their peers. Students can then ask questions about their points of confusion, thereby gaining a greater understanding of the concept. This setting has advantages such as the sharing of ideas and information, a diversity of ideas and

points of view being represented, and increased motivation to study and prepare for the sessions. However, this setting does also have disadvantages. These include less individual attention, non-participation by some of the students in the session, and a loss of focus as a result of off-task questions and discussions (California State University, 2013).

When implemented correctly, students who receive tutoring services have the potential to thrive because they are provided with support from both the tutor and the other student participants. In the Harvard Family Research Project (2004), researchers concluded that students who are consistently engaged in a sustained tutoring program experience a greater level of academic achievement, increased long-term learning outcomes, and increased self-confidence, when compared with their peer counterparts who do not participate.

The strategies applied in an effective after-school tutoring program will drive the potential of the program as a whole. The tutors work to effectively facilitate cognitive and motivational methods so that student participants maximize their learning potential (Bailey, 2010). These components address the needs of the learners so that they feel comfortable in the tutoring environment with a goal of academic success. Tutors should, therefore, foster a positive relationship with all participants in the program. Personal relationships and individual attention constitute significant factors in these relationships and lead to increased student engagement which, in effect, result in greater academic outcomes (Saint Paul, 2011).

Students who are served through exceptional student education (ESE) programs face unique challenges in regards to tutoring. The 1990 Individuals with Disabilities Education Act (IDEA) and the 1997 Americans with Disabilities Act (ADA) protect ESE students. These federal laws maintain that all students with disabilities receive an Individual Education Plan (IEP) that specifically outlines the additional services that these students are required to receive. Since a wide variety of disabilities may be included in an IEP, each is prescriptive to each individual student. When these students receive tutoring services, the program should take into account the goals outlined in the IEP and address those goals in partial fulfillment of the plan (Ryan & Cooper, 2004).

Strategies used to tutor ESE students do not vary significantly from strategies used to tutor students who are not in the ESE program. However, tutors should be aware that these students may require additional time during tutoring instruction. Depending on the exceptionality, the tutor will need to spend time specifically focusing on the needs of the learner and focusing on the process of learning (Hervey, 2013). The additional time spent will serve the students' needs and support their ability to process the content so that they may work towards academic gains.

Strategies that can be used to support the learning needs of ESE students range from teaching the participants how to learn so that they can learn to manage the academic task, working around their academic deficits and using their academic strengths to meet learning goals, and structuring a tutorial environment so that the student is provided specific instruction in a content area (Auburn University, 2012). Tutors should gain a

sense of the specific needs of the ESE students and structure strategies accordingly to support learning abilities and help students in mastering the content.

Similarly, students who are not native English speakers are classified as English Learners (EL) and are members of the ESOL program. These students require tutoring that contains strong content support and also embeds language acquisition within content mastery (Ryan & Cooper, 2004). Tutoring strategies used for this group of students does not look significantly different than tutoring sessions with students who are not EL; however, tutors should integrate the necessary academic and language standards with their strategies to make the content comprehensible (Echevarria, Vogt, & Short, 2012). Tutors should be familiar with the Sheltered Instruction Observation Protocol (SIOP) to ensure that they are aware of the strategies to implement when working with these students. This model focuses specifically on eight interrelated components including preparation, background information, comprehensible input, strategies, interaction, practice, lesson delivery, and assessment (Center for Applied Linguistics, 2013). The tutor should be able to determine in which area students requires support and design instruction to meet these specific needs.

Urban school settings have a student population that is more vulnerable to low achievement, and this vulnerability has a negative effect on students as they participate in high-stakes testing (Becker & Luthar, 2002). All high school students, regardless of exceptionality or English language proficiency, are required to participate in state assessments. In Florida, students must demonstrate proficiency by earning a 3 or higher on the FCAT 2.0 Reading and Algebra 1 EOC to graduate from high school. In addition,

they must also participate in the Geometry EOC, Biology EOC, and United States History EOC to graduate. Though students are not required to demonstrate proficiency in these assessments to graduate, the assessment scores are used as 30% of the final grade in the related course. Because of the concern for students who struggle in these areas, one potential solution has been to have a tutoring program to aid in preparation of non-proficient students for these assessments.

As a result, schools have begun to develop tutoring programs to meet the needs of the students they serve and to provide students with remediation to help them achieve success on assessments. Hock, Pulvers, Deshler, and Schumaker (2001) posited that students who take full advantage of tutoring programs will likely acquire new knowledge, and become proficient in skills with which they previously struggled. As noted by Payne (2009), tutoring programs afford students with additional time to process content, focus on comprehension skills, complete procedural tasks with guided instructions, and working through rational models.

Research Questions

The following research questions were developed to determine if a relationship exists in students' participation in a tutoring program and their achievement outcomes on state assessments:

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

2. How does achievement on state assessments for students who participate in tutoring compare to achievement on state assessments for students who do not participate?
3. How does achievement on state assessments for students who are classified in the Exceptional Student Education (ESE) program and participate in tutoring compare to achievement on state assessments for ESE students who do not participate?
4. How does achievement on state assessments for English Learners (EL) who are classified in the English for Speakers of Other Languages (ESOL) program and participate in tutoring compare to student achievement on state assessments for EL who do not participate?
5. What is the relationship between students' frequency of participation in tutoring and final grades in corresponding courses?

Methodology

A causal comparative study was conducted in a large urban high school to analyze the relationship of an after-school tutoring program on student performance and final grades for the 2013-2014 school year. The study was conducted to measure student performance outcomes on the FCAT Reading 2.0 assessment as well as end-of-course (EOC) assessments in Algebra 1, Geometry, Biology, and U.S. History. Spring 2014 score reports from the FCAT Reading 2.0, Algebra 1 EOC, Geometry EOC, Biology EOC, and U.S. History EOC were used to determine if treatment students had a higher

degree of success as a result of participation in a tutoring program. Student frequency of participation in the after-school tutoring program was compared with student classroom performance as measured by the student's final teacher-assigned grade in the course related to the specific assessment. As shown in Table 1, both descriptive and inferential statistics were used in analyzing the data to determine the relationship between tutoring participation and student performance on specified assessments and the final grade earned in the corresponding course.

Table 1

Research Questions, Sources of Data, and Analyses

Research Questions	Data Sources	Analysis
1. What is the relationship between students' frequency of participation in tutoring and performance outcomes on state assessments?	Tutoring program attendance records Student DSS on FCAT Reading 2.0 Student Scale Scores for Algebra 1, Geometry, Biology, and U.S. History EOCs	Pearson Correlation
2. How does achievement on state assessments for students who participate in tutoring compare to achievement on state assessments for students who do not participate?	Tutoring program attendance Student DSS on FCAT Reading 2.0 Student Scale Scores for Algebra 1, Geometry, Biology, and U.S. History EOCs	Independent sample t-test
3. How does achievement on state assessments for students who are classified in the exceptional student education (ESE) program and participate in tutoring compare to achievement on state assessments for ESE students who do not participate?	Tutoring program attendance ESE student DSS on FCAT Reading 2.0 ESE student Scale Scores for Algebra 1, Geometry, Biology, and U.S. History EOCs	Independent sample t-test
4. How does achievement on state assessments for English Learners (EL) who are classified in the English for speakers of other languages (ESOL) program and participate in tutoring compare to student achievement on state assessments for EL who do not participate?	Tutoring program attendance EL DSS on FCAT Reading 2.0 EL Scale Scores for Algebra 1, Geometry, Biology, and U.S. History EOCs	Independent sample t-test
5. What is the relationship between students' frequency of participation in tutoring and final grades in corresponding courses?	Tutoring program attendance Final grades in Reading, Algebra 1, Geometry, Biology, and U.S. History	Pearson Correlation

Population and Sample

The population for this study consisted of 2,484 high school students who were enrolled in a large urban high school in Central Florida during the 2013-2014 school year. The sample was comprised of two groups of students who attended the school. A total of 1,832 students were enrolled in nine courses (English 1, English 2, English 3, English 4, Reading, Algebra 1, Geometry, Biology, or United States History) comprised the convenience sample for this study. All students enrolled in any one of these courses were scheduled to participate in a state assessment related to that course at the conclusion of the 2013-14 school year. Students were divided into two groups: students who participated in the after school tutoring program and students who did not participate. Additionally, the students were identified within the groups as participants or non-participants in the English for Speakers of Other Languages (ESOL) program and the Exceptional Student Education (ESE) program. ESE students who participated in the Florida Alternate Assessment (FAA) were not part of the ESE group. Also, gifted students were not part of the ESE group; they were part of the standard education group. The treatment group included students in Grades 9-12 who were enrolled in Reading, Algebra 1, Geometry, Biology, and/or United States History in the 2013-2014 school year and who participated in the school-wide tutoring program. The second group included students in Grades 9-12 who were enrolled in Reading, Algebra 1, Geometry, Biology, and/or United States History in the 2013-2014 school year and who did not participate in the school-wide tutoring program. Participation in the tutoring program was

voluntary and there was no control for individual characteristics of students who participated.

Instrumentation

Student participation and frequency of attendance were collected from the target school's archival data to determine the students who participated in an after school-tutoring program. Each student was assigned an alphanumeric code, e.g., S9, S10. The tutoring program attendance records were also used to identify frequency of participation.

Academic performance that may have been influenced by the tutoring experience was accessed from available school and school district data and used in this study with district permission. Spring 2014 score reports from the FCAT 2.0 Reading were used to determine the extent to which treatment students experienced a DSS change in reading from the previous year. Raw scores from the Algebra 1 EOC, Geometry EOC, Biology EOC, and U.S. History EOC represented student outcomes on the EOCs. Student participation in the after-school tutoring program was compared with student classroom performance as measured by the student's final teacher-assigned grade in the course related to the specific assessment.

Data Collection

Approval from the University of Central Florida's Institutional Research Board was sought and received prior to the initiation of any research activity (Appendix A). Approval was also received from the target school district to collect archival data of

student frequency of participation records in the tutoring program, student FCAT 2.0 Reading scores, EOC scores, and final teacher-assigned course grades (Appendix B). All student and tutor data were reported in the aggregate.

Data Analysis

Appropriate statistical analysis such as Pearson correlations and independent samples t-tests were used to address and answer the research questions for this study. The data were analyzed using the Statistical Package for Social Sciences (SPSS), and appropriate tests were conducted to determine the significance of the research findings. Analyses determined if tutoring resulted in a higher degree of success for student achievement outcomes for urban students. The variables measured determined if student achievement varied as a result of tutoring frequency, ESE status, and EL status.

Delimitations and Limitations

This study was restricted as the result of delimitations and limitations that existed. Although data were analyzed for a large sample of students, the study was confined to one low socio-economic public high school in Central Florida. Thus, the ability to generalize findings of the study was limited. The applicability of the results from the study beyond the specific population should be considered when interpreting the results.

This study was delimited to the assessment of the relationship of tutoring in content areas that had a developed state assessment, specifically Reading, Algebra 1, Geometry, Biology, and United States History. The relationship of tutoring in other

content areas was not part of this study. Additionally, ESE student data did not include results for students who participated in the Florida Alternative Assessment (FAA). Only ESE students who were administered standard assessments were included in this study. The FAA was not measured in this study, as these students did not participate in the tutoring program. Also gifted students were not included in the ESE data. Gifted students were treated as general education students.

Significance of the Study

This study was intended to provide urban high schools with insight into the development of tutoring programs and assist them in identifying the relationship of tutoring programs implemented with fidelity in specific content areas. This study should lead to greater understanding of the influence tutoring has on student performance outcomes. The research specifically focused on reforms initiated by the U.S. Department of Education (USDOE) and the effects those reforms had on students and schools in urban communities in regard to the development of tutoring programs.

Summary

Findings in prior research on the relationship of after-school tutoring programs have not fully explained the relationship that frequency of participation has on students' EOC outcomes in large urban settings. Likewise, there are few studies in which learning outcomes on EOCs and final grades assigned by teachers in corresponding courses have been correlated. Finally, there is a need to strengthen the understanding of the

relationship tutoring programs have on students who are members of the Exceptional Student Education (ESE) program and English Learners who are members of the English for Speakers of Other Languages (ESOL) program. This research was built on an existing literature base. By further investigating these areas, the researcher intended to gain a better understanding of the relationship between an after-school tutoring program and student learning outcomes.

The research was intended to aid district and school level decision-makers in determining how to best provide tutoring services and resources to students who struggle in high-stakes subject areas. With an enhanced understanding of the existing relationship, research-based decisions can be made to ensure that students are appropriately served efficiently and equitably. The end result would then be a high impact, structured tutoring program that meets the needs of all learners to assist in yielding maximum achievement in the classroom and on high stakes testing for all students. There is a joint benefit for students and schools to ensure that content is mastered and student achievement is maximized.

CHAPTER 2 REVIEW OF THE LITERATURE

Introduction

Assessment of state education programs changed drastically early in the 21st century as a result of the full implementation of the No Child Left Behind (NCLB) Act of 2002 and the 2009 Race to the Top (RTTT) program. The aim of these programs was to increase accountability in education across the United States so that teachers and students would be held to rigorous standards that were appropriately measured by standardized assessments (Hursh, 2013). Increased standards equated to increased responsibility of schools to ensure that they were adequately preparing their students to be successful on those assessments. Section 1008.22, *Florida Statutes* provided for the K-20 education code, assessment and accountability, student assessment program for public schools, outlining the student assessment programs for the state of Florida and defining the purpose of the assessment program as a mechanism to “provide student academic achievement and learning gains data to student, parents, teachers, school administrators, and districts” (Fla. Stat. § 1008.22(1)). The statute further defined how the data were to be used by stakeholders, i.e., “. . . districts to improve instruction, students, parents, and teachers to guide learning objectives, education researchers to assess national and international educational comparison data, and by the public to assess the cost benefit of the expenditure of taxpayer dollars” (Fla. Stat. § 1008.22(1)). Educators across the state were tasked with not only delivering high quality instruction but also ensuring that all of

their students were prepared to do well on the high-stakes assessments that impacted students through their individual achievement and schools through their school grade.

In the 2013-2014 school year, public school students in Florida participated in up to five standardized assessments to measure their mastery in specific areas. All students in Grades 9 and 10 were required to take the Florida Comprehensive Assessment Test (FCAT) in Reading, as were students in Grades 11 and 12 who did not earn an Achievement Level of 3 or higher on the FCAT Reading in their 10th grade year. Students who were enrolled in Algebra 1, Geometry, Biology, or United States History were required to take the end-of-course examination in the respective course (Fla. Stat. § 1008.22, 2013). Schools naturally wished to ensure that their students performed well on these assessments. As a result, schools across the state established tutoring programs to support the learning needs of their students. Although programs developed varied throughout the state, each had a similar mission: to ensure that students were provided a high functioning tutoring program that appropriately met the learning needs of their students.

For this literature review, sources included empirical research, dissertations using Pro Quest, governmental reports and laws, and educational journal articles using ERIC and LexisNexis. These sources were located online data base searches at the University of Central Florida library.

This literature review was completed to establish a foundation for the analyses of the relationship tutoring programs have on students as they prepare for high-stakes standardized testing. The review has been divided into four major subsections focusing

on: (a) the relationship of tutoring programs in urban education settings and the general impact on all students, (b) the relationship between tutoring and performance outcomes for English Learners (EL), (c) the relationship between tutoring and performance outcomes for exceptional student education (ESE) students, and (d) the relationship between tutoring and final student grades in related courses to present a perspective of how tutoring influences success in the classroom.

The Relationship of Tutoring Programs in Urban Education Settings

The increase in academic accountability has led to the development and implementation of tutoring programs across the United States. These programs have been aimed at strengthening academic performances of students on high-stakes testing. According to Bryson (2011), developed programs should have a clear organizational structure with the goals of supporting students who need additional academic support. Programs should be aligned with the values of the school organization, and resources should be strategically allocated to provide the greatest benefit for the students (Bryson, 2011).

Researchers from the National Center for Education Statistics (NCES) have found that students in urban environments typically achieve less, learn less, and encounter a reduced degree of success in their adult lives. This is often linked to poverty, family instability, and increased health issues (National Center for Education Statistics [NCES], 1996). It is, therefore, logical for schools to address the circumstances of their students and develop programs designed specifically for their students.

Effective Tutoring Practices

According to Shanahan (1998), it is not possible to identify one strand of successful tutoring and use it for all students. This has led to the analysis of tutoring for its successes and scrutiny for its failures throughout the modern era. This challenge for public schools remains in education's era of accountability. With the increase of reliance on student achievement scores to demonstrate mastery of learning, public schools have searched for ways to design and implement efficient and effective tutoring programs that yield maximum results for student achievement when implemented with fidelity. The call for increased tutoring programs comes from a "renewed focus on students who are at risk of school failure, coupled with a renewed commitment to see that all students learn basic skills" (Wasik & Slavin, 1993, p. 179). The intimate nature of one-on-one tutoring is ideal for non-proficient students; however, the reality is that budgetary constraints prevent schools from providing this type of tutoring environment. Rather, public schools typically rely on group tutoring to provide learning support for a larger group of students.

There has been extensive research on the effect that tutoring has on students. Researchers (Cohen, Kulik, & Kulik, 2014; Wasik & Slavin, 1993) have demonstrated that the positive impacts that tutoring has on student achievement are a result of the support and reinforcement of essential content pieces tutoring provides. Cohen et al. (2014) found that tutoring programs not only have a positive impact on academic performance but they also aid in the development of a positive attitude about school in general because the students receiving the tutoring services are able to master the tasks they were unable to in the classroom. Wasik and Slavin (1993) had earlier noted that the

goal for schools was to develop meaningful tutoring programs that not only provide additional instruction for students but also to promote the benefits of content mastery.

Morgan, Ponticell, and Gordon (1998) suggested that as schools develop specific tutoring programs they should evaluate the needs of their students and determine how to best support them. Programs should be structured in a way to maximize time and resources. This goes beyond the typical extended day for homework completion model because the academic assistance is guided by the needs of the students in the room as opposed to a general blanket tutoring approach (Morgan et al., 1998). Additionally, according to Gordon, participation in tutoring should include ongoing diagnostics to determine students' weak areas and areas they are growing in as the tutoring takes place over time. Tutors can therefore diagnose areas of weakness and develop plans to identifying potential cognitive processing issues that exist for students (Gordon, 2009). The diagnosis of student needs is more often performed best by tutors who have extensive experience in evaluating those needs. Often times the tutors who are equipped to quickly diagnose student needs are those who have education degrees, prior professional experience, and specialized tutor preparation (Mathes & Fuchs, 1994). These individuals are able to pinpoint areas of need and develop plans to fill in learning gaps, develop student abilities, and achieve mastery.

Research was furthered in a 1995 study conducted by Schmidt and Moust (1995) at the University of Limburg. These researchers attributed tutor effectiveness to two factors: (a) the tutor's ability to communicate in student-friendly language with a caring approach to make the student feel comfortable and encouraged in the learning

environment and (b) the overall knowledge of subject matter possessed by the tutor. Classroom teachers and professionals who have broad experiences in working with students and understand how to support individual learning needs understand these two factors because they understand the art and science behind the education process (Lepper, Woolverton, Mumme, & Gurtner, 2009).

When schools understand the specific needs of their students and how to address those needs they are able to develop tutoring programs that are academically supportive and provide the necessary instruction to contribute to student success. If a program is not focused on the specific needs of student participants, the program may not maximize its potential positive impact on students because student confidence in the program will be diminished (Koedinger, Anderson, Hadley, & Mark, 1997).

Effective Tutoring Programs in Urban Environments

The development of effective tutoring programs with qualified instructors is paramount in educational settings to ensure that the students have exposure to a high quality program with caring tutors. This is especially true in an urban setting because these students often do not come from homes where the education process is understood or effective strategies are in place to support the learning process (Cole, 2008). Students in urban communities have a wide-range of struggles which prevent them from having positive educational experience similar to those of their suburban counterparts. They often deal with the stressors of poverty and have parents who lack the ability to support their student's academic needs (Predmore, 2014). As highlighted in *A Nation at Risk*,

(National Commission on Excellence in Education, 1983), there are significant educational disparities that exist for students across the United States:

Individuals in our society who do not possess the levels of skill, literacy, and preparation essential to this new era [the information age] will be effectively disenfranchised, not simply from the material rewards that accompany competent performance, but also from the chance to participate fully in our national life. A high level of shared education is essential to a free, democratic society and to the fostering of a common culture, especially in a country that prides itself on pluralism and individual freedom. (p. 7)

In spite of this grim warning, it seems that there has been little positive change for urban students. In fact, to the contrary, the gap between urban and suburban students has grown larger (Williams, 2003). A major obstacle faced by these students is their exposure to basic structures of education, which is why tutoring is necessary to support their academic needs and close learning gaps. Urban schools have struggled in the development and implementation of tutoring programs for their students because students enter with a variety of disparities, and schools should determine what support to offer and for how many students (Halpern, 1999). Many of the areas of need are wide-ranging. With fixed dollar amounts budgeted for tutoring services, schools should determine how to best use limited funding to support student deficiencies and positively impact student achievement outcomes and final course grades in high impact areas.

A significant variable on the overall effectiveness of a school's tutoring program is the attendance of its participants because more time spent in targeted tutoring results in a greater understanding of the content. Goyette (2008) noted that the more exposure to a structured tutoring program students have, the greater the impact on their academics. Even when students who are in tutoring programs do not meet state or district established levels for student proficiency they still demonstrate a greater understanding of the content than their peers who do not attend tutoring. Students with higher participation rates in tutoring programs typically experience a greater increase in learning gains, thereby demonstrating that they are closing information gaps (Hull, 2003). This is because tutoring provides additional processing time to ensure that the students have an opportunity to grasp the main concepts and components of the lesson. This results from students having additional time, support, and specific guidance in their areas of need. They can be talked through the content they need and have opportunity to attempt to demonstrate understanding of the content. Additionally, students who have more exposure to time with a tutor are likely to have more academic focus and be more motivated to succeed in the subject area. Tutors can immediately respond to student errors and provide specific feedback for support and guidance (Wood & Wood, 1996).

Immediate feedback and intervention provides the necessary motivation for students to continue working towards mastery of their subjects. Utilizing motivation factors to support student learning in a tutoring environment provides the students with excitement about what they are learning as they process the content in a new way. Working with tutors provides opportunities for students to examine the content in a more

manageable chunk, and their focus can change from understanding an entire concept to that of a specific point of confusion in the lesson. When students can break the larger task into smaller pieces, they experience multiple successes on their way to the success of mastering the greater concept (Alevan, McLaren, Roll, & Koedinger, 2004). Tutors provide motivation through their supportive instruction and celebrate student accomplishments and success along the way. The motivational checkpoints help to ensure that students are making continued progress towards mastery and chart that progress (Chi, Siler, Jeong, Yamauchi, & Hausmann, 2010).

A crucial component of an effective urban tutoring program is community buy-in and support. By including parents and community members in the development and implementation of a program, the school has a unique opportunity to engage stakeholders as members of the school team (Bryan, 2005). This is necessary support because before parents send their students to a program, they want to understand the structure and benefits that will be experienced as a result of active participation. Parents and community members can guide decisions such as when and for how long tutoring is available to maximize their individual satisfaction with the program (Adelman, 1996). Though there are development and implementation decisions that are best addressed by school personnel (e.g., facilities, budget, and staff) parents and community members can contribute to decisions regarding subjects to be offered and the timing of services. If parents and community members are not satisfied in these areas, they may not provide support for the program.

The connection with parents and community members builds a capacity within the tutoring program and provides a fundamental understanding of the significant impact that a well-structured tutoring program can make. The stakeholders of urban schools are not typically aware of the components of such a program. This is precisely why the school should reach out to them to make certain they are aware of why the program exists, the potential benefits that can result with regular attendance, and how it will positively impact student participants (Epstein & Sanders, 2002). The community that understands that the program is essential for the academic progress of the students in the school is more likely to support the initiative.

As tutoring programs are developed, there are numerous factors that urban schools should consider before full implementation (Fashola & Slavin, 1997). A careful evaluation of specific student needs and the identification of qualified tutors are necessary to make certain that the program can provide structured instruction for student participants. Community and parent input is necessary to develop an understanding of the program from stakeholders and provide the necessary buy-in for the program. Table 2 provides a summary of the literature reviewed and associated key authors related to effective tutoring practices and programs.

Table 2

Summary of Literature Reviewed: Effective Tutoring Practices

Effective Tutoring Summaries	Authors
<p>Effective Tutoring Practices Schools across the United States have adapted the structure of their tutoring programs in response to increased accountability.</p>	<p>Cohen, Kulik, & Kulik (2014); Gordon (2009); Lepper, Woolverton, Mumme, & Gurtner (2009); Mathes & Fuchs (1994); Morgan, Ponticell, & Gordon (1998); Schmidt & Moust (1995); Shanahan (1998); Wasik & Slavin (1993)</p>
<p>Effective Tutoring Programs Urban schools face unique challenges in implementing a tutoring program. Programs should supplement learning gaps and provide each student with social and academic support.</p>	<p>A Nation at Risk (1983); Adelman (1996); Alevan, McLaren, Roll, & Koedinger (2004); Bryan (2005); Chi, Siler, Jeong, Yamauchi, & Hausmann (2010) Cole (2008); Epstein & Sanders (2000); Goyette (2008); Halpern (1999); Hull (2003) Predmore (2014); Williams (2003); Wood & Wood (1996)</p>

The Relationship of Tutoring for students served by Exceptional Student Education

(ESE)

There are a multitude of instructional strategies and activities that can be utilized to best serve the specific needs of students with disabilities. These students have been

evaluated, and a determination has been made that they have a type of exceptionality that should be addressed by schools so that they are provided with the same content and curriculum as their non-disabled peers (National Center on Secondary Education and Transition, 2011). In Florida, students with disabilities are participating members of the Exceptional Student Education (ESE) program. Based on their exceptionality, they are provided resources to allow them to be educated in the least restrictive environment. The mission of ESE in Florida is to “ensure the achievement of each and every individual’s extraordinary purpose by expanding opportunities through collaboration of families, professionals, and communities who guarantee the highest expectations and individual success” for all ESE students (FDOE, 2014a, para. 2).

There are wide ranges of student exceptionalities that can be identified, and it is the responsibility of the school to be aware of and inform all individuals working with these students so that school personnel can properly serve them. Tutors, therefore, should be aware of the specific learning needs of the students and provide them with reasonable accommodations based on their needs. In order to facilitate this for the tutors, schools are encouraged to provide strategies to assist the students in learning and applying academic skills and content so that content mastery can be achieved (Essex, 2008).

The academic protection of ESE students is the result of federal and state action. It is importance that every student with a disability be protected from discrimination and be provided with free and appropriate education (Essex 2008). There are several laws that guide schools in working with disabled students. The driving force behind legislation protecting citizens from discrimination as a result of their disabilities has been

the American with Disabilities Act [ADA] (1990). ADA was designed to protect citizens from discrimination on the grounds of their disability. It protects individuals from discrimination in cases where their disabilities cannot be corrected (USDOE, 2006). More specific to school settings, the Individuals with Disabilities Education Act (IDEA) provided that all students have equal access to educational opportunities and facilities in a public school setting. This requires that administrators work with students, parents, and teachers in order to determine the proper function of education for students with unique needs and support them academically (American Psychological Association, 2014).

Students who are classified as ESE are provided with an individualized education plan (IEP) and have the right to function normally in a school. According to Essex (2008), this concept is best identified through inclusion and students' rights to be educated in the least restrictive environment. Inclusion is a social factor within the IEP to ensure that special needs students' peers do not alienate them as a result of their modified education plans. Children are mainstreamed as much as possible, when appropriate, to ensure that the child receives the maximum benefits of instruction (Essex 2008). In terms of their right to be educated in the least restrictive environment, where appropriate, disabled students are to be educated in classrooms with non-disabled students. This process occurs to maximize, to the extent possible, educating handicapped children in public, private, and other institutions with children who are not handicapped. Separate schooling or other removal of handicapped children from the regular education environment should only occur when the nature or severity or the handicap is such that education in regular classes with the use of supplementary aids and services cannot be

achieved satisfactorily (USDOE, 2012). If students' education is not harmed by being in a mainstream classroom, they will remain; and it will be the responsibility of the teacher to ensure that the student receives a free and appropriate public education while at the same time ensuring that the student is making advancements in the particular subject area (Essex, 2008). Therefore, in a tutoring environment, ESE students are provided instruction with accommodations to ensure that they are provided an equitable tutoring program.

Effective Tutoring Strategies for ESE Students

In an effort to effectively instruct ESE students, tutors should use a variety of methods so that they can meet their students' needs. Educational equity is reliant upon strategies and accommodations so that these students are able to understand academic content and move forward in their instruction. The exceptionality exhibited by the student will aid the tutor in determining what strategies will best meet the individual student's needs. Therefore, as ESE tutors develop content mastery plans, they should be aware of the various strategies that can be utilized and are most effective.

The strategy of explicit teaching can be highly effective when tutoring ESE students because it provides the tutor with specific focus tasks while reviewing key components of a skill or lesson. This strategy allows for the tutor to re-teach the content in small steps, guide students with initial practice, and provide them with opportunities for independent practice when prepared (Simmons, Fuchs, Mathes, & Hodge, 1995). This process helps with processing of larger concepts and provides additional time for

students to practice and become comfortable with the material before they are released and independently practice the skill. This method of lesson scaffolding allows students to experience the step-by-step process. These activities should be clearly stated, simplified so that they are manageable, and clearly modeled so that the students understand the expectations (Coffee, 2009).

When scaffolding is not proving to be effective with ESE students, lesson differentiation should be utilized so that students are exposed to a way of looking at the material that is specific to their learning styles and needs. Depending on the exceptionality, there can be varied approaches; however, they all have the same goal of helping the students understand the skill and work towards mastery. Differentiation provides various methods for the students to understand content pieces, process information, and interpret appropriate usage for the skill (Allan & Goodard, 2010).

Differentiated instruction is most successful when the tutor knows and understands the three components of the strategy that simplify the learning process and how to effectively use them in their sessions. Tutors should be aware of the content with which they are working, the most effective processes to utilize in regard to providing the students with an appropriate lesson, and what the end product will look like (Levy, 2008). This understanding will provide for the appropriate utilization of strategic approaches to the content with each student and ensure that students' individual learning needs are met. Most importantly, differentiated instruction supports tutors to effectively meet the varied needs of their students by avoiding a one-size-fits-all instructional mentality, thereby truly addressing specific student needs (Subban, 2006). It provides for an inclusive

tutoring environment where the students are able to work with the content in a delivery style that complements their need and exceptionality (Tomlinson, 2000).

Dye (2000) observed that tutors of ESE students will also find that instructional success can occur when students create graphic organizers to visually represent the content they are reviewing. This is because, as Dye further explained, students may lack the prior and background knowledge needed for the skill and they do not have a systematic way of organizing the new information to understand and process what is being presented. The graphic organizer can assist students in linking already known concepts to those being learned (USDOE, 1987). Additionally, this provides students with an organized representation of what they are learning. They can then add to it as the lesson moves forward and they acquire additional information.

The University of Kansas Center for Research on Learning (2009, 2014) advocated for tutors of ESE students to be aware of the learning strategies utilized while tutoring their students. Using this system, learning strategies are developed in three strands to guide the learning of the students: (a) How do students acquire information? (b) How do students study acquired information? (c) How do student express what they have learned? (University of Kansas, 2009, 2014). With this approach, the tutor is able to divide lessons into smaller segments and address specific and individual learner needs within the lesson. There are a multitude of techniques and approaches associated with the learning strategies approach, and appropriate choice is dependent upon what the specific content calls for. Reading, storing and remembering information, expressing information, and demonstrating competence approaches are all addressed through

learning strategies. Therefore, the tutor should understand how to identify which is most appropriate and how to best implement it so that the maximum academic benefit is realized (University of Kansas, 2009, 2014).

Relationship building and the learning environment also play an important part in tutoring ESE students. This is because ESE students want to be in a learning environment where they feel safe in taking risks. They need to have confidence that their tutors have the goal of providing support so they can work towards content mastery, just as their non-ESE peers (Ysseldyke & Christenson, 1987). These factors have the potential to greatly impact the degree of success of tutors as they should develop positive interactions before any tutoring strategy can be effectively used.

Preparation for Tutors with ESE Students

When working with ESE students, tutors should ensure that they are aware of effective instructional techniques and can provide lessons that target mastery learning (National Center for Learning Disabilities, 2010). The success of tutors is largely reliant on the level of professional development they have experienced. School administrators should provide specific preparation opportunities to tutors of ESE students to aid them in understanding how to best reach their students. Tutors who meet the needs of their students create classroom environments in which students are valued and work towards success in their specific area of need.

Preparation for tutors who work closely with ESE students should aim to provide strategies that meet the learning needs for students with disabilities and also help tutors to

become aware of the learning disabilities their students possess and how the instructional strategies provide academic support for their students. In their study aimed at providing meaningful professional development for accommodating students with disabilities, Schumm and Vaughn (1995) found that there was generally a shallow understanding of effective strategies being utilized with ESE students; and when strategies were used they were “largely incidental, inconsistent, idiosyncratic, and no part of an overall plan for an individual student in the classroom or at the school level” (p. 345). They posited that to avoid this pitfall with ESE tutors, preparation with specific targets should be utilized so that they will know how to create meaningful lessons that support the students’ learning needs and provide opportunities for them to be successful.

The type of tutoring needed is dependent upon the exceptionalities in the tutoring room. This is because there is such a wide variety of learning needs that can exist with the students. Tutors need to be prepared on how to specifically accommodate the learning based on students’ content needs for assistance (University of Kansas, 2009). Because preparation sessions are developed with students in mind, the school should ensure that tutors are provided with relevant information that they can put to use in their tutoring sessions. As tutors modify their instructional approaches with the new strategies to which they have been exposed, they will likely experience a greater level of student understanding and be more inclined to continue participating in professional development, thereby consistently utilizing their new strategies (Slavin, 1990). Effective tutors will vigorously pursue instructional methods that meet the specific needs of their students and provide support so that the students are able to understand the content and

apply it with increased accuracy (Deshler et al., 2002). ESE students take the same high stakes assessments as their non-ESE peers. Thus, tutors should provide support to ensure that students have a firm grasp of the content in which they are being tutored so that they can achieve success. Table 4 provides a summary of the literature reviewed and the key authors related to tutoring ESE students, i.e., effective instructional strategies and preparation.

Table 3

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

Effective Strategies	Authors
<p>Effective Instructional Strategies</p> <p>A variety of instructional strategies can be used to provide academic support for students with learning disabilities. Tutors should be aware of the strategies and how to appropriately implement them to positively impact ESE student learning.</p>	<p>Allan & Goodard (2010); Dye (2000); Levy (2008); Simmons, Fuchs, Mathes, Hodge (1995); Subban (2006); Tomlinson (2000); University of Kansas (2014); University of Kansas Center for Research on Learning (2009); University of North Carolina (2009); U.S. Department of Education (1987); Ysseldyke & Christenson (1987)</p>
<p>Preparation for Tutors</p> <p>School leaders should structure preparation opportunities for all tutors to ensure they understand ESE students and how to best target their varied needs.</p>	<p>Deshler, Schumaker, Lenz, Bulgren, Hock, & Knight (2002); National Center for Learning Disabilities (2010); Schumm & Vaughn (1995); Slavin (1990); University of Kansas Center for Research on Learning (2009)</p>

The Relationship of Tutoring for English Learners (EL)

For students who are not native English speakers, the classroom can be an overwhelming and intimidating place not only because new content is being taught but also because it is not being presented in the students' native language. The language barrier often hinders students' abilities to process the content and leads to learning gaps and deficiencies in knowledge. These students sometimes need individual attention, which can be provided by a tutor, so that they can comfortably work with the content in a low anxiety environment (Harris & Silva, 1993). By providing EL with additional support, schools are better able to meet the content and language needs of these students.

In order to understand the services provided to Florida's EL population, it is important to be familiar with legislation and the legal challenges which led to it. The landmark case, *Lau v. Nichols*, was appealed to the Supreme Court of the United States when a group of Chinese students sued the San Francisco Unified School District because they could not understand the education they were receiving and believed that a meaningful education was denied to them (Intercultural Development Research Association [IDRA], 2014). From the results of this case in favor of the students, several states began enacting legislation mandating services for EL. The result for students in Florida was the Meta Consent Decree, which aimed to ensure that all bilingual students are given the same opportunities as other students. The decree focuses primarily on civil rights for EL and entitlement to services that offer equal opportunity (Florida Department of Education, 2013).

The Meta Consent Decree is presented in six sections and clearly defines the responsibilities that schools have for their EL populations: (a) identification and assessment of all students entering school to determine if they are eligible for English for Speakers of Other Languages (ESOL) services; (b) equal access to appropriate programming, including access and instruction in intensive English instruction with appropriate instructional strategies; (c) equal access to appropriate categorical programs, including early childhood, vocational, adult education, and dropout prevention; (d) all school-based ESOL personnel should obtain appropriate certifications and endorsements; (e) monitoring ESOL via home language surveys and assessing reading and writing abilities, and (f) the development of an evaluation system for the outcome measures of EL to ensure that the program is effective (FDOE, 2013x). The Meta Consent Decree must be followed to ensure that all identified EL are provided adequate access and programs. Therefore, a well-developed tutoring program would be inclusive of the necessary practices and strategies for those students. This enables equal participation for EL and ensures that the strategies used meet the learning needs of the student participants.

Effective Tutoring Strategies for English Learners (EL)

In an effort to effectively instruct ELs, tutors should use a variety of methods so that they can meet their students' needs. The Volusia County Schools (2008), in a guide developed for use by general education teachers in working with English language learners, noted the importance of instructional diversity so that these students are able to

understand academic content and move forward in their instruction. English competency levels differ greatly between English language speakers and non-English speaking students, which creates a challenge for tutors. It is therefore necessary that tutors understand the many ways they can diversify instruction. In order to facilitate an appropriate tutoring environment for ELs, the tutors should utilize strategies to meet the needs of the non-native English speakers. The tutoring of ELs looks similar to that of the native English speakers. There is, however, additional scaffolding and explanation for these students so that learning gaps and language disparities can be properly addressed (Volusia County Schools, 2008).

Tutors of ELs should be familiar with strategies to maximize the impact tutoring has on their students. Saunders and Goldberg (1999) defined comprehensible input as language that includes slightly more sophisticated structures or vocabulary than the learner can produce independently. Tutors should work to communicate instructions given to ELs and ensure that they contain components, which are necessary to facilitate effective instruction and language acquisition. The tutor can support language acquisition by using context clues or visual aids to assist the students in identifying what the vocabulary is and how it is used (Loschky, 1994). It is paramount that the language be simple and clear, contain all the information necessary for students to successfully meet lesson objectives, be presented at the appropriate level, and be free of ambiguity so that students will have a greater understanding of what is expected and how to meet that standard. Comprehensible input is important and should be measured throughout the lesson to ensure that students are taking in and understanding what is being

communicated to them (Echevarria et al., 2004). Input is an important aspect of overall tutoring instruction as it establishes the precedent by which the lesson is established. If the input is successful, tutors will likely establish an environment where learning can be achieved.

The tutoring of ELs should consist of feedback that is comprehensible, useful, and relevant (Hill & Flynn, 2006). When tutor feedback on errors is constructive, students use it to rephrase and correct mistakes instantly. By doing this, the tutor is correcting action and working towards student competency of language. There are four main guidelines to follow regarding feedback: (a) feedback should be corrective in nature, (b) feedback should be timely, (c) feedback should be criterion-referenced, and (d) students can effectively provide some of their own feedback through self-evaluation (Hill & Flynn, 2006). Feedback is an effective demonstration tutors can provide for students and it can also occur as non-verbal cues. In this method, tutors can signal to students that they are correctly completing tasks by showing approval in their facial expression. This will validate students' actions so that they will know that they are on track (Lazaraton, 2004). If students are comfortable with their tutors as a result of their nonverbal communication, they will approach the situation with a more positive attitude. However, if tutors demonstrate poor nonverbal communication skills, followers may approach the situation with a negative attitude and lack comfort in the classroom.

Content presented in tutoring sessions with ELs should be appropriately segmented so that the students are provided time to process smaller parts of the content. As they master the smaller segments, they will be working towards mastery of the greater

concept. The content segments should be digestible followed by an opportunity for the students to process through formal or informal means (Marzano & Simms, 2013). This will allow students to demonstrate an understanding of the smaller segments of the content through their reasoning, identification of examples, and additional questions they have about the lesson.

Grouping techniques and structures will also assist ELs as they work towards academic proficiency. With this strategy, tutors use cooperative learning techniques to ensure that students are meeting lesson objectives (Richards, 1994). By allowing students to work together in strategically crafted groups, students will be exposed to specific information and use the support of the group to ensure that they understand the lesson and are meeting the objectives. Tutors can then target deficiencies they notice in individual members of the group. Additionally, when students are in a group, members can be used as support for each other as they review the content (Topping & Ehly, 1998).

A significant developmental principal of ELs is categorized as building a background and vocabulary development. These areas are essential, as they establish common ground for all learners (Brown & Perry, 2012). In order to create a knowledge-based starting point for learners, an appropriate background should be constructed. This will permit learners to build on the knowledge they have learned and continue with lessons in an effort to expand their understanding (Smidt & Hegelheimer, 2010).

Vocabulary is of primary importance, as it is the key to understanding subject-based content. Tutors should be mindful of the significance of vocabulary mastery for ELs and implement techniques that develop students' vocabulary. There are multiple

ways in which the vocabulary can be used, and it is critical that the tutor demonstrate the appropriate use of the vocabulary in context so that students can deepen their understanding of the word (Gu & Johnson, 1996). Students should be able to identify the definition of the word they are studying in addition to synonyms, antonyms, and even a graphical representation of the word to anchor their understanding of the words (Young, 2005). This will prove beneficial to students' vocabulary and demonstrate that they understand the content vocabulary.

Preparation to Tutor English Learners (EL)

When working with ELs, tutors should ensure that they are diversifying instruction so that they can reach the various learning abilities and needs of all of their students (Shih, 1992). The degree to which they are successful is largely the responsibility of the school administration that should provide tutors with appropriate professional development to help them better understand how they can achieve success with ELs. Tutors who meet the needs of their students, create classroom environments in which students are comfortable and strive to meet the expectations of tutors and their fellow peers.

Preparation for tutors who work closely with ELs should aim to provide strategies that meet the learning needs for non-English speakers and also help tutors to become aware of the cultural identity of their students. Tutors should be aware of the variable nature of their students' language abilities and how comfortable they are in interacting with it (Gallagher et al., 2012). This will enable tutors to build relationships with

students so they are comfortable and are willing to learn. This is a significant component because students need to feel safe in the sessions and willing to attempt to learn under the tutor's directions. (Musanti & Pence, 2010). When students believe they are safe, they will be more willing to be guided by their tutors.

Tutors should be aware of research-based approaches to working with ELs. Tutor should be aware of students' backgrounds so as to better understand students' needs and how to manage them. They should also be aware of how ELs learn; conversational fluency versus academic language and an understanding of their literacy level (Cloud, Lakin, Leninger, & Maxwell, 2010). They will thus have a base line of knowledge with which to begin tutoring sessions. When tutors know and understand students' current level of performance, they will be able to implement and monitor specific academic tutoring plans.

Beyond the need to address student safety and comfort, tutors need to create an engaging atmosphere in which students are challenged and want to continue working with the content. As noted by instructional coaches in the Fresno Unified School District (2010), tutors should be aware of how to address key vocabulary and content in addition to delivering continuous comprehensible feedback so that the students can understand what they are learning and how it contributes to the overall mastery of the content.

Tutor preparation for ELs is essential for a highly effective tutoring program that serves students whose first language is not English. Only when tutors are able to understand students' cultural perspectives will they be able to identify with students' backgrounds and determine how to best meet their learning needs (USDOE, 2007).

These additional steps go beyond the necessities of tutoring students whose primary language is English because the tutor should determine how to best meet the precise needs of the student. The key component for tutors to understand is that EL will take the same high stakes assessments as their non-EL peers. Thus, they should properly scaffold support to provide the students with a firm grasp of the content that will be tested. Table 3 contains a summary of the literature reviewed and associated key authors related to the effective instructional strategies and preparation of tutors for EL.

Table 4

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

Subsection Summaries English Learners (EL)	Authors
<p>Effective Instructional Strategies</p> <p>There are a variety of instructional strategies that can be used to provide academic support for students whose first language is not English. Tutors should be aware of the strategies to positively impact their learning.</p>	<p>Brown & Perry (2012); Echevarria, Vogt, & Short (2004); Gu & Johnson (1996); Hill & Flynn (2006); Lazaraton (2004); Marzano & Simms (2013); Richards (1994); Saunders and Goldberg (1999); Smidt & Hegelheimer (2010); Topping & Ehly (1998); Volusia County Schools (2008); Young (2005)</p>
<p>Preparation for Tutors</p> <p>School leaders should structure preparation opportunities for all tutors to ensure they understand EL and how to best target their specific learning needs.</p>	<p>Cloud, Lakin, Leninger, & Maxwell (2010); Fresno Unified School District (2010); Gallagher, Goodyear, Brewer, & Rueda (2012); Musanti & Pence (2010); Shih (1992); US Department of Education (2007)</p>

The Relationship of Tutoring and Final Course Grades

Tutoring as an intervention to academically support students has the potential to positively impact student performance on high-stakes testing and also their final course grades in the tutored subjects. According to best practices recommended by the Saint Paul Public Schools Foundation (2011), there is an advantage to additional time exposure to content through tutoring that is reflected immediately in students' grades.

Given that students typically want to see change happen quickly as a result of their time spent in tutoring, improvement in course grades provide a source of motivation for students.

The relationship between tutoring and final course grades can perhaps never be truly known, because students with a wide range of abilities attend tutoring sessions for varying lengths of time (Maxwell, 1990). Numerous factors have been identified as contributing to the effects of grade improvement as a result of tutoring participation. Among them attendance and behavior in the tutoring program play significant roles in students' abilities to improve their grades as a result of tutoring (Saint Paul, 2011).

In the early 1980s, studies were conducted to determine the strength of the relationship that tutoring has on student grades. In the first study, Irwin (1980) identified three groups of students based on academic records. Half of each group was provided with tutoring resources, and the other half received no tutoring. The students in each group who received tutoring earned higher grades than the non-tutored students. However, in a similar study repeated by Irwin in 1981, it was discovered that although tutoring did make a difference in student grades there was no difference in the grade based on the number of tutoring hours experienced. Though these results indicated that tutoring did make a difference in terms of exposure, the extent to which exposure positively impacted course grades was not known.

There have been additional research findings in regard to the impact that tutoring programs have on student final course grades. In a 2006 meta-analysis of after school tutoring programs, it was determined that there was a significant difference in

mathematics and reading performance of students who participated in after-school tutoring programs (Lauer et al., 2006). Durlak and Weissberg (2007) received a grant from the William T. Grant Foundation to determine if after-school programs promote social and personal skills in a public school setting. The researchers found that students who participated in such a program improved greatly in three areas, one of which was school performance. They found that “after school programs succeeded in improving youths’ feelings of self-confidence and self-esteem, school bonding (positive feelings and attitudes towards school), positive social behaviors, school grades and achievement scores” (p. 7). They determined, therefore, that there were positive impacts associated with after-school tutoring programs as a result of the feelings that the program ignites for students towards their individual situation and their level of comfort in the tutoring environment. Durlak and Weissberg (2007) also recognized that their meta-analysis identified inconsistent academic outcomes for students across grade levels.

Although the effects on students’ grades differ based on the individual students, there is evidence to support that some tutoring time is much more effective than no time spent with a tutor. This is because of the additional time spent in an academic environment while focused on a specific academic task. The additional time spent in tutoring provides the student with additional exposure and processing time for the content being addressed in their lessons and allows them to ask specific questions regarding their learning gaps (Hock et al., 2001). This is likely attributed to the tutors supporting the learning process in a smaller session and having the ability to provide the students with alternate methods of approaching the content. Table 5 contains a summary of the

literature reviewed and associated key authors related to the impact of tutoring on final course grades due to tutoring

Table 5

Summary of Literature Reviewed: Relationship of Tutoring and Final Course Grades

Subsection Summary Final Grades	Authors
<p>Improvement Due to Tutoring There is a positive relationship on student grades as a result of time spent in tutoring. However, the degree of the relationship varies greatly based on other factors. Student behaviors and attendance also have an impact on student grades.</p>	<p>Durlak, Weissberg (2007); Hock, Oulvers, Deshler, Schumaker (2001); Irwin (1980); Irwin (1981); Maxwell (1990); Saint Paul Public Schools Foundation (2011)</p>

Summary

The literature reviewed for this study has established a foundation for further study in regard to the relationship between after school tutoring and accountability measures. Urban schools are charged with creating and implementing sound programs with the explicit focus of supporting content mastery for their students. Student needs should be evaluated so that a framework for the program is built for the specific students who will be participating in the program.

Because such programs serve diverse students, tutoring programs will necessarily differ. Accommodations should be made for English Learners because these students may struggle with the content and the new language. Strategies used in working with

these students should also be adopted based on an understanding of students' language and culture. Students who are members of the exceptional student education (ESE) population should also be provided with accommodations based on their specific exceptionalities so they can overcome their disability and master academic content.

A highly effective tutoring program can also impact the relationship with student grades when the students are exposed to additional instructional time. This exposure to specific academic tutoring has been shown to have positive relationship with student grade performance; however, the research reviewed in this area did not definitively identify participation in tutoring programs as having a consistent, positive relationship with student grades.

In Chapters 3, the methodology that was used in this causal comparative study is explained. Chapter 4 contains a report of the analysis of data. Chapter 5 contains a summary and discussion of the findings as well as implications for practice and recommendations for future research. This study will add to existing research and literature pertaining to the relationship participating in tutoring programs has with accountability measures for students in an urban high school setting.

CHAPTER 3 METHODOLOGY

Introduction

The purpose of this study was to determine the relationship between a tutoring program and student achievement on state assessments in Florida. Students in Grades 9 through 12 enrolled in one urban high school in Orange County, Florida, participated in the FCAT Reading 2.0 and End-of-course (EOC) examinations in Algebra 1, Geometry, Biology, and United States History. The school provided a voluntary after-school tutoring program for students on Monday and Thursday from 2:45 pm to 4:45 pm during each week of the 2013-14 school year. An additional day of tutoring was added on Saturday mornings from 9:00 a.m. to 11:00 a.m. beginning in February 2014 through May 2014. This study was conducted to compare student achievement between students who did and did not participate in the tutoring program. Also investigated were student achievement results for English Learners (EL) who were members of the English for Speakers of Other Languages (ESOL) program and students who were members of the Exceptional Student Education (ESE) program, who did and did not participate in the tutoring program. Finally, student final grades for tutoring program participants and non-participants were compared.

The study was causal comparative so the relationship between student achievement on state assessments and participation in a tutoring program could be determined. The results of the investigation were intended to provide additional insight regarding the relationship of the tutoring program on students who participated, including

EL and ESE students, and the relationship between tutoring program and final course grades of students who participated in tutoring. The methodology used in this study is described in this chapter. The population and sample of the study is described and the procedures used in the selection of participants are explained. Sources of data are detailed along with data collection and analysis methods employed.

Population

The population for this study consisted of 2,484 high school students in Grades 9 through 12 in a large urban high school in Orange County, Florida. Because the study targeted student accountability measures on state assessments, all students involved in the study were enrolled in a course that was connected to a state assessment. All of the students in the study attended the same school thereby reducing variables that would occur if they came from different school environments. All students enrolled in the school had equal access to the school-wide tutoring program.

Sample

A total of 1,832 students who were enrolled in nine courses (English 1, English 2, English 3, English 4, Reading, Algebra 1, Geometry, Biology, or United States History) comprised the convenience sample for this study. All students enrolled in any one of these courses were scheduled to participate in a state assessment related to that course at the conclusion of the 2013-14 school year. Students were divided into two groups: students who participated in the after school tutoring program and students who did not

participate. Additionally, the students were identified within the groups as participants or non-participants in the ESOL program and the ESE program. There was no control for the quality of tutoring experienced by the student participants. All tutors used in the tutoring program were either certified classroom teachers or hired tutors; there was no formal structure for the assignment of students to tutors. Finally, participation in the tutoring program was voluntary and there was no control for individual characteristics of students who participated.

Instrumentation

School archival data were used to collect student achievement scores for this study. The data were then matched with student attendance records from the tutoring program to identify achievement scores of students who did and did not participate in the tutoring program. The data were collected and compiled for analysis using SPSS. The data were categorized in the following ways for reporting.

Student achievement data were collected for all students who participated in a state assessment as well as the final grades each student earned in the corresponding course. Membership in both the ESE and ESOL programs were determined to identify subgroups of students for analysis. These data were aligned with attendance records from the tutoring program and the frequency of participation was recorded in hours.

Data Collection Procedures

This was a causal comparative study that utilized quantitative data. Data for this study were collected during the 2013-2014 school year. The yearlong tutoring program attendance records provided tutoring frequency data for the study. As outlined in the following section, only quantitative data were analyzed in this study.

Collection of Quantitative Data

To provide additional support to students in preparation for specific state-wide assessments at the conclusion of the 2013-14 school year, the leadership at the target school established a tutoring program. This enabled students to voluntarily receive additional support in specific course areas as they prepared for their assessments. Students were permitted to opt into specific support through tutoring in Reading, Algebra 1, Geometry, Biology, and United States History after school from 2:45 pm to 4:45 pm two days a week throughout the year and Saturday mornings from 9:00 am to 11:00 am from February 2014 through May 2014.

The school had a total population of 2,484 students, of which 1,832 (73.6%) students would be taking one or more of the state assessments at the conclusion of the school year; 409 (16.5%) students were classified in the English for speakers of other languages (ESOL) program and 345 (13.9%) were classified in the exceptional student education (ESE) program. In total, 561 (22.6%) students participated in at least one day of voluntary tutoring during the school year.

A Developmental Scale Score (DSS), which measures individual student annual academic progress from year to year, determines achievement for FCAT 2.0 Reading (FL DOE, 2013). Achievement levels on End-of-Course assessments are determined by Scale Scores, which equate the assessment’s level of difficulty from year to year to determine an accurate measurement of student achievement outcomes (FL DOE, 2013). The student assessment results were provided to the school by the Florida Department of Education in June 2014. Tables 7 and 8, respectively, contain the FCAT 2.0 Reading Developmental Scale Scores and end-of-course assessment Scale Scores.

Table 6

FCAT 2.0 Reading Developmental Scale Scores to Achievement Levels

Grade	Level 1	Level 2	Level 3	Level 4	Level 5
9	178-221	222-239	240-252	253-267	268-302
10	188-227	228-244	245-255	256-270	271-302

Table 7

End-of-course Assessment Scale Scores (325-475) to Measure Student Achievement on a Specific Test

Subject	Level 1	Level 2	Level 3	Level 4	Level 5
Algebra 1	325-374	375-398	399-424	425-436	437-475
Geometry	325-369	370-395	396-417	418-433	434-475
Biology	325-368	369-394	395-420	421-430	431-475
U.S. History	325-377	378-396	397-416	417-431	432-475

Data Analysis

A quantitative methodological approach was utilized in analyzing the data for this causal comparative study. Student attendance records, English for Speakers of Other Languages (ESOL) participants (yes or no), Exceptional Student Education (ESE) participants (yes or no), and state assessment Developmental Scale Scores for Reading and Scale Scores by subject were entered into SPSS Version 22 utilizing the numerical assigned values for each category. It should be noted that ESE student data did not include data for any students who took the Florida Alternative Assessment (FAA). Only ESE students who were administered standard assessments were included in this study. The FAA was not measured in this study, as these students did not participate in the tutoring program.

Research Question 1

To determine the extent of the relationship between students' frequency of participation in tutoring and performance outcomes on state assessments, a Pearson Correlation test was used. This statistical analysis was used to determine the relationship between the frequency of tutoring attendance and student performance outcomes on multiple state standardized assessments. The number of hours each student participated in the tutoring program was recorded and treated as the independent variable with the resulting test scores as the dependent variable.

Research Question 2

An independent two-sample t-test was performed to determine the strength of the relationship between tutoring and performance outcomes for all students school-wide. This test was performed to determine if there is a significant difference between student performance outcomes of students who attended tutoring and those who did not. This test was performed by comparing the mean score of each assessment for the group of students who attended tutoring and tested against the mean score of the same assessment for students who did not attend tutoring.

Research Question 3

An independent two-sample t-test was performed to determine the strength of the relationship between tutoring and performance outcomes for students in the Exceptional Student Education (ESE) program. This test was performed to determine if there is a

significant difference between student performance outcomes of ESE students who attended tutoring and those who did not. This test was performed by comparing the mean score of each assessment for the group of ESE students who attended tutoring and tested against the mean score of the same assessment for ESE students who did not attend tutoring.

Research Question 4

An independent two-sample t-test was performed to determine the strength of the relationship between tutoring and performance outcomes for English Learners (EL). This test was performed to determine if there is a significant difference between EL performance outcomes of students who attended tutoring and those who did not. This test was performed by comparing the mean score of each assessment for the group of EL who attended tutoring and tested against the mean score of the same assessment for EL who did not attend tutoring.

Research Question 5

To determine the extent of the relationship between students' frequency of participation in tutoring and the final grade earned in a corresponding course, a Pearson Correlation test was used. The number of hours each student participated in the tutoring program was recorded and treated as the independent variable with the final grade as the dependent variable. The premise of this Research Question was that with more exposure to tutoring, a student may have increased confidence (Durlak & Weissberg, 2007) and

that this may have a positive relationship with the student's final grade in a course, regardless of the score on a standardized assessment.

Table 9 displays the research questions that guided the study, the sources of data and the statistics used to analyze the data.

Table 8

Research Questions, Sources of Data, and Analyses

Research Questions	Data Sources	Analysis
1. What is the relationship between students' frequency of participation in tutoring and performance outcomes on state assessments?	Tutoring program attendance Student DSS on FCAT Reading 2.0 Student Scale Scores for Algebra 1, Geometry, Biology, and US History EOCs	Pearson Correlation
2. How does achievement on state assessments for students who participate in tutoring compare to achievement on state assessments for students who do not participate?	Tutoring program attendance Student DSS on FCAT Reading 2.0 Student Scale Scores for Algebra 1, Geometry, Biology, and US History EOCs	Independent sample t-test
3. How does achievement on state assessments for students who are classified in the exceptional student education (ESE) program and participate in tutoring compare to achievement on state assessments for ESE students who do not participate?	Tutoring program attendance ESE DSS on FCAT Reading 2.0 ESE student raw scores for Algebra 1, Geometry, Biology, and US History EOCs	Independent sample t-test
4. How does achievement on state assessments for English Learners (EL) who are classified in the English for speakers of other languages (ESOL) program and participate in tutoring compare to student achievement on state assessments for EL who do not participate?	Tutoring program attendance EL DSS on FCAT Reading 2.0 EL raw scores for Algebra 1, Geometry, Biology, and US History EOCs	Independent sample t-test
5. What is the relationship between frequency of participation in tutoring and final grades in corresponding courses?	Tutoring program attendance Final grades in Reading, Algebra 1, Geometry, Biology, and US History	Pearson Correlation

Summary

The methods and procedures used to conduct this quantitative study have been outlined in this chapter. The population was described along with the means used to identify the sample. All of the data collected were archival and provided by the school district so that it could be analyzed to determine the effectiveness of the tutoring program at the school. The methods for answering each of the five research questions were described. This included the statistical tests and processes used in analyzing the data in SPSS. The results of the study are included in Chapter 4.

CHAPTER 4 RESULTS

Introduction

This research began with the intent to determine if there is a significant relationship between participation in a tutoring program and students accountability measures in an urban high school setting. Data were collected from state created assessments, including Florida Comprehensive Assessment Test (FCAT) 2.0 Reading, Algebra 1 End of Course Exam (EOC), Geometry EOC, Biology EOC, and U.S. History EOC assessments. The analysis of data was completed using a causal comparative research design. By comparing the students' state assessment achievement of those who did and who did not participate in tutoring, it was possible to determine the overall relationship of participation in the tutoring program and accountability measures.

Data were further analyzed to determine the level of effectiveness for English Learners (EL) who were served through the English for Speakers of Other Languages (ESOL) program and students who were served through the Exceptional Student Education (ESE) program. It is important to note that for the purpose of this study gifted students were excluded from the ESE data, as were ESE students who participated in the Florida Alternative Assessment.

Statement of the Problem

The increase in accountability has led to the creation of after school tutoring programs to enhance student performance outcomes. Tutoring programs vary among

schools as they each aim to establish a program that specifically meets the needs of their students. Schools should therefore determine how to establish a tutoring program to meet the learning needs of their students.

Purpose of the Study

NCLB (2002) and RTTT (USDOE, 2013) have both created a climate of increased accountability in the United States' public school systems. As a result, Florida has increased academic standards and produced new assessments to measure student performance outcomes. Some high schools have responded with the development of tutoring programs in multiple subject areas. Though these programs have varied in design, they have shared the similar intentions of student achievement and success. Urban schools have had unique challenges in the creation of their programs because their students typically have challenges in terms of their ability to participate in the programs (Hull, 2003).

Though most public schools in the United States provide some type of tutoring, students in urban settings have not had tutoring programs equal to those of the programs in suburban settings (Hull, 2003). Tutoring programs in urban public schools are often overcrowded or are staffed by tutors who lack teaching expertise and do not provide adequate tutoring instruction. When more educated suburban parents identify that their students are non-proficient, they pay for a tutoring service to meet their individual student's needs. In an urban setting, non-proficient students are serviced primarily through tutoring programs developed by schools, which take a more unified approach

(Payne, 2003). The tutoring program in the school of interest in this study was still in its infancy at the time of the present study, and there was little evidence to suggest that the program led to greater students' success. The purpose of this study is to determine the relationship between participation in after-school tutoring and high school student accountability measures on state assessments, i.e., FCAT 2.0 and EOCs, and teacher assigned final grades in corresponding courses in one urban school setting.

Research Questions

The following research questions were developed to determine if a relationship exists in students' participation in a tutoring program and their achievement outcomes on state assessments:

1. What is the relationship between students' frequency of participation in tutoring and performance outcomes on state assessments?
2. How does achievement on state assessments for students who participate in tutoring compare to achievement on state assessments for students who do not participate?
3. How does achievement on state assessments for students who are classified in the exceptional student education (ESE) program and participate in tutoring compare to achievement on state assessments for ESE students who do not participate?
4. How does achievement on state assessments for English Learners (EL) who are classified in the English for Speakers of Other Languages (ESOL) program and

participate in tutoring compare to student achievement on state assessments for EL who do not participate?

5. What is the relationship between students' frequency of participation in tutoring and final grades in corresponding courses?

Descriptive Statistics

Student accountability measures were used to determine the overall effectiveness of tutoring attendance on standardized state testing. The only variables discussed in this section are those that were used in the analysis of the five research questions. The categorical data for this study includes student classification in the ESOL program and student classification in the ESE program. The continuous variables data include (a) FCAT Reading 2.0 Developmental Scale Scores (DSS), (b) FCAT 2.0 Reading Annual Growth Changes, (c) Algebra 1 EOC Scales Scores, (d) Geometry EOC Scale Scores, (e) Biology Scale Scores, (f) U.S. History EOC Scale Scores, (g) the frequency of tutoring as determined by the number of hours each student participated in tutoring, and (h) the final grade earned in a course aligned with the above mentioned assessments. The numbers of hours spent in tutoring were grouped in frequency bands, capturing every five hours, to determine at what point tutoring participation positively impacts student accountability outcomes, e.g. 0-5 hours, 6-10 hours, 11-15 hours.

Categorical Variables

The frequencies of the categorical variables of participation in the ESOL program and participation in the ESE program were determined. Of the 2,484 students enrolled in the school, 340 were classified as English Learners (EL) and who participated in the ESOL program. ESE classifications applied to 357 students. The total number of students tested and the number of EL and ESE students within those populations are defined on Tables 13, 15, and 17.

Continuous Variables

The continuous variables utilized in this study are defined as the accountability measure of each assessment. The continuous variables are displayed in Table 6 and Table 7.

Table 9

Research Questions, Independent Variables, and Dependent Variables

Research Question	Independent Variable	Dependent Variable
1	The number of hours each student participated in tutoring	The assessment score earned by each student on each exam; Developmental Scale Score was used for FCAT 2.0 Reading and Scale Score was used for Algebra 1 EOC, Geometry EOC, Biology EOC, and U.S. History EOC.
2	The number of hours each student participated in tutoring	The assessment score earned by each student on each exam; Developmental Scale Score was used for FCAT 2.0 Reading and Scale Score was used for Algebra 1 EOC, Geometry EOC, Biology EOC, and U.S. History EOC.
3	Student EL status	The assessment score earned by each student on each exam; Developmental Scale Score was used for FCAT 2.0 Reading and Scale Score was used for Algebra 1 EOC, Geometry EOC, Biology EOC, and U.S. History EOC.
4	Student ESE status	The assessment score earned by each student on each exam; Developmental Scale Score was used for FCAT 2.0 Reading and Scale Score was used for Algebra 1 EOC, Geometry EOC, Biology EOC, and U.S. History EOC.
5	The number of hours each student participated in tutoring	The final grade earned in a course associated with a state assessment; Reading, Algebra 1, Geometry, Biology, and U.S. History

Data Analysis for Research Question 1

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

To answer Research Question 1, six Pearson Correlation tests were performed to determine the relationship between tutoring and accountability measures on the FCAT 2.0 Reading, FCAT 2.0 Reading Annual Growth, Algebra 1 EOC, Geometry EOC, Biology EOC, and U.S. History EOC. The data for each assessment included students who participated in at least one hour of tutoring. The results of the analyses are presented in Table 10 and 11. Table 12 displays the mean score and student frequency of participation by content area.

The first Pearson Correlation test was performed to determine the relationship between the Developmental Scale Score (DSS) achieved by students and their frequency of participation in tutoring for the FCAT 2.0 Reading. Of the 1414 students who participated in the assessment 169 attended tutoring. The correlation coefficient for the Scale Score and frequency of participation in tutoring for the FCAT 2.0 Reading assessment, $r = .02$, $n = 169$, $p = 0.83$, represents that there was a slight positive correlation, however the results are not statistically significant at $p < 0.05$. As demonstrated in Table 12, the results were unable to determine a number of hours spent in tutoring to positively impact accountability measures on the assessment, since the mean score earned by students did not vary as a result of tutoring frequency.

The second Pearson Correlation test was performed to determine the relationship between the DSS change and student frequency of participation in tutoring for the FCAT

2.0 Reading. This analysis specifically looks at the change experienced by students from one year to the next. Of the 169 students who participated in the tutoring, 157 experienced a change in their DSS. The correlation coefficient for the Scale Score and frequency of participation in tutoring for the FCAT 2.0 Reading assessment, $r = 0.63$, $n = 157$, $p = 0.00$, represents that there was a positive correlation between the variables. The relationship is statistically significant at $p > 0.05$. The results indicated that the more time spent in tutoring the greater the DSS change from year to year. The mean DSS change for students who participated in tutoring for the FCAT 2.0 Reading increased with an increase in tutoring frequency as demonstrated in Table 12. A significant DSS change occurred after a student was exposed to 11-15 hours of tutoring and the consistent increase in the DSS continued through 21-25 hours of tutoring.

The third Pearson Correlation test was performed to determine the relationship between the Scale Score achieved by students and their frequency of participation in tutoring for the Algebra 1 EOC. Of the 563 students who participated in this assessment 146 attended tutoring. The correlation between the two variables is, $r = 0.30$, $n = 146$, $p = 0.00$. The results identify that there was a positive correlation between the variables and the correlation was statistically significant at $p < 0.05$. The results indicated that students who participated in a minimum of 11-15 hours of tutoring for the Algebra 1 EOC experienced an increase in their accountability measures as demonstrated in Table 12.

The fourth Pearson Correlation test was conducted to determine the relationship between the Scale Score achieved by students and their frequency of participation in tutoring for the Geometry EOC assessment. Of the 119 students who participated in this

assessment 62 attended tutoring. The correlation coefficient for the Scale Score and frequency of participation in tutoring for the Geometry EOC, $r = 0.02$, $n = 62$, $p = 0.88$, represents that there was a slightly positive correlation, however the results were not statistically significant at $p < 0.05$. The results indicated that once students participated in a minimum of 11-15 hours of tutoring for the Geometry EOC an increase in their accountability measures occurred as demonstrated in Table 12.

The fifth Pearson Correlation test was conducted to determine the relationship between the Scale Score achieved by students and their frequency of participation in tutoring for the Biology EOC assessment. Of the 484 students who participated in this assessment 143 attended tutoring. The correlation coefficient for the Scale Score and frequency of participation in tutoring for the Biology EOC assessment, $r = 0.34$, $n = 143$, $p = 0.00$, represents that there was a positive correlation between the variables and the results were statistically significant at $p > 0.05$. The results indicated that students who participated in a minimum of 6-10 hours of tutoring for the Biology EOC experienced an increase in their accountability measures as demonstrated in Table 12.

The final Pearson Correlation test was conducted to determine the relationship between the Scale Score achieved by students and their frequency of participation in tutoring for the U.S. History EOC assessment. Of the 321 students participated in this assessment 41 attended tutoring. The correlation coefficient for the Scale Score and frequency of participation in tutoring for the U.S. History EOC assessment, $r = -0.49$, $n = 41$, $p = 0.76$, represents that there was a negative correlation, however the results are not statistically significant at $p < 0.05$. The results were unable to determine a number of

hours spent in tutoring to positively impact student accountability measures on this assessment as a demonstrated in Table 12.

Table 10

Frequency of Participation and Performance Outcomes Descriptive Statistics

	Mean	Standard Deviation	Mean Frequency of Participation (hours)	Standard Deviation	Tutoring Participants
FCAT 2.0 Reading	230.99	18.14	7.88	5.27	169
FCAT 2.0 Reading DSS Change	12.52	13.70	7.88	5.26	157
Algebra 1 EOC	393.45	27.99	6.21	4.14	146
Geometry EOC	398.73	21.42	6.39	2.98	62
Biology EOC	389.60	35.04	4.34	2.70	143
U.S. History EOC	391.10	26.07	5.17	2.97	41

Table 11

Frequency of Participation and Performance Outcomes

	Pearson Correlation	Sig (2-tailed)	Tutoring Participants
FCAT 2.0 Reading	.02	.83	169
FCAT 2.0 Reading DSS Change	.63	.00	157
Algebra 1 EOC	.30	.00	146
Geometry EOC	.02	.88	62
Biology EOC	.34	.00	143
U.S. History EOC	-0.49	.76	41

Table 12

Mean Assessment Scores with Frequency of Participation

	1-5 hours	6-10 hours	11-15 hours	16-20 hours	21-25 hours	26+ hours
FCAT 2.0 Reading	228.80 (67)	234.03 (33)	230.15 (36)	230.00 (21)	229.50 (7)	229.87 (5)
FCAT 2.0 Reading DSS Change	5.69 (61)	10.13 (31)	21.85 (35)	26.38 (18)	41.75 (7)	40.06 (5)
Algebra 1 EOC	385.55 (63)	396.96 (32)	412.92 (20)	405.62 (13)	409.14 (6)	403.18 (12)
Geometry EOC	394.52 (21)	389.50 (18)	398.25 (14)	410.24 (8)	402.00 (1)	N/A (0)
Biology EOC	383.03 (96)	408.42 (34)	404.29 (6)	406.52 (7)	N/A (0)	N/A (0)
U.S. History EOC	390.70 (21)	394.90 (11)	390 (3)	391.87 (6)	N/A (0)	N/A (0)

Number of Participants = (N)

Data Analysis for Research Question 2

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

To answer Research Question 2, six independent sample t-tests were performed to compare the mean scores associated with students who participated in tutoring and students who did not participate in tutoring for the FCAT 2.0 Reading, FCAT 2.0

Reading Annual Growth, Algebra 1 EOC, Geometry EOC, Biology EOC, and U.S. History EOC assessments. The results of the analyses are presented in Tables 13 and 14.

The first independent sample t-test was conducted to determine the statistical significance of the difference between the Developmental Scale Score for students who participated in tutoring for the FCAT 2.0 Reading and students who did not participate in tutoring for the FCAT 2.0 Reading. The difference between the 169 students who participated in tutoring ($M = 230.98$, $SD = 18.20$) and the 1245 students who did not participate in tutoring ($M = 231.61$, $SD = 18.94$) identified that the difference between the means was -0.63 . The independent sample t-test results, $t(1412) = -0.41$, $p = 0.68$ (2-tailed) identified that students who participated in tutoring performed at nearly the same level, just slightly lower than those who did not participate. The difference between the condition means was not statistically significant at $p < 0.05$.

The second independent sample t-test was conducted to determine the statistical significance of the difference between the Developmental Scale Score change for students who participated in tutoring for the FCAT 2.0 Reading and students who did not participate in tutoring for the FCAT 2.0 Reading. This analysis specifically looks at the change experienced by students from one year to the next. The DSS change between the 157 students who participated in tutoring and experienced a change from their 2013 score ($M = 12.58$, $SD = 13.73$) and the 1015 students who did not participate in tutoring and experienced a change from their 2013 score ($M = 1.74$, $SD = 11.38$) identified that the difference between the means was 10.84 . The independent sample t-test results, $t(190.63) = 9.41$, $p = 0.00$ (2-tailed) identified that students who participated in tutoring

experienced a greater change in achievement from 2013 to 2014 and the difference is statistically significant at $p < 0.05$.

The third independent sample t-test was conducted to determine the statistical significance of the difference between the Scale Score achieved for students who participated in tutoring for the Algebra 1 EOC assessment and students who did not participate in tutoring for the Algebra 1 EOC assessment. The difference between the 146 students who participated in tutoring ($M = 393.45$, $SD = 27.99$) and the 417 students who did not participate in tutoring ($M = 385.70$, $SD = 27.13$) identified that the difference between the means was 7.75. The independent sample t-test results, $t(246.70) = 2.90$, $p = 0.00$ (2-tailed) identified that the students who participated in the tutoring program for the Algebra 1 EOC assessment did outperform their peers who did not participate in tutoring. The difference between the condition means was statistically significant at $p < 0.05$.

The fourth independent sample t-test was conducted to determine the statistical significance of the difference between the Scale Score achieved for students who participated in tutoring for the Geometry EOC assessment and students who did not participate in tutoring. The difference between the 62 students who participated in tutoring ($M = 398.73$, $SD = 21.42$) and the 57 students who did not participate in tutoring ($M = 385.86$, $SD = 30.97$) identified that the difference between the means was 12.87. The independent sample t-test results, $t(98.60) = 2.61$, $p = 0.01$ (2-tailed) identified that students who participated in tutoring did earn a greater Scale Score on the assessment. It can be concluded that there is a statistically significant difference between the Scale

Scores achieved of students who participated in tutoring when compared with Scale Scores of students who did not participate in tutoring for the Geometry EOC assessment, as evident at $p < 0.05$.

The fifth independent sample t-test was conducted to determine the statistical significance of the difference between the Scale Score achieved for students who participated in tutoring for the Biology EOC assessment and students who did not participate in tutoring. The difference between the 143 students who participated in tutoring ($M = 389.60$, $SD = 35.04$) and the 341 students who did not participate in tutoring ($M = 396.39$, $SD = 18.12$) identified that the difference between the means was -6.79. The independent sample t-test results, $t(174.74) = -2.36$, $p = 0.02$ identified that the students who did not participate in tutoring earned a greater score on the assessment. There was a negative relationship discovered between the means for Biology students who participated in tutoring and Biology students who did not participate in tutoring. The relationship was statistically significant at $p < 0.05$.

The final independent sample t-test was conducted to determine the statistical significance of the difference between the Scale Score achieved for students who participated in tutoring for the U.S. History EOC assessment and students who did not participate in tutoring. The difference between the 41 students who participated in tutoring ($M = 391.10$, $SD = 26.07$) and the 280 students who did not participate in tutoring ($M = 392.24$, $SD = 23.23$) identified that the difference between the means was -1.14. The independent sample t-test results, $t(319) = -0.29$, $p = 0.77$ (2-tailed) identified that students who participated in tutoring did not earn a greater Scale Score on the

assessment. It is therefore concluded that there is not a statistically significant difference between the Scale Scores achieved of students who participated in tutoring when compared with Scale Scores of students who did not participate in tutoring for the U.S. History EOC assessment at $p < 0.05$.

Table 13

Group Statistics for t-Test: Relationship of Tutoring to Assessment Results

Assessment	N	Mean	Standard Deviation	Standard Error
FCAT 2.0 Reading				
Tutoring Y	169	230.98	18.20	1.40
Tutoring N	1245	231.61	18.94	0.54
FCAT 2.0 Reading DSS Change				
Tutoring Y	157	12.58	13.73	1.10
Tutoring N	1015	1.74	11.38	0.36
Algebra 1 EOC				
Tutoring Y	146	393.45	27.99	2.32
Tutoring N	417	385.70	27.13	1.33
Geometry EOC				
Tutoring Y	62	398.73	21.42	2.72
Tutoring N	57	385.86	30.97	4.10
Biology EOC				
Tutoring Y	143	389.60	35.04	2.93
Tutoring N	341	396.39	18.12	0.98
U.S. History EOC				
Tutoring Y	41	391.10	26.07	4.07
Tutoring N	280	392.24	23.23	1.39

Table 14

Independent Samples t-Test: Relationship of Tutoring to Assessment Results

	Levene's Test for Equality of Variances		t-Test for Equality of Means					
	F	Sig	T	Df	Sig (2- tailed)	Mean Diff	95% Confidence Interval of the Difference Upper Lower	
FCAT 2.0 Reading	.86	.35	-0.41	1412	0.68	-0.63	-3.66	2.40
FCAT 2.0 Reading DSS Change	6.53	.01	9.41	190.63	0.00	10.84	8.57	13.12
Algebra 1 EOC	4.63	.03	2.90	246.70	0.00	7.75	2.49	13.01
Geometry EOC	8.51	.00	2.61	98.60	0.01	12.87	3.10	22.63
Biology EOC	185.36	.00	-2.36	174.74	0.02	-6.79	-13.39	-1.20
U.S. History EOC	2.98	.09	-0.29	319	.77	-1.14	-8.91	6.62

Note: Based on the Levene's Test for Equality of Variances if a significant difference in standard deviation was found the degrees of freedom were adjusted.

Data Analysis for Research Question 3

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

To answer Research Question 3, six independent sample t-tests were performed to compare the mean scores associated with ESE students who participated in tutoring and ESE students who did not participate in tutoring for the FCAT 2.0 Reading, FCAT 2.0 Reading Annual Growth, Algebra 1 EOC, Geometry EOC, Biology EOC, and U.S. History EOC assessments. The results of the analyses are presented in Tables 15 and 16.

The first independent sample t-test was conducted to determine the statistical significance of the difference between the Developmental Scale Score (DSS) achieved for students classified in the ESE program who participated in tutoring for the FCAT 2.0 Reading and students who did not participate in tutoring who were classified in the ESE program. The difference between the 60 ESE students who participated in tutoring ($M = 229.00$, $SD = 16.78$) and the 125 ESE students who did not participate in tutoring ($M = 220.52$, $SD = 24.11$) identified that the difference between the means was 8.48. The independent sample t-test results, $t(159.37) = 2.78$, $p = 0.01$ (2-tailed) identified that there is a statistically significant difference between the DSS achieved of students classified in the ESE program who participated in tutoring when compared with DSS of students classified in the ESE program who did not participate in tutoring for the FCAT 2.0 Reading. It can be concluded that there is a statistically significant difference between the DSS achieved of students who participated in tutoring when compared with DSS of

students who did not participate in tutoring for the FCAT 2.0 Reading, as evident in the differences between the condition means at $p < 0.05$.

The second independent sample t-test was conducted to determine the statistical significance of the difference between the DSS change for students classified in the ESE program who participated in tutoring for the FCAT 2.0 Reading and students who did not participate in tutoring who were classified in the ESE program. This analysis specifically looks at the change experienced by students from one year to the next. The DSS change between the 58 students who participated in tutoring and experienced a change from their 2013 score ($M = 10.71$, $SD = 11.74$) and the 96 students who did not participate in tutoring and experienced a change from their 2013 score ($M = -1.85$, $SD = 11.99$) identified that the difference between the means was 12.56. The independent sample t-test results, $t(152) = 6.34$, $p = 0.00$ (2-tailed) identified that ESE students who participated in tutoring experienced a greater change in achievement from 2013 to 2014 and the difference is statistically significant at $p < 0.05$. Furthermore, ESE students who participated in tutoring experienced a growth in their DSS whereas ESE students who did not participate in tutoring experienced a decline in their DSS.

The third independent sample t-test was conducted to determine the statistical significance of the difference between the Scale Score for students classified in the ESE program who participated in tutoring for the Algebra 1 EOC assessment and students who did not participate in tutoring who were classified in the ESE program. The difference between the 24 students classified in the ESE program who participated in tutoring ($M = 379.88$, $SD = 27.55$) and the 62 students classified in the ESE program who

did not participate in tutoring ($M = 366.81$, $SD = 27.85$) identified that the difference between the means was 13.07. The independent sample t-test results, $t(84) = 1.96$, $p = .054$ (2-tailed) identified that the students who participated in the tutoring program for the Algebra 1 EOC assessment did outperform their peers who did not participate. However, the difference between the means was not statistically significant at $p < 0.05$.

The fourth independent sample t-test was conducted to determine the statistical significance of the difference between the Scale Score for students classified in the ESE program who participated in tutoring for the Geometry EOC assessment and students who did not participate in tutoring who were classified in the ESE program. The difference between the 11 students classified in the ESE program who participated in tutoring ($M = 391.46$, $SD = 37.47$) and the 3 students classified in the ESE program who did not participate in tutoring ($M = 348.67$, $SD = 28.99$) identified that the difference between the means was 42.79. The independent sample t-test results, $t(12) = 1.82$, $p = 0.10$ (2-tailed) identified that although ESE students who participated in tutoring did earn a greater Scale Score on the assessment the difference was not statistically significant at $p < 0.05$. The sample size for both groups is too low to draw definitive conclusions (Chance & Rossman, 2006) and therefore the results are not dependable and conclusions should not be drawn.

The fifth independent sample t-test was conducted to determine the statistical significance of the difference between the Scale Score for students classified in the ESE program who participated in tutoring for the Biology EOC assessment and students who did not participate in tutoring who were classified in the ESE program. The difference

between the 14 students classified in the ESE program that participated in tutoring ($M = 358.79$, $SD = 25.96$) and the 32 students classified in the ESE program who did not participate in tutoring ($M = 390.91$, $SD = 15.24$) identified that the difference between the means was -32.12 . The independent sample t-test results, $t(44) = -5.26$, $p = 0.00$ (2-tailed) identified that there is a negative relationship between the Scale Score achieved by students and tutoring participation by students who are classified in the ESE program. The differences in the means is statistically significant at $p < 0.05$. The sample size for the tutoring group is too low to draw definitive conclusions (Chance & Rossman, 2006) and therefore the results are not dependable and conclusions should not be drawn.

The final independent sample t-test was conducted to determine the statistical significance of the difference between the Scale Score for students classified in the ESE program who participated in tutoring for the U.S. History EOC assessment and students who did not participate in tutoring who were classified in the ESE program. The difference between the 4 students classified in the ESE program that participated in tutoring ($M = 393.50$, $SD = 18.34$) and the 39 students classified in the ESE program who did not participate in tutoring ($M = 390.80$, $SD = 23.57$) identified that the difference between the means was 2.70 . The independent sample t-test results, $t(41) = 0.22$, $p = 0.83$ (2-tailed) identified that the ESE students who participated in the tutoring program for the U.S. History EOC assessment did slightly outperform their peers who did not participate. However, the difference between the means was not statistically significant at $p < 0.05$. The sample size for the tutoring group is too low to draw definitive

conclusions (Chance & Rossman, 2006) and therefore the results are not dependable and conclusions should not be drawn.

Table 15

Group Statistics for t-Test: Relationship of Tutoring on Assessments for ESE Students

Assessment	N	Mean	Standard Deviation	Standard Error
FCAT 2.0 Reading				
Tutoring Y	60	229.00	16.78	2.17
Tutoring N	125	220.52	24.11	2.16
FCAT 2.0 Reading DSS Change				
Tutoring Y	58	10.71	11.74	1.54
Tutoring N	96	-1.85	11.99	1.22
Algebra 1 EOC				
Tutoring Y	24	379.88	27.55	5.62
Tutoring N	62	366.81	27.85	3.54
Geometry EOC				
Tutoring Y	11	391.46	37.47	11.30
Tutoring N	3	348.67	28.99	16.74
Biology EOC				
Tutoring Y	14	358.79	25.96	6.94
Tutoring N	32	390.91	15.24	2.69
U.S. History EOC				
Tutoring Y	4	393.50	18.34	9.17
Tutoring N	39	390.80	23.57	3.77

Table 16

Independent Samples t-Test: Relationship of Tutoring to Assessment Results for Students Classified as ESE

	Levene's Test for Equality of Variances		t-Test for Equality of Means					
	F	Sig	T	Df	Sig (2-tailed)	Mean Diff	95% Confidence Interval of the Difference Upper Lower	
FCAT 2.0 Reading	9.07	.00	2.78	159.37	.01	8.48	2.44	14.52
FCAT 2.0 Reading DSS Change	.13	.72	6.35	152	.00	12.56	8.65	16.47
Algebra 1 EOC	.03	.86	1.96	84	.05	13.07	-0.21	26.34
Geometry EOC	.34	.57	1.82	12	.10	42.79	-8.58	94.15
Biology EOC	1.94	.17	-5.26	44	.00	-32.12	-44.42	-19.82
U.S. History EOC	.59	.45	.22	41	.83	2.70	-21.92	27.33

Note: Based on the Levene's Test for Equality of Variances if a significant difference in standard deviation was found the degrees of freedom were adjusted.

Data Analysis for Research Question 4

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

To answer Research Question 4, six independent sample t-tests were performed to compare the mean scores associated with ELs who participated in tutoring and ELs who did not participate in tutoring for the FCAT 2.0 Reading, FCAT 2.0 Reading Annual Growth, Algebra 1 EOC, Geometry EOC, Biology EOC, and U.S. History EOC assessments. The results of the analyses are presented in Tables 17 and 18.

The first independent sample t-test was conducted to determine the statistical significance of the difference between the Developmental Scale Score (DSS) achieved for ELs who participated in tutoring for the FCAT 2.0 Reading and the DSS of ELs who did not participate in tutoring. The first independent sample t-test was conducted to determine statistical significance when identifying the relationship between EL participation in tutoring and the Developmental Scale Score (DSS) achieved on the FCAT 2.0 Reading. The difference between the 62 ELs who participated in tutoring ($M = 226.63$, $SD = 17.11$) and the 77 ELs who did not participate in tutoring ($M = 212.52$, $SD = 19.53$) indicated that the difference between the means was 14.11. The independent sample t-test results, $t(137) = 4.47$, $p = 0.00$ (2-tailed) identified that there is a statistically significant difference between the DSS achieved of ELs who participated in tutoring when compared with DSS of ELs who did not participate in tutoring for the FCAT 2.0 Reading assessment at $p < 0.05$.

The second independent sample t-test was conducted to determine the statistical significance of the difference between the DSS change for ELs who participated in tutoring for the FCAT 2.0 Reading and the DSS of ELs who did not participate in tutoring. This analysis specifically looks at the change experienced by students from one year to the next. The DSS change between the 58 students who participated in tutoring and experienced a change from their 2013 score ($M = 20.31$, $SD = 12.70$) and the 32 students who did not participate in tutoring and experienced a change from their 2013 score ($M = 6.88$, $SD = 11.04$) identified that the difference between the means was 13.43. The independent sample t-test results, $t(88) = 5.02$, $p = 0.00$ (2-tailed) identified that ELs who participated in tutoring experienced a greater change in achievement from 2013 to 2014 and the difference is statistically significant at $p < 0.05$.

The third independent sample t-test was conducted to determine the statistical significance of the difference between the Scale Score for ELs who participated in tutoring for the Algebra 1 EOC assessment and ELs who did not participate in tutoring. The difference between the 27 ELs who participated in tutoring ($M = 394.33$, $SD = 32.50$) and the 39 ELs who did not participate in tutoring ($M = 392.31$, $SD = 34.71$) indicated that the difference between the means was 2.02. The independent sample t-test results, $t(64) = 0.24$, $p = 0.81$ (2-tailed) identified that the difference between the means of ELs who participated in the tutoring program for the Algebra 1 EOC assessment and the students who did not participate was not statistically significant at $p < 0.05$.

The fourth independent sample t-test was conducted to determine the statistical significance of the difference between the Scale Score for ELs who participated in

tutoring for the Geometry EOC assessment and ELs who did not participate in tutoring. The difference between the 3 ELs who participated in tutoring ($M = 367.67$, $SD = 4.16$) and the 4 ELs who did not participate in tutoring ($M = 348.75$, $SD = 28.29$) indicated that the difference between the means was 18.92. The independent sample t-test results, $t(3.172) = 1.32$, $p = 0.27$ (2-tailed) identified that there is no statistically significant difference between the Scale Scores achieved of ELs who participated in tutoring when compared with Scale Scores of ELs who did not participate in tutoring for the Geometry EOC assessment. The relationship was not statistically significant at $p < 0.05$. The sample size for both groups is too low to draw definitive conclusions (Chance & Rossman, 2006) and therefore the results are not dependable and conclusions should not be drawn.

The fifth independent sample t-test was conducted to determine the statistical significance of the difference between the Scale Score for ELs who participated in tutoring for the Biology EOC assessment and ELs who did not participate in tutoring. The difference between the 34 ELs who participated in tutoring ($M = 375.56$, $SD = 29.29$) and the 13 ELs who did not participate in tutoring ($M = 386.46$, $SD = 15.96$) identified that the difference between the means was 10.9. The independent sample t-test results, $t(45) = -1.27$, $p = 0.21$ (2-tailed) identified that there is no statistically significant difference between the Scale Scores achieved of ELs who participated in tutoring when compared with Scale Scores of ELs who did not participate in tutoring for the Biology EOC assessment at $p < 0.05$. The sample size for the group that did not attend tutoring is

too low to draw definitive conclusions (Chance & Rossman, 2006) and therefore the results are not dependable and conclusions should not be drawn.

The final independent sample t-test was conducted to determine the statistical significance of the difference between the Scale Score for ELs who participated in tutoring for the U.S. History EOC assessment and ELs who did not participate in tutoring. The difference between the 14 ELs who participated in tutoring ($M = 382.71$, $SD = 29.21$) and the 42 ELs who did not participate in tutoring ($M = 387.69$, $SD = 23.09$) indicated that the difference between the means was -4.98 . The independent sample t-test results, $t(54) = -0.65$, $p = 0.52$ (2-tailed) identified that ELs who participated in tutoring did not earn a greater Scale Score on the assessment than EL students who did not participate in tutoring. The mean scores between the two groups were not statistically significant at $p < 0.05$. The sample size for the group that attended tutoring is too low to draw definitive conclusions (Chance & Rossman, 2006) and therefore the results are not dependable and conclusions should not be drawn.

Table 17

Group Statistics for t-Test: Relationship of Tutoring and Assessment Results for English Learners

Assessment	N	Mean	Standard Deviation	Standard Error
FCAT 2.0 Reading				
Tutoring Y	62	226.63	17.11	2.17
Tutoring N	77	212.52	19.53	2.23
FCAT 2.0 Reading DSS Change				
Tutoring Y	58	20.31	12.70	1.67
Tutoring N	32	6.88	11.04	1.95
Algebra 1 EOC				
Tutoring Y	27	394.33	32.50	6.25
Tutoring N	39	392.31	34.71	5.56
Geometry EOC				
Tutoring Y	3	367.67	4.16	2.40
Tutoring N	4	348.75	28.29	14.14
Biology EOC				
Tutoring Y	34	375.56	29.29	5.02
Tutoring N	13	386.46	15.96	4.43
U.S. History EOC				
Tutoring Y	14	382.71	29.21	7.81
Tutoring N	42	387.69	23.09	3.56

Table 18

Independent Samples t-Test: Relationship of Tutoring to Assessment Results for English Learners

	Levene's Test for Equality of Variances		t-Test for Equality of Means					
	F	Sig	T	Df	Sig (2-tailed)	Mean Diff	95% Confidence Interval of the Difference Upper Lower	
FCAT 2.0 Reading	1.89	.17	4.47	137	.00	14.11	7.87	20.35
FCAT 2.0 Reading DSS Change	.57	.45	5.02	88	.00	13.43	8.12	18.75
Algebra 1 EOC	.04	.85	.24	64	.81	2.02	-14.89	18.95
Geometry EOC	24.32	.00	1.32	3.17	.27	18.92	-25.37	63.21
Biology EOC	4.98	.03	-1.27	45	.21	-10.9	-28.24	6.44
U.S. History EOC	1.71	.20	-0.65	54	.52	-4.98	-20.26	10.31

Note: Based on the Levene's Test for Equality of Variances if a significant difference in standard deviation was found the degrees of freedom were adjusted.

Data Analysis for Research Question 5

What is the relationship between students' frequency of participation in tutoring and final grades in corresponding courses?

To answer Research Question 5, five Pearson Correlation tests were performed to determine the relationship between tutoring and student final grade earned in courses that corresponded with the assessments including Reading, Algebra 1, Geometry, Biology, and U.S. History. The data for each assessment included students who participated in at least one hour of tutoring. In order to determine the relationship, final grades were converted into numerical values: A = 4, B = 3, C = 2, D = 1, F = 0. The results of the analysis are presented on Tables 19 and 20. Table 21 displays the mean grade with frequency of participation by content area.

The first Pearson Correlation test was conducted to determine the relationship between the teacher assigned final course grade and student frequency of participation in tutoring for the FCAT 2.0 Reading. Of the 1414 students who participated in the assessment 169 attended tutoring. The correlation coefficient for the final grade and frequency of participation in tutoring for the FCAT 2.0 Reading, $r = -0.05$, $n = 169$, $p = 0.52$, represents that there was a slight negative correlation between the two variables, however the results are not statistically significant as $p > 0.05$. As demonstrated in Table 21, the results were unable to determine a number of hours spent in tutoring to positively impact the final grade earned in the course, since the mean grade earned by students did not vary as a result of tutoring frequency.

The second Pearson Correlation test was conducted to determine the relationship between the teacher assigned final course grade and student frequency of participation in tutoring for the Algebra 1 EOC. The correlation between the two variables, $r = .24$, $n = 146$, $p = .01$, represents that there was a positive correlation between the final grade a student earned in Algebra 1 and their frequency of participation in tutoring for the Algebra 1 EOC and the relationship was statistically significant at $p < 0.05$. The results indicated that there was an increase in the final grade earned in the course with increased participation in tutoring, as demonstrated in Table 21.

The third Pearson Correlation test was conducted to determine the relationship between the teacher assigned final course grade and student frequency of participation in tutoring for the Geometry EOC. The correlation coefficient between the two variables, $r = 0.24$, $n = 62$, $p = 0.06$, represents that there was a positive correlation between the final grade a student earned in Geometry and their frequency of participation in tutoring for the Geometry EOC, however the relationship was not statistically significant as $p > 0.05$. As demonstrated in Table 21, the results were unable to determine a number of hours spent in tutoring to positively impact the final grade earned in the course, since the mean grade earned by students did not vary as a result of tutoring frequency.

The fourth Pearson Correlation test was conducted to determine the relationship between the teacher assigned final course grade and student frequency of participation in tutoring for the Biology EOC. The correlation coefficient between the two variables, $r = 0.17$, $n = 143$, $p = 0.11$, represents that there was a slight positive correlation between the two variables, however the relationship was not statistically significant as $p > 0.05$. As

demonstrated in Table 21, the results were unable to determine a number of hours spent in tutoring to positively impact the final grade earned in the course, since the mean grade earned by students did not vary as a result of tutoring frequency.

The final Pearson Correlation test was conducted to determine the relationship between the teacher assigned final course grade and student frequency of participation in tutoring for the U.S. History EOC. The correlation coefficient between the two variables, $r = -0.12$, $n = 41$, $p = 0.46$, represents that there was a slight negative correlation between the variables. The correlation between the variables was not statistically significant as $p > 0.05$. As demonstrated in Table 21, the results were unable to determine a number of hours spent in tutoring to positively impact the final grade earned in the course, since the mean grade earned by students did not vary as a result of tutoring frequency.

Table 19

Frequency of Participation and Final Grade Outcome Descriptive Statistics

	Mean Grade	Standard Deviation	Mean Frequency of Participation (hours)	Standard Deviation	Tutoring Participants
FCAT 2.0 Reading	2.16	0.97	7.88	5.27	169
Algebra 1 EOC	2.15	1.14	7.88	5.26	146
Geometry EOC	2.63	0.79	6.21	4.14	62
Biology EOC	2.38	0.97	6.39	2.98	143
U.S. History EOC	2.34	1.02	4.34	2.70	41

Table 20

Frequency of Participation and Final Grade Outcome

	Pearson Correlation	Sig (2-tailed)	Tutoring Participants
Reading EOC	-0.05	.52	169
Algebra 1 EOC	.24	.01	146
Geometry EOC	.24	.06	62
Biology EOC	.17	.11	143
U.S. History EOC	-0.12	.46	41

Table 21

Mean Grade with Frequency Participation by Content Area

	1-5 hours	6-10 hours	11-15 hours	16-20 hours	21-25 hours	26+ hours
FCAT 2.0 Reading	2.25 (67)	2.10 (33)	2.16 (36)	2.16 (21)	3.00 (7)	2.6 (5)
Algebra 1 EOC	1.94 (63)	2.23 (32)	2.45 (20)	2.57 (13)	2.83 (6)	3.17 (12)
Geometry EOC	2.26 (21)	2.92 (18)	2.83 (14)	2.63 (8)	3.00 (1)	N/A (0)
Biology EOC	2.33 (96)	2.47 (34)	3.00 (6)	2.57 (7)	N/A (0)	N/A (0)
U.S. History EOC	2.48 (21)	2.18 (11)	2.00 (3)	2.33 (6)	N/A (0)	N/A (0)

Number of Participants = (N)

Summary

In this chapter, the causal comparative study process that yielded the results for the quantitative data were analyzed and described. This was followed by categorical and continuous variables. The variables discussed were used for the purpose of analyzing the results of the five research questions. Chapter 5 contains a summary and discussion of the study's findings. The implications of the study and recommendations for future research are also discussed.

CHAPTER 5 SUMMARY, IMPLICATIONS, AND RECOMENDATIONS

Introduction

This chapter contains a restatement of the purpose of the study and a brief review of the research design, the population, and the instrumentation used to conduct the study. The remainder of the chapter is devoted to a summary and discussion of findings organized around the five research questions, implications for the implementation of research based tutoring programs in urban schools, and recommendations for future research.

Purpose of the Study

The specific purpose of the study was to determine the relationship between an academic tutoring program and the achievement of students attending an urban high school in the 2013-2014 school year. Therefore, the purpose of this study is to determine if a relationship exists between participation in after-school tutoring and high school student performance outcomes on state assessments, i.e., Florida Comprehensive Assessment Test (FCAT) 2.0 and End of Course (EOC) exams in Algebra 1, Geometry, Biology, and U.S. History, and teacher assigned final grades in corresponding courses (if applicable) in one urban school setting.

Population, Research Design, and Instrumentation

For this study, a target urban high school was selected that had students who participated in a tutoring program. Not all students in the school participated in the

tutoring program, which is why the aim of the study was to determine the relationship that tutoring participation had with outcomes on accountability measures. Using this population, a causal comparative study involving the collection of quantitative data was conducted to analyze the relationship tutoring had for students on state assessments; FCAT 2.0 Reading, Algebra 1 EOC, Geometry EOC, Biology EOC, and U.S. History EOC. Additionally, the English Learner and Exceptional Student Education subgroups were analyzed for the relationship tutoring had with students who were members of those subgroups. The researcher used school archival data as quantitative data for the study. Those data were correlated with tutoring participation rosters to determine the relationship participation in tutoring had with accountability measures.

Appropriate statistical analysis such as Pearson correlations and independent sample t-tests were used to address and answer the research questions for this study. The data were analyzed using the Statistical Package for Social Sciences (SPSS), and appropriate tests were conducted to determine the significance of the research findings. Analyses will determine if tutoring results in a higher degree of success for student achievement outcomes of urban students. The variables measured will determine if student achievement varies as a result of tutoring frequency, ESE status, and EL status.

Summary and Discussion of the Findings

The findings of each of the five research questions of this causal comparative study are discussed in the following section. Quantitative results are discussed along with the findings of each of the questions in the study.

Research Question 1

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

The quantitative findings from the six Pearson Correlations conducted suggests that a statistically significant relationship did not exist between frequency of participation in tutoring, as determined by the number of hours each student participated in tutoring, and performance outcomes on the FCAT 2.0 Reading, Geometry EOC assessment, and U.S. History EOC assessment. However, there was a statistically significant relationship between the two variables when measured by the FCAT 2.0 Reading DSS change, Algebra 1 EOC assessment, and Biology EOC assessment.

A number of tutoring participants by frequency in each content area identified minimum tutoring hours needed in certain assessment areas to make a meaningful impact. Although FCAT 2.0 Reading scores did not vary when measured with frequency, the results indicated a consistent increase in the FCAT 2.0 Reading DSS from one year to the next when measured with tutoring frequency. The mean change in DSS score nearly doubled when comparing groups of students who participated in 1-5 hours of tutoring and 6-10 hours of tutoring with increased frequency. The mean change in DSS nearly doubled again when comparing students who participated in 6-10 hours of tutoring with students who participated in 11-15 hours of increased frequency. These results coincide with the research findings of Goyette (2008) who concluded that more time spent in tutoring sessions, with a specific aim, the greater level of understanding a student will achieve.

Similar results were uncovered when analyzing student scores from the Algebra 1 EOC assessment. Students who participated in a minimum of 11-15 hours of tutoring for the Algebra 1 EOC experienced a significant increase in their accountability measures. Beyond that number of tutoring hours accountability measures varied slightly. Additionally, students who participated in a minimum of 6-10 hours of tutoring for the Biology EOC experienced a significant increase in their accountability measures. Beyond that number of tutoring hours accountability measures nearly stayed the same.

The results did not find statistical significance in the correlation between tutoring participation and the Geometry EOC assessment or the U.S. History EOC assessment. Although it was determined that the correlation between the accountability measure for the Geometry EOC assessments and participation in tutoring was not statistically significant, it is important to identify that Students who participated in a minimum of 11-15 hours of tutoring for the Geometry EOC experienced a significant increase in their accountability measures. The results were not able to determine a number of hours spent in tutoring to positively impact accountability measures for the FCAT 2.0 Reading and U.S. History EOC. In the case of both areas, the number of total students was significantly lower than the other areas. There should likely be an increase in the sample size of these populations in order to draw conclusions.

Research Question 2

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

The quantitative findings from the six independent samples t-tests conducted concluded that the urban high school students who participated in tutoring for Algebra 1 and Geometry achieved higher scores on their respective EOCs than the students who did not participate. The difference between the mean scores of students who participated when compared to the mean scores of students who did not participate was statistically significant. The results conclude that tutoring in mathematics courses yielded greater results and suggest that students are better able to gain mathematics concepts when additional time is spent on skill acquisition and tutor guided practice.

Conversely, there was virtually no difference between the mean scores of students who participated in tutoring for Reading or U.S. History when compared with the students who did not participate. In fact, the means for the two variables were nearly identical, which identifies that the tutoring did not impact the scores earned on the assessments. The results for U.S. History students who participated in tutoring may have been affected from a low number of students. This makes it difficult to conclude whether the difference is due to chance or tutoring participation.

When analyzing as the Developmental Scale Scores (DSS) to compare FCAT 2.0 Reading scores from 2013 to 2014 the urban high school students who participated in tutoring experienced a greater change than their peers who did not participate, and the

results were statistically significant. This result identifies that tutoring participation resulted in a much-increased score for students who participated. Of the 169 students who participated in tutoring, 157 experienced a change in their DSS, with the mean change being 12.58 points. Of the 1245 students who did not participate in tutoring, 1015 experienced a change in their DSS, with the mean being 1.74. The results identify that although students who participated in tutoring did not outperform students who did not participate in tutoring, they did have greater increase from the 2013 school year the 2014 school year. These findings align with research conducted by Goyette (2008) who determined that even when students do not meet established levels of proficiency, tutoring participation supports their level of understanding of content and they are able to at a greater rate than their peers who do not attend.

Perhaps the most interesting finding from this question was that tutoring participation for the Biology EOC resulted in a statistically significant negative relationship between tutoring participation and the score earned on the EOC. The sample size demonstrates reliability of the sample, as there was a large population of students in each group. The results suggest that the negative relationship may be the result of individual student frequency in tutoring. Two out of every three students who participated in tutoring reported a frequency between one and five hours, which is below the threshold of six to ten hours to increase accountability measures. Although there was a large number of students who participated their low frequency did not provide them with academic support in Biology.

Research Question 3

How does achievement on state assessments for students who are classified in the exceptional student education (ESE) program and participate in tutoring compare to achievement on state assessments for ESE students who do not participate?

The quantitative findings from the six independent samples t-tests conducted suggest that urban high school tutoring participation in reading had a statistically significant impact on students who are classified in the ESE program. The additional time and practice in a smaller setting provided the students with support to help work towards proficiency. In fact, tutoring in this area nearly closed the achievement gap between ESE students who participated in tutoring and students who are not members of the ESE program who did not attend tutoring. The mean score of the 60 ESE students who participated in tutoring for FCAT 2.0 Reading was 229, whereas the mean score of all 1414 students on the FCAT 2.0 Reading was 231.54. The ESE students who participated in tutoring had a mean score just below the average of all students. ESE students who did not participate in tutoring for the FCAT 2.0 Reading had a mean score of 220.52, which is significantly below the mean score of ESE students who did participate in tutoring.

When analyzing as the Developmental Scale Scores (DSS) to compare FCAT 2.0 Reading scores from 2013 to 2014 the ESE urban high school students who participated in tutoring experienced a greater change than their peers who did not participate, and the results were statistically significant. This result identifies that tutoring participation resulted in a much-increased score for students who participated. Of the 60 ESE students

who participated in tutoring, 58 experienced a change in their DSS, with the mean change being 10.71 points. Of the 125 ESE students who did not participate in tutoring, 96 experienced a change in their DSS, with the mean being -1.85. The results identified ESE students who participated in tutoring outperformed ESE students who did not participate in tutoring. Furthermore, the average ESE student who participated in tutoring experienced a positive change, whereas the average ESE student who did not participate in tutoring experienced negative change.

Just as with the results for Research Question 2, the ESE students who participated in tutoring for the Biology EOC earned scores that were below those of students who did not attend tutoring and the results were statistically significant. These results further demonstrate weaknesses in the structure and approach used when providing tutoring for these students.

Algebra 1, Geometry, and U.S. History did not result in statistically significant differences in the means between ESE students who did participate in tutoring and ESE students who did not participate in tutoring. The differences in the means in these areas resulted from variables that were not adequately addressed in the tutoring sessions. This was especially true for U.S. History, which had nearly equal means for ESE students who did participate or did not participate in tutoring. It is important to note that the results for Algebra 1 fell just outside the confidence interval to be statistically significant, tutoring in Algebra 1 did benefit ESE students, however the results were not statistically significant.

Research Question 4

How does achievement on state assessments for English Learner (EL) students who are classified in the English for speakers of other languages (ESOL) program and participate in tutoring compare to student achievement on state assessments for EL who do not participate?

The quantitative findings from the six Pearson Correlations conducted suggests that a statistically significant relationship did not exist between frequency of participation in urban high school tutoring and performance outcomes on the Algebra 1 EOC, Geometry EOC, Biology EOC, or U.S. History EOC assessments for students classified as English Learners. It is however important to note that there was a low number of ELs who participated in these assessments and the results may have been affected as a result. This makes it difficult to conclude whether the difference is due to chance or tutoring participation.

Reading, however, did yield statistically significant results when analyzing the achievement measures of EL tutoring participation and EL non-participation in tutoring. The number of students in this group was large enough to validate the reliability of the sample.

When analyzing as the Developmental Scale Scores (DSS) to compare FCAT 2.0 Reading scores from 2013 to 2014 the EL urban high school students who participated in tutoring experienced a greater change than their peers who did not participate, and the results were statistically significant. This result identifies that tutoring participation resulted in a much-increased score for students who participated. Of the 62 ELs who

participated in tutoring, 58 experienced a change in their DSS, with the mean change being 20.31 points. Of the 77 ESE students who did not participate in tutoring, 32 experienced a change in their DSS, with the mean being 6.88. The results identify that ELs who participated in tutoring outperformed students who did not participate in tutoring and had a greater increase from 2013 to 2014.

This suggests that the additional time spent in tutoring for reading is supportive to the students' overall language acquisition and reading abilities. By spending time specifically focusing on not only the skills and strategies associated with reading but also the comprehensible inputs that are provided for the students they are better able to process the material that they are reading and able to respond to questions about what they read with increased accuracy. When the tutoring sessions break the skills and strategies into smaller segments the students are better able to gain the skills and process reading material.

Research Question 5

What is the relationship between frequency of participation in tutoring and final grades in corresponding courses?

The quantitative findings from the five independent samples t-tests conducted suggests that a statistically significant relationship did exist when comparing the final grades earned and the frequency of participation for urban high school students in Algebra 1. This correlation identifies that the tutoring assignments provided for the students aligned with the lessons and instruction that was being experienced in the

classroom. The tutoring extension provided the students with additional support for the specific content being instructed while the students were attending tutoring.

Much unlike the findings in Algebra 1, tutoring did not have a statistically significant impact on the final course grade earned in Reading, Geometry, Biology, or U.S. History. The lack of consistency between results align with the findings of Maxwell (1990) which identified that the relationship between tutoring participation and the final grade earned in a course may never be truly know because the students who attended tutoring vary in skills and abilities and the total length of time spent in tutoring for each student varies.

Implications for Policy and Practice

Since the introduction of increased testing in Florida, there has been an increased need for tutoring interventions in schools across the state. Based on the findings of this study, four essential implications that can apply to school-based teachers and administrators and district-based administrators are offered. Each of the four implications will be discussed as to how they might apply to educational practice and policy.

1. The different course areas offered in tutoring should provide the framework for the tutoring lessons provided to students. The tutoring interventions cannot be approached with a one size fits all mentality. The approach should not only be structured to meet the academic needs of the content but also the learning needs that the student participants exhibit. Mathematic tutoring is much more concrete

and formulaic than tutoring in other course areas. When developing tutoring in course areas that are driven by reading skills and abilities, such as reading, biology, and history, there should be a calculated approach to ensure that the students are able to gain required background knowledge and information in order to understand the content that is being presented. Doing so will maximize student understanding and the overall relationship between tutoring and performance outcomes.

2. The structure and design of tutoring intervention programs should be aligned with the state assessed standards. Carefully designing the structure of the program will enhance the relationship that it has on student participants. Just as classroom content is presented in an organized and sequential manner, the approach for tutoring should follow the lesson sequence that is being utilized in the classroom as a means to reinforce concepts.
3. School leaders should frequently visit tutoring sessions and make observations to provide feedback to the tutors in terms of what strategies are effectively used to provide the students with an increased understanding of the content. From these observations the tutors can ensure that they are properly implementing high yield tutoring strategies in their sessions.
4. Students who are members of subgroups, specifically those who are English Learners or those who are members of the Exceptional Student Education program, should be in tutoring environments that understand their needs and

provides adequate tutoring instruction to help them be successful in their classes and also on high stakes testing. When developing these tutoring environments the tutor assigned needs to be aware of research and strategies to maximize the relationship with student achievement. Failure to design tutoring sessions with their needs in mind will result in frustration and anxiety on both the part of the tutor and the student participants.

5. Professional development opportunities provided to highly qualified teachers conducting tutoring sessions should focus on differentiation of instruction specific to the learning needs of the students they are tutoring. Particular foci should be placed on development of differential strategies to be used when tutoring English Learners and ESE students. Providing appropriate professional development will strengthen the effect the teacher has on students in tutoring sessions.
6. Effective tutoring structures should include a component of communication and collaboration between the tutors and the classroom content teachers. Increased communication will provide opportunities for the tutors to gain a better understanding of the students' level of content understanding. Increased collaboration will allow for the tutors to extend specific classroom activities to the tutoring sessions, which will provide extended exposure to the content using similar strategies.
7. The allocation of tutoring dollars from school districts should match the needs of the school and student participants within those schools. Before the program is

initiated, extensive research and surveys of schools will provide insight as to here the greatest need for tutoring is, to which district level administrators can determine where funding dollars should go and how much should be provided. It then becomes the responsibility of the school-based administration to identify and train tutors, acquire resources, and set up a tutoring calendar and schedule for the students at their school. The program should be based on the needs of the students in attendance that year and change as the demographics of the school change.

Recommendations for Future Research

The following recommendations for future research are offered as a result of the findings from this study.

1. Qualitative elements could be included in a similar study with the purpose of understanding the perceptions that the students and tutors have about the relationship that tutoring participation has on accountability measures. These data will provide insight to schools about how to best structure the program based on the needs the students have.
2. This quantitative causal comparative study yielded results that could possibly be further analyzed and expanded upon. Further research could identify additional subgroups to add to the research and understanding of the relationship that tutoring has with student participants. Potential subgroups could include race,

ethnicity, free and reduced lunch status, gender, age, and parent's highest level of education.

3. The study could be replicated using a greater sample size, across multiple schools. This would provide greater insight into the relationship tutoring has with urban high school students, as a greater amount of data would be available for analysis. Increasing the available data could potentially result in varying results.
4. In order to understand the tutoring needs the study could be replicated in two different settings, such as urban and suburban, and the results compared. The comparable results will identify the tutoring structure that is best for various school settings and provide district and school leaders with research to determine the funding and structure of tutoring programs.
5. In order to identify the degree of effectiveness of individual tutoring strategies, future research could examine strategies, e.g., peer tutoring, small group academic tutoring, and large group academic tutoring, to better understand the impact each makes. Each strategy could be further analyzed for effectiveness with English Learners and ESE students.
6. The study could be replicated to study tutoring programs that are both subject focused and aligned with state standards. This would provide specific information for schools to determine the level of success experienced by students in each subject when the tutoring program is directly aligned with state standards.

Each subject could be further analyzed for effectiveness with English Learners and ESE students.

Limitations of the Study

There are several limitations that existed for this study and should be known by those interpreting the research results. Though the researcher was careful in the design of the study, limitations were experienced. Inferences based on the results of the research study conducted should be made with the following limitations in mind.

Although data were analyzed for a large sample of students, the study was confined to one low socio-economic urban public high school in Central Florida. The applicability of the results of the study beyond the specific population should be considered only after school and student variables are carefully considered.

The participation rates for each of the subject areas were not equal and in some cases were low. The disparity in the number of participants in each subject area occurred as a result of the number of students who participated in the state assessments. Students who participated in tutoring but did not participate in state testing were not part of the study.

Conclusion

In this research, the researcher contributed to the available research studies on the relationship between tutoring and accountability measures, as defined by scores earned in high stakes testing when compared to frequency in tutoring participation. The study was

conducted to address the relationship that frequency in tutoring participation has with student assessment outcomes and final course grades in low socio-economic public schools. To complete the study, tutoring participation rosters were compared to scores earned on state assessments for FCAT 2.0 Reading, and End of Course exams in Algebra 1, Geometry, Biology, and U.S. History.

Although conclusions were reached there is still much to be understood about the relationship between tutoring and accountability measures achieved by students: What type of tutoring intervention will result in the greatest outcomes? How can the structure and approach be modified to achieve success across content areas? Which strategies will be most effective when working with English Learners or students in the Exceptional Student Education program? The structure and approach to tutoring intervention programs should continue to be sought after in research in an effort to continue providing all students with opportunities for success on high stakes testing. Regardless of the brand of tutoring provided within a school, school leaders and decision makers have the responsibility to provide the optimal tutoring program to meet the specific needs of their students.

APPENDIX A
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, 407-882-2012 or 407-882-2276
www.research.ucf.edu/compliance/irb.html

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

To : **Hector Maestre**

Date : **July 02, 2014**

Dear Researcher:

On 07/02/2014 the IRB determined that the following proposed activity is not human research as defined by DHHS regulations at 45 CFR 46 or FDA regulations at 21 CFR 50/56:

Type of Review: Not Human Research Determination
Project Title: A Study on the Relationships Between Participation in
Tutoring and Accountability Measures in One Urban High
School
Investigator: Hector Maestre
IRB ID: SBE-14-10406
Funding Agency:
Grant Title:
Research ID: N/A

University of Central Florida IRB review and approval is not required. This determination applies only to the activities described in the IRB submission and does not apply should any changes be made. If changes are to be made and there are questions about whether these activities are research involving human subjects, please contact the IRB office to discuss the proposed changes.

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

Signature applied by Joanne Muratori on 07/02/2014 11:09:29 AM EDT

A handwritten signature in black ink that reads "Joanne Muratori".

IRB Coordinator

APPENDIX B
SCHOOL DISTRICT PERMISSION TO CONDUCT RESEARCH



Orange County Public Schools

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

Notice of Approval

Approval Date: 5/15/15

Approval Number: **0014**

Project Title: A Study on the Relationships Between Participation in Tutoring and Accountability Measures in One Urban High School

Requester: Hector Maestre

Project Director/Advisor: 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, 5/14/16 .

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 4/14/16 , 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.ocps.net/cs/services/accountability/Pages/Research.aspx.

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, Accountability and Research
Orange County Public Schools

Cc: Brandon McKelvey, Senior Director, brandon.mckelvey@ocps.net

"The Orange County School Board is an equal opportunity agency."

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