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The Relationship Among ESOL Services, Vocabulary, and Reading Comprehension in Primary Grades

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MA, Walden University, 2008

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Doctoral Study Submitted in Partial Fulfillment

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Abstract

With the growing English for speakers of other languages (ESOL) population in the United States, English instruction is becoming vitally important in schools. Despite this growing need, many schools are eliminating ESOL support services that promote English learning, and some schools are eliminating ESOL support services in primary grades. The purpose of this quantitative study was to determine whether providing ESOL support in kindergarten improved students' reading level, vocabulary, and reading comprehension. Vygotsky's social learning theory and theory of proximal development provided the theoretical framework of the study. The research questions concerned differences in comprehension scores, vocabulary scores, and reading levels between students who were provided ESOL support services (n = 55) and those who were not (n = 51). A quasi-experimental pre/posttest control group design was used. Due to violations in homogeneity of variance and normality, the Kruskall-Wallis test, the nonparametric equivalent of the 1-way ANOVA, was conducted. Results indicated no statistically significant differences between the groups. Recommendations include replicating the study with a larger sample size to increase statistical power. This study may promote positive social change, as leaders in the local school district may use the findings and recommendations to make decisions on future services and continued evaluations to contribute toward ESOL student achievement.

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Section 1: Introduction to the Study

The English for speakers of other languages (ESOL) population is growing steadily throughout the United States. A study conducted by Zeldis Research Associates (2010) revealed an increase of more than 200% from 1990 to 2006 in the number of children of immigrants in 10 selected states. There has also been a significant increase in the ESOL population in the county in the state of Georgia used in this research study. McKeon (2005) stated in a National Education Association (NEA) study that Georgia, Mississippi, and Montana had over a 50% increase in ELLs between 1999 and 2001.

According to the county's IE2 Partnership Contract, the population of English language learners (ELLs) has significantly increased, more than tripling since 2001. According to the same report, only 14.7% of ESOL students are receiving ESOL services in the county. With the increasing number of ESOL students, there is also an increasing need for ESOL services. Gibbons (2008) stated that all schoolchildren need to be taught in a dramatically different way, but this applies especially to ELLs, as many educators would agree.

A group called the ELL Working Group (2009) in collaboration with the Migration Policy Institute concluded that the people in charge of disbursing federal funds to improve education should pay close attention to the nation's growing population of ELLs. In this study, I researched the benefits of starting ESOL support services for ESOL students in kindergarten. The study was intended to determine whether receiving these support services increased student second language skills in the areas of reading level, vocabulary, and reading comprehension as measured by the Developmental Reading

Assessment, Second Edition (DRA2) standardized test for grade level and reading comprehension in Gwinnett County schools. The literature review in Section 2 addresses the benefits of ESOL support services in detail.

Problem Statement

According to Kennesaw State University (2008), Georgia had the fifth highest absolute growth in the foreign-born population among U.S. states. This means that at the time of the study, Georgia had the fifth highest growth percentage. It is imperative that school systems have adequate ways of instructing ESOL students, as this population is continuing to grow. The availability of ESOL support services should keep pace with the increase in the ESOL student population. Many ESOL kindergarten students in the county under study are not receiving ESOL support services. This study showed that students receiving ESOL support services scored in the same ranges as their non-ESOL peers in reading level, vocabulary, and reading comprehension as measured by the DRA2 standardized test for grade level and reading comprehension. The DRA2 test uses a scripted list of questions and responses to determine a student's reading level and comprehension level and can be a good indicator of vocabulary development. The test is used in elementary schools in the state of Georgia to determine reading level, comprehension, and vocabulary development. The independent variable for this study was ESOL support services. The dependent variable was DRA2 scores in vocabulary and reading comprehension. The covariate was DRA2 pretest scores.

Nature of the Study

Creswell (2003) stated that when a researcher is comparing two groups, using a between-subject, pre-posttest control group design works best. My research fit this design method; therefore, a quasi-experimental quantitative study was used to compare the DRA2 scores of two groups of ESOL kindergarten students at an urban elementary school. The two groups used in this study were ESOL students who received ESOL support services with an ESOL certified teacher and ESOL students who did not receive ESOL support services.

For the statistical analysis, I used an analysis of covariance (ANCOVA). The independent variable was ESOL student services received or not received. The dependent variable was DRA2 scores for reading level, comprehension achievement, and vocabulary achievement. The covariate for the ANCOVA test was the DRA2 pretest scores. A detailed discussion of this methodology can be found in Section 3.

Research Questions

This research study focused on the effect of kindergarten ESOL student services on DRA2 scores. This research study was intended to answer the following research questions:

1. What is the difference in reading level at the end of kindergarten between students who were provided ESOL services and those who were not?
2. What is the difference in comprehension achievement at the end of
3. kindergarten between students? What is the difference in vocabulary achievement at the end of kindergarten

between students who were provided with ESOL support services and those who were not?

Hypotheses

H_{01}: There is no impact from receiving ESOL support services in kindergarten on students' reading level at the end of kindergarten.

H_1: There is an impact from receiving ESOL support services in kindergarten on students' reading level at the end of kindergarten.

H_{02}: There is no difference in comprehension achievement at the end of kindergarten between students who were provided with ESOL support services and those who were not.

H_2: There is a difference in comprehension achievement at the end of kindergarten between students who were provided with ESOL support services and those who were not.

H_{03}: There is no difference in vocabulary achievement at the end of kindergarten between students who were provided with ESOL support services and those who were not.

H_3: There is a difference in vocabulary achievement at the end of kindergarten between students who were provided with ESOL support services and those who were not.

Purpose of the Study

The purpose of this study was to determine whether ESOL support in kindergarten increases reading level, vocabulary, and reading comprehension as

measured by the DRA2 standardized test for grade level and reading comprehension. Research helped to determine that ESOL support services can increase these literacy skills. There has been an increase in the number of ESOL students at the elementary schools in the county under study, yet ESOL support services have steadily been decreased due to budget constraints.

Through experience, I have noted that some students enter first grade without full mastery of the alphabet and with little or no skills in reading. Application of ESOL support services may indicate that there are benefits to starting ESOL services in kindergarten. The results show that early services could lead to fewer ESOL services being needed later in the student's academic career; however, further testing will be needed. The results of this study will be provided to the county, indicating the need to provide ESOL services for kindergarten students. According to Nitsiou (2006), most research in the area of ESOL has been conducted on older students; therefore, there is a need for more research on the younger kindergarten population. Nitsiou found that more studies needed to be done on kindergarten students to get a basis for testing and tracking them and their growing skills base. The most developmentally appropriate methods of teaching students a new language will be discovered.

Theoretical Base

Current research articles on English as a second language (ESL) and education in general have Vygotsky as a recurring source. The major theme of Vygotsky's theoretical framework is that social interaction plays a fundamental role in cognitive development. In developing his social learning theory, Vygotsky performed work that was done in the

context of language learning in children (Vygotsky, 1962). Although his theory was based on initial language acquisition, it has been applied to many aspects of education and second language acquisition.

Vygotsky also recognized that the potential for cognitive development depends on the zone of proximal development ("Social Development Theory," n.d.). This present study was based on his zone of proximal development, which is where students learn on their own and with help from others such as teachers who deliver ESOL support services. Vygotsky stated that children learn from each other and work together to fulfill their potential. Additionally, Vygotsky proposed that the learning environments help students develop their learning. ESOL support services provide the learning environment as proposed by Vygotsky.

This research showed how Vygotsky's zone of proximal development applies to ESOL students and the benefits of support services that should be offered. ESOL support services are structured to remove students from a lecture environment and place them into groups where peer interaction and teacher guidance reflect Vygotsky's zone of proximal development. Students who do not receive ESOL support services therefore receive less benefit from general education classes. This finding supports the idea that students who are directly served by being temporarily removed from the regular classroom and placed into small groups of peers with similar language proficiency will achieve more than students who remain in the classroom.

Chomsky's transformational linguistics has influenced the field of psycholinguistics, especially in studies of children and second language acquisition

(2005). In his research on language acquisition, Chomsky discovered that basic letters and sounds are the foundations of a language. Chomsky stated that there are two problems with the basics of language. The *minimal meaning-bearing elements* refer to the basic letters and sounds of the language. These are the beginnings of a child's language development. When students are trying to learn a new language, they must first understand the letters and sounds of that language. ESOL support services place students in a small group setting where they have more peer interaction and teacher guidance to support their understanding of these concepts. Chomsky also discovered that the same word can often be read differently or a letter can make more than one sound. This makes learning a new language difficult until this is understood. This is where ESOL support services can be vital in the language development of a kindergarten student to ensure that the student learns these nuances of the new language and therefore can become proficient in the new language.

Definition of Terms

Communities of practice/communities of learners: In this study, communities of practice and communities of learners were small groups of students learning English together. "Communities of practice are groups of people who share a concern or a passion for something they do and learn how to do it better as they interact regularly" (Wenger, 1998, p. 49).

Direct served students: ESOL students who are pulled out by an ESOL certified teacher for a small group, 45-minute time period each day. The lessons are very language

rich, teaching grammar, semantics, and conversational language. (This term is used by the school district involved in this study).

English language learner (ELL): In this study, ELL refers to students who are learning the English language (this term is used by the school district involved in this study).

English as a second language (ESL): Also known as *English to speakers of other languages (ESOL)*, ESL is a "state funded instructional program for eligible English Language Learners (ELLs) in grades K-12" (Georgia Department of Education [GADOE], 2008). In this research, it is used to refer to elementary students who are currently learning the English language.

ESOL support services: These services may be "push-in," where an ESOL teacher comes into the general education classroom and instructs the ESOL students in a small group, or an ESOL teacher may pull students out to another location for small group teaching. This occurs in a daily 45-minute session with an ESOL certified teacher. (This term is used by the school district involved in this study).

Nonserved students: Students who qualify for ESOL instruction but are not currently served (this term is used by the school district involved in this study).

Pulled out: To be "pulled out" means to be removed from the general education classroom for a short period each day for small group instruction (this term is used by the school district involved in this study).

Scaffolding: In this study, scaffolding occurred when the teacher serving the ESOL students built upon previous knowledge of the English language. Scaffolding

refers to the "role of teachers and others in supporting the learner's development and providing support structures to get to that next stage or level" (Raymond, 2000, p. 176).

Social development theory: The theory that Vygotsky created in which he theorized that interactions with others lead to full cognitive development (Crawford, 1996).

Whole class setting: This is where all instruction is given to all students together and in the English language (this term is used by the school district involved in this study).

Zone of proximal development (ZPD): "The gap between what a given child can achieve alone, their potential development as determined by independent problem solving, and what they can achieve through problem solving under adult guidance or in collaboration with more capable peers" (Wood and Wood, 1996, p. 6). In this study, this is what a student can accomplish with and without direct English instruction.

Assumptions, Limitations, Scope, and Delimitations

Assumptions

It was assumed that parents would fill out the ESOL placement indicators accurately at the beginning of the year so that students requiring ESOL services could be properly identified. When parents did not indicate that their children spoke a different language at home and did not identify that language, their children were not tested for ESOL. Often, parents do not want ESOL services because they make the mistaken assumption that these services will be considered special education. The Assessing Comprehension and Communication in English State to State (ACCESS) test is given to

those students identified in order to place them with the appropriate ESOL services. Another assumption was that students received consistent services throughout their academic careers. It was also assumed that the services would affect the students in many academic areas, as reading and vocabulary are the basis of much of the curriculum in later grades. It was also assumed that students not receiving ESOL support would start the year with some reading ability, giving us valid pretest scores. It was also assumed that the students' native language would not impact the students' ability to learn the English language.

Limitations

One limitation was my possible bias as the researcher during data collection. According to Rodriguez, Manner, and Darcy (2010), teacher attitudes affect the expected outcomes of services provided to second language learners. In order to prevent this from occurring, the data were collected by the teachers involved as part of normal data collection throughout the year. There was a signed data use agreement (Appendix A) to enable the use of the data collected. Data collected were archival in nature.

Scope and Delimitations

I conducted a quasi-experimental quantitative study in which I used archived data containing developmental reading assessment (DRA2) levels. I used 55 kindergarten students from the direct-served group in kindergarten and 51 from the nonserved group. I examined DRA2 tests to evaluate reading comprehension levels and vocabulary tests from these 106 students. I conducted this research on ESOL students at an elementary school in the county under study. This school is in an urban area.

Significance of the Study

This study was designed to examine the need for more ESOL support services in kindergarten. A study of early ESOL support services is important for several reasons. There has been a dramatic increase in ESOL students in the United States. Huerta and Jackson (2010) stated that a 100% increase of school-aged children who speak a language other than English occurred between 1975 and 2005. By 2005, there were 10.6 million such students in schools in the United States. According to Ortiz, Flanagan, & Dynda (2008), it is expected that the Hispanic population in the United States will more than double. Much of this increase will be due to immigration. The increase in ESOL students leads to the need for more ESOL-certified teachers and more ESOL classes being offered. This is important because it is conjectured that receiving ESOL in kindergarten influences later achievement by increasing vocabulary and reading skills. Mays (2008) stated that ELLs falling behind in their academic progress could reach epidemic proportions. Rivera, Moughamian, Lesaux, & Francis (2008) stated that states are under pressure to ensure the academic progress of ELLs. Kibler (2010) conjectured that learning to write in a second language is a difficult task and that early vocabulary building is vital to writing as well as reading and speaking.

McKeon (2005) gave credence to the idea that more ESOL support services will be needed if these services increase the progress of ELLs. If the growth of the ESOL student population continues, schools will need the services to be successful. This study of students who did and did not receive ESOL support services could prove to be significant for not only the kindergarten students, but for older students, parents, and

teachers as well. By starting ESOL support services in kindergarten, students could be better prepared for the challenges of the rest of their academic career. With these services, students might be able to use the language better at a younger age, which would, in turn, likely reduce the need for the ESOL support services in the upper grades so that varied additional services could be provided. Parents may benefit by seeing their children's language skills improve based on English instruction. ELLs may then be able to help their parents communicate more effectively. Teachers may benefit because their students understand the language and are able to better comprehend given tasks without constant repetition of the instructions. It is also a possibility that a greater number of students will learn in the same amount of time and that overall student achievement will increase. Finally, this could be beneficial for the entire school because language acquisition is key to academic achievement. The county under study could use the information to put new emphasis on early ESOL support services.

This study is relevant to social change because it helps to address the need for ESOL students to receive ESOL support services earlier in their academic careers. This could lead students to being more successful in school, as well as in the community. If the ESOL students are more capable of using the English language, they will be better able to fulfill their needs inside and outside of the school setting. The study was successful in showing that early language instruction facilitated by ESOL support services is beneficial because the ESOL students were able to perform on the same level as their peers. This may change the way in which ESOL support services are allocated and provided to the students within the schools.

Professional Application

Those within the field of education are always trying to find a new and better way to serve the ever-changing population in schools. In this research, I looked at the population of the school where I work and noticed a need for change. My intention, through this research, was to show the need for more ESOL support services for primary students. This, is turn, leads to the need for more ESOL teachers. This growing need can be fulfilled with more professional development so that teachers can become ESOL certified. This will then provide a new set of teachers to fill the ESOL positions for primary grades.

Social Change

This study is relevant to social change because it may help to address the need for ESOL support services earlier in an ELL's academic career. If ESOL students are more capable of using the English language, they will be better able to fulfill their needs inside and outside of the school setting. The study was successful in showing that early language instruction facilitated by ESOL support services is beneficial because the ESOL students were able to show the same academic progress as their peers; it may change the way ESOL support services are allocated and provided to the students within the school district.

A child coming from another country or a household where another language is spoken can feel very lost when placed in an English-only classroom. These students could feel as though they are inferior to others, or not achieving, just because they are not receiving the services that should be allocated to them. According to Ordonez-Jasis and

Ortiz (2006), sociocultural factors could also mold understanding and interpretation of print. If students become literate in English, they may be able to communicate better with their peers and families. Early ESOL instruction with support services could change the way these students are perceived by their peers.

This research may bring about social change because it indicates a need in the field of education for more and better ESOL support services. This would, in turn, increase younger students' literacy capabilities, which would increase their later academic achievement and ultimately give them better skills to actively participate in society, making them participatory citizens. Now completed, this research could change the way that the county under study allocates resources for ESOL students and help bring about positive social change.

Summary

Section 1 provided a detailed explanation of the problem being researched as well as the purpose of the research being conducted to show the need for increased ESOL support services in kindergarten. In Section 1, I also explained the theoretical base that was employed as well as the research methodology that was used in this study, which is further explained in Section 3. The scope and delimitations were described. Section 2 presents a review of the literature to support the research described in section 1 and provides further evidence demonstrating the need for this research study. Section 3 provides a more detailed overview of the quantitative study, including the research design and approach, setting and sampling method, instrumentation, and data collection. Section 4 includes the data collected and analyzed from the DRA2 assessments given to the

students. Section 5 provides the conclusion of the study and recommendations for future study.

Section 2: Literature Review

Introduction

In this literature review, I explore theory and current research on the efficacy of ESOL student support services as a way to improve progress in the areas of vocabulary achievement, reading comprehension, and reading level. I searched for articles containing the words *ESOL*, *English as a second language*, and *ELL* in conjunction with *reading comprehension*, *vocabulary* and *primary grades*. ESOL is a growing topic within the United States, and it has made a significant impact on the schools in the county under study. Literature pertaining to Gwinnett County as well as general information on the topic of ESOL support services is reviewed. This review contains analysis of articles appearing in peer-reviewed journals and educational magazines. Current research relating to the previously mentioned hypotheses and study questions is reviewed. The theories of Lev Vygotsky and Noam Chomsky are also reviewed.

Vygotsky's Social Learning Theory

A review of Vygotsky's social learning theory was done in the context of language acquisition in children. Vygotsky found that social interaction and learning next to each other are the primary ways in which a child learns language. Chiappe, Siegel, & Wade-Woolley (2002) used Vygotsky in a study of ESOL students. The authors stated, "exposure to multilingualism in childhood has been hypothesized to increase children's multi-linguistic ability" (p. 4). What this implies is that children who are exposed to more than one language from a young age are more capable of learning and comprehending a language other than their native language. This is support for starting ESOL support

services in kindergarten. This same article concluded that "performance on the WRAT-3 (Wide Range Achievement Test) reading test suggests that ESOL children showed greater growth between kindergarten and first grade, indicating that good instruction may help close the gap for children from linguistically diverse backgrounds" (p.248). ESOL support services may augment instruction in ways that lead to better learning.

Lesaux and Siegel (2003) support the theory of scaffolding. *Scaffolding instruction*, according to Vygotsky, involves the "role of teachers and others in supporting the learner's development and providing support structures to get to that next stage or level" (Raymond, 2000, p. 176). The research performed indicated that early identification and intervention can be beneficial for ESOL speakers and can help them develop early reading skills. This is supported by Goldenburg (2008), who stated that exposure to good instruction and scaffolding by the teacher leads to student success. Ranker (2009) also stated that scaffolding is essential to ELLs' acquisition of a second language.

Scarcella and Oxford (1992) address Vygotsky's zone of proximal development. The authors apply Vygotsky's social development theory to their own, called *tapestry theory*. Scarcella and Oxford's book is full of reading strategies that they contended should be woven together like a tapestry but driven by the learners' abilities and interests. ESOL support services do more to focus on an ELL's abilities and interests.

Elboj and Niemela (2010) stated that students' learning cannot be completely separated between school and home, as their sociocultural environment affects their language development. They concluded that positive interactions need to be increased in

order to increase academic achievement. Placing students in ESOL support services homogenizes the ELL's sociocultural environment and enhances learning opportunities based on Vygotsky's zone of proximal development. When ELLs are learning among others of a similar sociocultural background, learning improves.

McCafferty (2002) discusses how Vygotsky's zone of proximal development theory used today can affect future development levels. This is based around how Vygotsky's theory plays out in reality. What students can do right now with assistance they will eventually be able to do on their own. There are many things that people learn from each other, and they learn them when they are developmentally ready. Aljaafreh and Lantolf (1994) discussed the zone of proximal development, quoting Vygotsky as saying, "every function in the child's cultural development appears twice: first, on the social level, and later, on the individual level" (p. 621). This refers to the fact that people learn things from others first. The individual learning comes into play as the person develops and matures. ESOL support services place ELLs in small groups so that social development can emerge, strengthening the individual later. This is the best learning environment for ELLs.

Chomsky's Transformational Linguistics

Chomsky's (2005) theory of transformational linguistics indicates that there are three factors that affect language acquisition: genetic endowment, experience, and principles not specific to the faculty of language. *Genetic endowment* refers to the fact that people have certain linguistic abilities from birth and that some limitations will naturally be resolved as a child ages. It has been a widespread theory that people are able

to speak any language from birth but peoples skills become tailored to their home language as they develop. The second factor he discussed is *experience*. Experience guides language acquisition just as it does other areas of human development. The more experience a person has in using a new language or skill, the more proficient they become. Therefore, by practicing a new language on a daily basis, the student is likely to become proficient more quickly. ESOL support services break ELLs into smaller groups and thereby allow more practice for each individual.

The third factor is *principles*. According to Chomsky (2005), the two principle subtypes are "principles of data analysis that might be used in language acquisition and other domains and principles of structural architecture and developmental constraints" (p. 6). This factor involves the underlying principles to be followed when learning the language. These principles include how words are used, the sounds of the letters, what parts of words are emphasized, and many more principles that can be unique to a language. ESOL support services incorporate many aspects of the principles when ELLs are allowed to practice their language acquisition in smaller group settings.

Chomsky (2005) also stated that there are several stages of vocabulary development, which he referred to as the *two-word stage*, *three-word stage*, and *great leap stage*, the last of which is characterized by an unbounded capacity to generate language. Chomsky stated that these are observed in the early stage of childhood. A second language can be confusing to the child as it becomes more complex and sentence structure develops. This indicates that sentence structure must be explicitly taught to avoid confusion. Holmes, Rutledge and Gauthier (2009) stated that "second language

reading development is different because ELL learners draw on their first language experiences and competencies to inform and influence their reading in the second language" (p. 287). The students draw conclusions from their knowledge of their first language to interpret what they read in English. This can be helpful as a tool for ESOL support services to help the child develop better vocabulary and reading skills by allowing ELLs to apply their first language skills to improve their reading comprehension.

Roberts (2012) discovered that children who are just beginning to learn a language or are not literate in a language benefit from tying experience to language acquisition ability. Rezaei and Dezhara (2011) stated that learning a second language has to involve more than teaching vocabulary by reading a list. They said that it is important for students to be interested in what they are learning. If they are taught words and sentences that are relevant to them, they will acquire the language faster. In small group ESOL classes, the teachers are able to focus on what the exact needs of the students are at the time of instruction.

Inadequate Policy and Decision Making

Much research has been done on ESOL students and the services they require to become proficient in the English language, yet many school districts are taking cost-cutting measures without looking at the current data. Tyack and Cuban (2005) noted that education policy makers are rarely educators and also rarely allow research to guide their decision making. Additionally, principals often do not use research when making decisions in regard to students' learning. Clark (2009) reported that one principal in his

research said, "At a certain point there were just so many mixed messages and contradictory directives and policies that we didn't really know what to do"(p.20). According to Schwartz (2011), the mission of every school should be creating an effective and comprehensive program for early literacy instruction. However, Nassaji (2012) noted that research is not always explored when looking at teaching a second language. Delli-Carpini (2008) noted many differences in teaching methods and standards when reviewing ESOL classrooms. Teachers get their information from many sources but do not always look to the actual research for information. In turn, teachers use the same methods they are comfortable with, not necessarily what has proven to be most effective through research.

Studies have been conducted calling attention to the need for better policy through informed decision making. Tileston (2011) stated that low-income and minority ELLs lack the extra support they need to be near the same level as their English-proficient peers. Koot et al. (2011) noted that ELLs with insufficient language abilities are at risk of not being accepted by language-proficient peers. Policy that mandates ESOL support services might then also circumvent disciplinary issues and do more to unify a school's student body.

The Madison Academic Language Working Group (2010) was created at the University of Wisconsin-Madison in order to study language acquisition and how it affects policies, educators and stakeholders. They stated that sharing models is an effective way to get the conversation started about the best practices that affect academic language development and achievement, especially in ESOL students. They said that it is

important to have these conversations to ensure that the policies in effect are the best for the population of students that are being served.

Language Acquisition

Duffield (2009) points out that many studies have been conducted on adults and children on the topic of first and second language acquisition. However, much of the research has been inconclusive or highly exclusive due to circumstances or conditions that cannot be controlled, such as privacy issues and limitations to research. Hawkins (2001) stated that most of the structures needed for language acquisition are adopted in the first 3.5 years of a child's life. Hawkins went on to say that by the time a child reaches 5 years of age; the child will have acquired an adult-like understanding of the more complex aspects of an acquired language. These learning benchmarks are acceptable if a child's learning has been accompanied by Chomsky's (2005) factors of experience and principles not specific to the faculty of language acquisition. These needed factors are provided through ESOL support services.

Tochon (2009) stated that research has shown a serious decline in language acquisition ability over time. This provides more evidence to the idea that ESOL should be started earlier rather than later. Overall, initial language acquisition happens due to the environmental factors and experiences the person has. People learn to speak the language spoken to them and around them, so the environment is important, according to Vygotsky's proximal development theory. Armstrong (2010) stated that children develop language acquisition when they are actively engaged in a conversation with a person with whom they have a relationship. These relationships could be child to family, peer to peer,

or student to teacher. Delaney (2012) did a study to determine whether hearing the language would help with acquisition. The results did show some correlation, but Delaney determined that the results were inconclusive and encouraged further research. The research study I conducted showed the ESOL support services practice of placing students into smaller conversational groups could have resulted in faster second language acquisition.

The environment plays a role in second language acquisition, but several other aspects influence growth in this area. Fram and Kim (2012) stated that there seem to be genetic factors, like Chomsky's (2005) transformational linguistics, but there is substantial evidence that early development is also influenced by environmental factors. Burgess-Brigham et al. (2012) show that the sociocultural environment is important to second language acquisition. Vygotsky's theory of the zone of proximal development supports this, and one may conclude that students (a) learn better from someone who has mastered the language and is explicitly teaching it to them, (b) learn better from ELL peers in the same sociocultural group, and (c) learn better if placed in smaller groups at the same level of second language acquisition. Chomsky's (2005) psycholinguistic perspectives bring attention to the internal processing of learning the new language, indicating that the language needs to be broken down into parts that the student can mentally process. Current research supports the theories of Chomsky and Vygotsky and supports the ESOL support services practice of placing ELLs into small group settings for explicit second language instruction.

ESOL Student Services and Primary School Research

A study by Hammer, Lawrence, and Miccio (2007) addressed bilingual children's receptive language abilities and reading comprehensive outcomes in Head Start and kindergarten. They tested 88 students in Head Start and kindergarten at the end of the school year. The study determined that measuring growth in language acquisition at any point in time is more important than measuring performance at the end of a preschool language acquisition program. The researchers sought to determine the difference in language acquisition between children who had been exposed to English and Spanish from birth as opposed to those who had been exposed to only Spanish. The results indicated that while it does make a difference, students from either group can achieve at the same levels with proper training. Monitoring over time is needed to really see a change in the acquired language abilities of the children. The DRA2 test is used by the county under study and is delivered two to three times a year. ESOL support services can use the DRA2 results to tailor remedial learning as needed.

Araujo (2002) conducted a longitudinal study of literacy development of kindergarten ELLs, in a Portuguese-English classroom. Araujo observed lesson planning, gathered work samples, and conducted interviews. She noticed that literacy instruction was embedded in three focal literacy events that included circle reading, journal writing, phonics, and handwriting. The amount of literacy instruction helped these students in the acquisition of a second language. Such practice, with careful monitoring, can raise learning levels to meet first-year standards after a year of ESOL instruction in

kindergarten. Griva and Sivropoulou (2009) found in their effectiveness study that there are many positive effects of early intervention for foreign language learning.

Erakaya and Drower (2012) noted that vocabulary development is essential to becoming proficient in a second language. The Stand For Children Leadership Center (2015) stated "lower income children have a 30 million word deficit when entering pre-school that begins as early as 9 months old." Many of these students who need ESOL services come from low income families which could lead to slower vocabulary development. I feel that this component is very relevant to my research topic. Two of my questions refer to whether students who receive ESOL support services gain more in the area of vocabulary development and reading comprehension. It is very difficult to learn to read or write in a language when one is not familiar with the vocabulary. Iannone-Campbell and Wasik (2012) restated that one of the most important skills young children need to develop to be successful readers and to succeed in school is vocabulary development. Calderon, Sanchez, and Slavin (2011) stated that "a child's vocabulary in kindergarten and first grade is a significant predictor of [a student's] reading comprehension in the middle and secondary grades; it also predicts future reading difficulties" (p. 110). Therefore, if a student does not develop a good vocabulary in the primary grades, the student could experience reading difficulties in the later years and lower success in school. They also state that a student's chances of success are more promising if there are quality learning programs in place in preschool through second grade because student needs at this age are more manageable. Uchikoshi (2006) made some very relevant points about predictors of vocabulary development. This study tested

kindergarten students at three separate times a year. The author also collected information on whether students had had previous exposure to English at home and whether watching an English television program at school or at home made a difference. They discovered that the students who watched English programs at home as well as shared reading experiences, such as reading with a parent, made greater gains in vocabulary development than those who did not. This is also true in the classroom; the more exposure students have to the English language, the more they will develop vocabulary. The study also found that the younger these students had exposure to the English language, the better. This supports the idea that students who start ESOL services in kindergarten benefit much more than those who do not start until the later grades. Vocabulary is a building point in all academic areas. Pavlack (2013) stated that in small groups it is easier to help students understand vocabulary and comprehend what they are reading by deconstructing the text and occasionally translating it into the student's home language. ESOL support services employ this teaching method. August, Artzi, and Mazrum (2010) stated that having limited skills in English could inhibit students' achievement in science. This is true in all academic areas; limited English skills could inhibit learning in any area in which reading and writing are involved. A comprehensive ESOL program that used ESOL support services would help circumvent this risk. Barcroft (2012) stated that vocabulary is the main component necessary for language acquisition and is needed for successful communication. Brown (2012) explored the concept that not only is vocabulary needed to build reading comprehension, but also good comprehension could lead to building a stronger vocabulary. These skills should be

taught together to get the greatest results. Aukrust and Lervaa (2010) stated in their study that they found that the lack of vocabulary for ESOL students leads to a lag in reading comprehension; therefore, training in oral vocabulary should be given high priority. ESOL support services can fill this need.

Reading Levels

Most schools have a program they use for testing reading levels. It is usually chosen by the school district. Some of the programs for testing reading levels are the Developmental Reading Assessment, 2nd ed. (DRA2), Guided Reading, Lexile, and Accelerated Reader. These programs are scripted to test fluency and comprehension levels, as well as determine which book level is the right level for instruction. DRA2 and other tests determine vocabulary attainment and reading comprehension. Hammer, Lawrence, and Miccio (2007) showed that careful monitoring throughout the year is more important at determining when intervention can take place and can be more effective. ESOL support services offer this careful monitoring and help assure reading levels are attained as determined by DRA2.

Bilingual Classrooms

Lopez and Tashakkori (2004) studied 87 kindergarten and 128 first grade students. The control group was taught in English in a bilingual setting 70% of the time and the full immersion group were taught in English 90% of the time. The results indicate that despite lower scores at first the students in the bilingual classroom tested very close to the full immersion class at the end of the study. This study indicates that bilingual

methods and full immersion methods have the same outcome. ESOL support services, therefore, would aid the use of either method in second language instruction.

Reading Instruction and Achievement

In looking for some instructional support Drucker (2003) identified strategies that help students gain reading and writing skills. She stated that it usually takes an ELL as many as 5 to 7 years to become as proficient in speaking English as native speakers. She also said that on a very basic level vocabulary development is crucial for improved reading comprehension. Drucker supports the idea that the earlier these students receive ESOL support services the better. She then suggested ways to build vocabulary such as singing, listening to books on tape, and read-alouds. According to Artiles and Ortiz (2010), inadequate instruction is to blame for academic problems the ELL may encounter. ESOL support services augment the learning processes. Many approaches to learning can be explored in smaller groups.

McKeon (2005) stated that the ELL population of Georgia may increase as much as 50 percent in coming years. Much of this increase will be attributed to immigrant families moving to Georgia. Cho, Chen, and Shin (2010) stated that a major concern of immigrant families is the academic achievement of their children. Zyzik (2008) stated that when it comes to learning the foundations to help reading, such as grammar, students who have explicit as well as implicit instruction will learn better. Adesope et al. (2011) stated that collaborative reading interventions, such as small groups working together, had greater results than phonics instruction or interventions using multimedia. In small groups the students are working together to understand something and can help each

other when necessary. Small group instruction such as pull out ESOL classes, which occurs through ESOL support services, would have a greater impact than just having whole group instruction in a general education classroom.

Developmental Reading Assessment, Second Edition (DRA2)

This research study used Developmental Reading Assessment 2nd ed. (DRA2) test results as the dependent variable. Chang (2011) used the DRA when he was testing growth in reading groups for under achieving students. In Chang's study, a group of first grade students and a group of second grade students were below grade-level in reading. Chang gave the DRA test at the beginning of the year, then provided one-on-one tutoring sessions with teacher candidates and repeated the DRA at the end of the year. Chang then showed the growth that the students had made through the year with the difference in the DRA results. This is very similar to how the DRA was used in this study to show the difference in vocabulary development, reading comprehension, and reading levels among students who did and did not receive ESOL support services. Lin (2010) stated that Dynamic Assessments (DA) would be the best way to assess English language learners. Dynamic Assessments are assessments that are done one-on-one so the instructor can gain a sense of what a particular student's needs are. The DRA2 is the 2nd ed. of DRA and is a form of DA where the teacher can see exactly what errors a student is making and can base their instruction from that particular student's needs. DRA2 was chosen over DA because DRA2 is delivered several times a year and is the test used by the county where the research took place.

Methods Approach

The type of data being collected determines what methodology is suitable for research. The dependent variable for this research study was archival ratio data taken from scores received on the DRA2 pretest and post test. Johnson and Christensen (2008) described the different research designs. Quantitative uses numbers and statistics to perform analysis to find cause and affect relationships, and to make predictions. Qualitative research is based on thoughts, feelings, behaviors, and beliefs. Because of the numerical nature of the DRA2 data that was collected, a quantitative approach is best suited to answer the research questions posed in this study.

Choice of Methodology

This research study tried to determine whether students with ESOL support services have greater progress with second language acquisition than students who do not receive ESOL support services. The DRA2 was used to measure second language acquisition progress. The research used a pretest at the beginning of the school year and a posttest at the end of the school year. Scores on the pretest were compared to scores on the posttest to answer the research questions stated in section 1.

An independent samples *t-test* was considered for use in this study. The Wikimedia foundation stated in the book Economic Statistics (2010) that independent samples *t-test* can be used whenever "two separate sets of independent and identically distributed samples are obtained, one from each of the two populations being compared" (p. 307). The use of a paired *t-test* for this research was also considered. Use of a paired *t-test* requires nonrandom sampling (Caprette, 2012, p. 1). The *t-test* was not appropriate

for this research study because it analyzes two sets of data collected in the same way. The data collected on the pretest could differ significantly just by coincidence even if random sampling is used. In order to account for this a covariate must be used. Gall, Gall, and Borg (2003) stated that to ensure that the results are from the treatment and not outside factors, an ANCOVA analysis should be used. The ANCOVA used an independent variable, dependent variable, and a covariate to produce the results from the data collected.

Need for More Research

This review of current literature covered accepted knowledge on best practices for teaching English to ELLs. There is still little known about the long term effects of ESOL support services on a student's future academic success. A longitudinal study over a 3 or 4 year period is needed to determine if early preschool ESOL support services have a positive effect on students' academic success in later grade levels. My belief is that services at a young age are much more beneficial that waiting until the students are older, and a longitudinal study may support that idea. Education decision makers in the county to be used in this research study believe ESOL support services at the preschool level are not essential, and the kindergarten students are the last to be served. A longitudinal study would help determine if early ESOL support services in preschool years would improve academic success in later years.

Summary

My literature review was based on building vocabulary, reading comprehension, and language acquisition for ESOL students. Vygotsky and Chomsky's theories of

scaffolding and exposure to good instruction will lead these students to be successful in learning a new language. Both theorists concur that early instruction allows students to build on learning. However, despite the research, teachers and administrators are not making policies based on the current data. Not all students who should be receiving ESOL support services are receiving those services. In many of the articles reviewed, vocabulary is listed as one of the most important factors for learning a language. Language acquisition is based around learning the basics of the language, vocabulary being a primary factor. One way to accomplish this is to have the students placed in small groups with an ESOL teacher. The students' reading comprehension will only improve if they understand the language they are reading in. Increased vocabulary development assures reading comprehension. Small group interaction is essential.

Section 3: Research Method

Introduction

In Section 3, the research design and approaches are explained, including the setting and sample, instrumentation and materials, and data collection procedures. My goal was to study students who started ESOL support services in kindergarten and those who did not in order to determine which group did better in vocabulary development, reading comprehension, and grade level placement as a result of the DRA2 scores obtained. The results of this research study will be presented to decision makers in the county under study so that considerations can be made that might help to determine how ESOL support services are allocated.

Research Design and Approach

This quasi-experimental quantitative study, using a between-subject, pre/posttest control group design (Creswell, 2003), compared the performance of two groups of ESOL elementary students at an elementary school in the county under study. The study population was composed of approximately 60 students organized in 16 classrooms. The scores of the ESOL students being directly served and the ESOL students not being served were compared by collecting the results from Developmental Reading Assessment, Second Edition (DRA2) tests. The data pieces were archival and requested via a data use agreement.

A nonequivalent control group design was the best fit for this research. Creswell (2003) stated that this design is best used when the assignment to a test group is not random. This design method was best because this study tested whether students who

received ESOL support services in kindergarten achieved higher scores on the DRA2 test than the ESOL students who did not receive ESOL support services and were served only by their classroom teacher. Students were not randomly picked but needed to meet certain criteria to be assigned to a group. A pretest and posttest were given to both groups to gauge achievement gains. The figure below illustrates the design that was chosen.

Group A (ESOL support services provided) 01----------x----------02

Group B (No ESOL support services given) 01----------02

01 = The times the pretests are given

02 = The times the posttest are given

X = the treatment, in this case directly served by ESOL support services

Figure 1. Research design.

Setting and Sample

The study was conducted in an urban elementary school of approximately 1,100 students. The total population group of interest was 120 ESOL students. The list of names was provided to me from the ESOL teachers at the elementary school in the county under study. The student subjects in this study were from classes I had not served. Out of that list, students who were not there for testing or for a significant part of the year were excluded. These students have been further identified as being ESOL based on the ACCESS test and parents stating that they spoke a language other than English at home. The ESOL teachers provided a list of ESOL students who had and had not received services. Data were retrieved from their records and were analyzed. DRA2 tests are given

every 2 to 3 months as part of regular data collection for each student. DRA2 test results for the beginning of the year and at the end of the year were used.

Treatment

The treatment applied was the ESOL support services the students received. All students, including those in this study, were tested at the beginning of the year before receiving any services and at the end of the year after having received services. Results from the test scores of the students in this study were compared to determine if there was a significant difference in achievement based on whether the students received ESOL support services or not. The method selected to achieve this was a statistical ANCOVA. The ANCOVA assesses whether the means of two groups are statistically different from each other using a covariate to ensure that influences outside of the treatment are not affecting the results. The ANCOVA analysis is appropriate whenever the goal is to compare the means of two groups. The group who was receiving ESOL services was pulled out for a period of 45 minutes a day to receive small group ESOL services by a teacher who was ESOL certified. These services included but were not limited to vocabulary instruction, reading instruction, and grammar practice. A significant amount of interaction occurred during these ESOL classes. This included pairing of students for many activities, as well as small group learning. The members of the other group, which was composed of students not being pulled out, received instruction in the same skills from their general education teacher. The general education teacher may or may not have been ESOL certified. However, all teachers receive the same instruction in how to administer the DRA2 assessment. The students were not aware that they were part of this

study because the data pieces collected were archived for every student. The teachers became aware when the data was requested after being collected. Therefore, the possibility of bias was nullified.

Instrumentation and Materials

The instruments that were used were the Developmental Reading Assessment, Second Edition tests (DRA2). The DRA2 program is a program to test reading. It is composed of a set of books and recording sheets that test fluency and reading comprehension. The student does a cold read of a book, and errors are recorded. Then, based on these errors and the student's answers to scripted questions, the student's reading level and fluency level are determined. A level is recorded as a letter of the alphabet, which then corresponds with books in the reading series for instruction. As shown in the literature review, DRA2 has proven to be effective in gathering data on students' current reading level, fluency level, and comprehension level. DRA2 has been shown to be a valid instrument for the measurement of these skills. It accurately tests what it was designed to measure. The DRA2 has been proctored individually during class time as a regular procedure at the school. DRA2 tests are given one-on-one to students in a silent environment. The students did a *picture walk* and described what they saw to the examiner, listened to a brief description of a book, and then did a cold read of the book. The examiner recorded every mistake and mispronunciation to determine where errors occurred most frequently. DRA2 tests were given every 2 to 3 months as part of regular data collection for each student. These were then archived for growth to be tracked for each student. I will provide the raw data upon request. After each test, each student had a

reading level that was a number as well as a fluency score for how many words per minute the student could read. Their vocabulary scores were calculated by the amount of words that comprised the text.

Threats to Validity

The threats to predictive validity were that the study was limited to one school, and there was the possibility of teacher bias. The teachers needed to give the test in the same manner to avoid bias. The DRA2 program is highly recognized and has strong validity ratings. Pearson (2011), the developer of the DRA program, stated that the DRA2 was developed by using research literature and the opinions of teachers to identify and include behaviors and characteristics of good readers.

In order to ensure validity, ESOL teachers confirmed that they were following the county standards for ESOL instruction. According to the guidelines that are set for ESOL teachers in the handbook of the county under study, a pull-out model involves students being taken out of a general education class for the purpose of receiving small group language instruction from the ESOL teacher (see Appendix A). For Grades K-3, these must equal 45-minute daily segments or a minimum of 225 minutes weekly. These teachers must also hold necessary and appropriate ESOL endorsement or ESOL certification issued by the Georgia Professional Standards Commission (see Appendix B).

The DRA2 program underwent several reliability and validity analyses, including internal consistency reliability, passage equivalency, test-retest reliability, and interrater and expert rater reliabilities. According to the Pearson website, the DRA2 is a valid

measurement of accuracy, fluency, and comprehension. Several measures of validity have been conducted, such as a criterion-related validity, construct validity, and content validity (*DRA2 K-8 Technical Manual*, 2011, p. 47). The threats to external validity relate to whether the data can be used to say that the results would be the same for a large population. This level of external validity could be improved by repeating the data collection and analysis with other participants.

Threats to Reliability

One threat to external reliability would be if the students were not tested under the same conditions each time—for example, in a quiet environment as opposed to a noisy one. Who performs the test could also threaten external reliability. If students do not respect the teacher performing the test, they may not perform in the same way as they would for another teacher. A threat to internal reliability is present if the teacher performing the test does not use the rubric and script provided.

In order to ensure reliability, ESOL teachers confirmed that they followed the rubric and script established by the DRA2 kit. These scripts are developed for each book in the testing kit. The numbers of words and complexity levels vary greatly, which is how the reading level is determined. An example of one script and rubric is provided (see Appendix C and Appendix D).

Data Collection and Analysis

DRA2 test results have been collected from the study site through a data use agreement (see Appendix E) after obtaining permission from the principal of the school. The teachers administered the DRA2 tests as normal school procedure. They followed the

students through a picture walk and then read a short prompt about the book. After the picture walk, the teacher listened to a cold read of the text and recorded the mistakes the student made. The student then answered scripted questions about the text. The student was given a letter of the alphabet signifying his or her reading level. I collected these archived results from the person designated by the principal of the elementary school in the county under study. The ESOL teacher signed a confidentiality agreement. The independent variable was instructional type (i.e., whether students were receiving ESOL support services or not). The dependent variable in H01 (There is no impact from receiving ESOL support services in kindergarten on students' reading level at the end of kindergarten) was the students' reading level. The dependent variable in H02 (There is no difference in comprehension achievement between students who were provided with ESOL support services and those who were not) was the students' comprehension achievement. The dependent variable in H03 (There is no difference in vocabulary achievement between students who were provided with ESOL support services and those who were not) was the students' vocabulary achievement.

Statistical analysis was used to analyze the DRA2 scores. They were analyzed to observe the difference between ESOL students who were and were not directly served by ESOL support services. The method selected to test this was ANCOVA analysis. There was one nominal item on the instrument used to classify students by whether they had ESOL services (1) or did not receive ESOL services (2). I had to make some changes to my method of analysis due to the limited data. This is included in the descriptive analysis to report the data found.

Variables

The independent variable was whether or not the students had direct ESOL support services in kindergarten. The dependent variable was the DRA2 posttest scores, showing comprehension and reading level. The covariate was the DRA2 pretest scores.

Participants' Rights

The data for the study were preexisting data drawn from the DRA2 tests the teachers administered throughout the year and archived. DRA2 tests were given every 2 to 3 months as part of regular data collection for each student. Data were coded with a number to protect the identity of the study participants. I did not collect the data until I had a signed Data Use Agreement and received IRB approval # 12-04-13-0053277. I have not taught these students. I have not had any relationship with the participants or their parents. This prevented any bias and did not affect data collection. I collected the data from the study site to use in my analysis.

Summary

In this section, I explained the research design and approach. I also introduced the setting and sampled population. Further, I explained how the data were collected and described the materials used to collect those data, listing any threats to validity and reliability that may have been present. The method of analysis was explained along with the variables that were tested. The participants' rights were listed. In the next section, I present the data collected during this study and the final results.

Section 4: Results

Introduction

For this study, data were collected from an urban elementary school. The data collected were DRA2 posttests and pretests from kindergarten students who had attended this school and met certain criteria. They had to have been there the majority of the year, taken both tests and been identified as ESOL students. One set of students had been served by an ESOL teacher, and the other set had not been served by the ESOL teacher. The archived data was collected by a teacher at the school and provided to me coded by number and school year. The number of students who met the criteria of the study was 106. The limited number and the data did not meet the initial requirements for an ANCOVA analysis, so further tests were conducted to make the data suitable for a Kruskall-Wallis test to be conducted. This data were then analyzed to address the research questions. The research questions were as follows:

1. What is the impact of receiving ESOL support services in kindergarten on students' reading level at the end of kindergarten?
2. What is the difference in comprehension achievement at the end of kindergarten between students who were provided with ESOL support services and those who were not?
3. What is the difference in vocabulary achievement at the end of kindergarten between students who were provided with ESOL support services and those who were not?

Data Analysis

Participants

There were 106 respondents in this study. Across all respondents, the mean pretest score was .15 (*SD* = .39), while the mean posttest score was 4.98 (*SD* = 3.82). The first level of the DRA2 test contains basic and repetitive sight word books in order to test a student's reading ability. Students obtain a score of 0 if they are unable to read these simple, repetitive texts. The assumption that the students not receiving ESOL support would come in with some reading ability was not met, as demonstrated by the zeros in Table 1. Table 1 contains means, standard deviations and percentages for the no-ESOL-support group, yes-ESOL-support group, and total sample. Those who did not receive ESOL support were nonreaders (meaning they could not read English) and obtained scores of 0 on the DR1 pretest measure.

Table 1

Frequencies: Demographics

Group	*N*	*M*	*SD*	Min	Max
ESOL support—No					
DR1 pretest scores	51	0.0	0.0	0	0
DR1 posttest scores	51	4.14	2.51	1	10
ESOL support—Yes					
DR1 pretest scores	55	.29	.50	0	2
DR1 posttest scores	55	5.76	4.62	0	18
Total					
DR1 pretest scores	106	.15	.39	0	2
DR1 posttest scores	106	4.98	3.82	0	18

Results

Preliminary Results

Before an ANCOVA was conducted, several preliminary tests were completed to determine whether the assumptions needed to perform an ANCOVA were met. These assumptions include normality, homogeneity of variance, linearity, and homogeneity of regression slopes (Field, 2012; Tabachnick and Fidell, 2012). Below is a summary of results for each test.

Before the test of normality was conducted, an outlier analysis was performed using boxplots. Boxplots were generated for pretest and posttest scores for both the yes-ESOL-support group and no-ESOL-support groups. In boxplots, extreme outliers are indicated by the asterisks next to the row number. The boxplots revealed that there were no extreme outliers. See Figures 2 and 3.

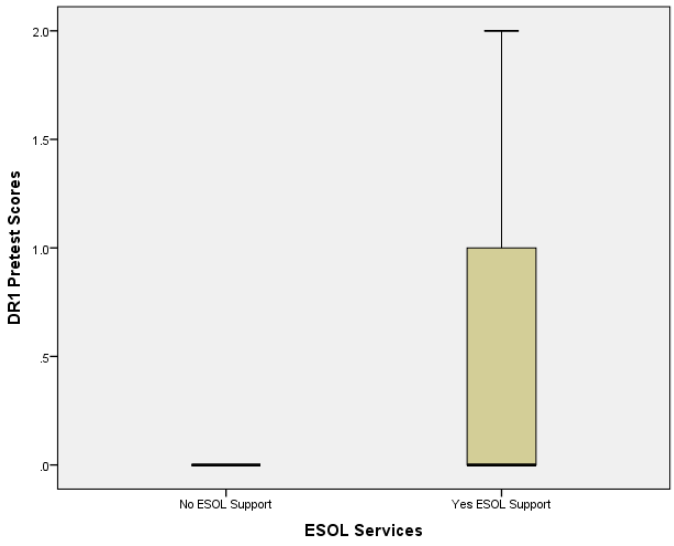

Figure 2. Boxplots of pretest scores for no and yes ESOL support groups illustrate no extreme outliers.

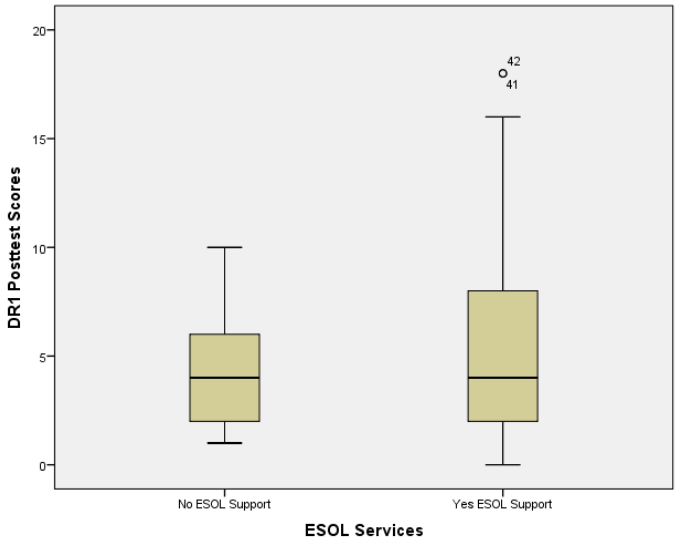

Figure 3. Boxplots of posttest scores for no and yes ESOL support groups illustrate no extreme outliers.

The Shapiro-Wilk test of normality was conducted to assess the assumption of normality for pretest and posttest scores for the no-ESOL-support group and the yes-ESOL-support group. If the *p* value is below .05, then the distribution is significantly different from the normal distribution. Results indicated that the distributions for the yes ESOL support group pretest, $SW(55) = .589$, $p < .001$, and posttest, $SW(55) = .886$, $p < .001$, were nonnormal. Additionally, the posttest score distribution for the no-ESOL-support group was nonnormal, $SW(51) = .862$, $p < .001$. Shapiro-Wilk could not be calculated for the no-ESOL-support group, as all the scores were 0 because these students were nonreaders, meaning they could not read English. Therefore, these students were unable to obtain a score on the initial DRA2 test, leading to the zero scores.

Levene's test of homogeneity of variance was conducted to assess the assumption that the variances between the yes and no ESOL support groups were equal on the pretest

and posttest measures. There was no variation in pretest scores among the no ESOL-support-group; therefore, Levene's test could not be calculated. Results of Levene's test indicated that the variances were not homogeneous for posttest between the no and yes ESOL support groups, $F(1, 104) = 11.95$, $p = .001$. Therefore, the assumption of equal variances was violated for both the pretest and posttest, as the p value for Levene's test was less than .05 for the posttest and there was no variation in scores in the no-ESOL-support group on the pretest scores. This is evident from looking at the boxplots generated previously, where the distance in length of the boxplots between the no and yes ESOL groups for both the pretest and posttest are very different. For example, in Figure 1, there is no variation in pretest scores among the no-ESOL group. So, the length of the box from the bottom whiskers to the top whiskers for the yes-ESOL group is much larger in length.

Linearity was assessed by generating scatterplots between pretest and posttest scores by group. If the line of best fit is horizontal or flat, the data was not linear. Figure 3 indicates that the data was not linear and therefore violate the assumption of linearity.

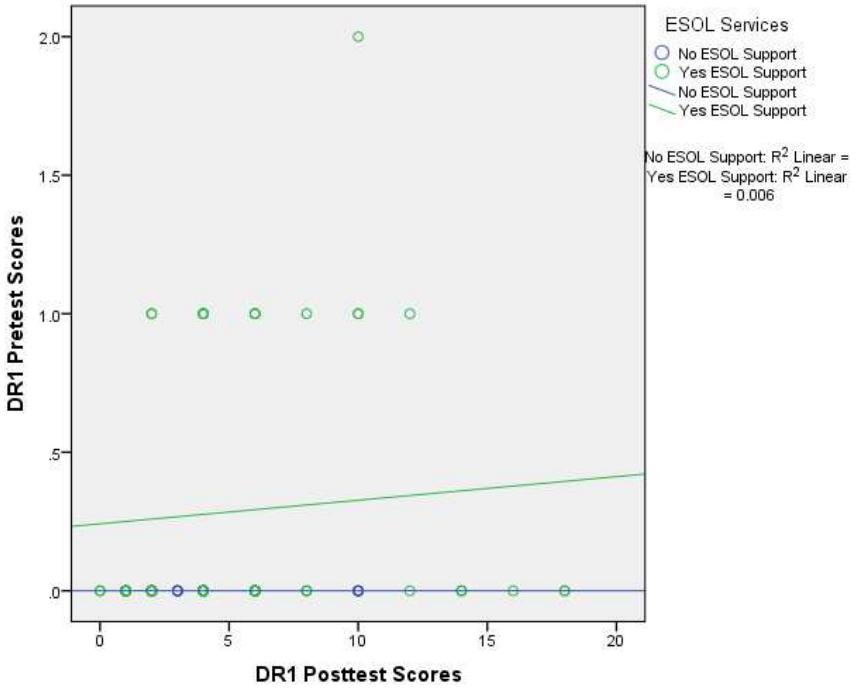

Figure 4. Scatterplot between pretest and posttest scores by ESOL support group indicates that the data are nonlinear.

Given that assumptions of linearity, normality, and homogeneity of variances were violated, the analysis of covariance could not be conducted. As an alternative, Tabachnick and Fidell (2012) suggested subtracting the pretest scores from the posttest scores and then performing either a parametric or nonparametric between-groups analysis. By subtracting the pretest scores from the posttest scores, the effect of the pretest scores is accounted for in the posttest scores. As there were violations in homogeneity of variance and normality, the Kruskall-Wallis test, the nonparametric equivalent of the one-way ANOVA, was conducted, where the assumptions of normality and homogeneity of variance are not required (Field, 2012; Tabachnick and Fidell, 2012).

The Kruskall-Wallis test converts scores to ranks, and then the mean rank for each group is compared.

Primary Analysis

The Kruskall-Wallis test was conducted to address three research questions. The first research question concerned the impact of receiving ESOL support services in kindergarten on students' reading level at the end of kindergarten. The null hypothesis was that there was no impact of receiving ESOL support services in kindergarten on reading level at the end of kindergarten. The second research question concerned the difference in comprehension achievement between students who were provided with ESOL support services and those who were not. The null hypothesis was that there is no difference in comprehension achievement between students who were provided ESOL support services and those who were not. The final research question concerned the differences in vocabulary achievement between students who were provided with ESOL support services and those who were not. The null hypothesis was that there was no difference in vocabulary achievement between students who were provided with ESOL support services and those who were not.

Research Question 1

To determine the impact of receiving ESOL support services in kindergarten on students' reading level at the end of kindergarten, a signed rank test was conducted. In this analysis, pretest and posttest median scores were compared among those who received ESOL services. Results indicated that median DR1 posttest scores ($Md = 4$) were significantly higher than median DR1 pretest scores ($Md = 0$), $z = -6.347$, $p < .001$.

As a result, the null hypothesis is rejected, as there was a significant improvement in scores.

Research Questions 2 and 3

The Kruskall-Wallis test was conducted to assess whether there were significant differences in comprehension achievement and vocabulary achievement between ESOL students and non-ESOL students. Comprehension and vocabulary achievement were captured in DR1 posttest scores. Results of the Kruskall-Wallis test revealed that there was no statistically significant difference in DR1 posttest median scores between the yes-ESOL-support group ($Md = 4$) and the no-ESOL-support group ($Md = 4$), χ^2 (2, 106) = .834, $p = .361$. Based on these results, I failed to reject all three null hypotheses.

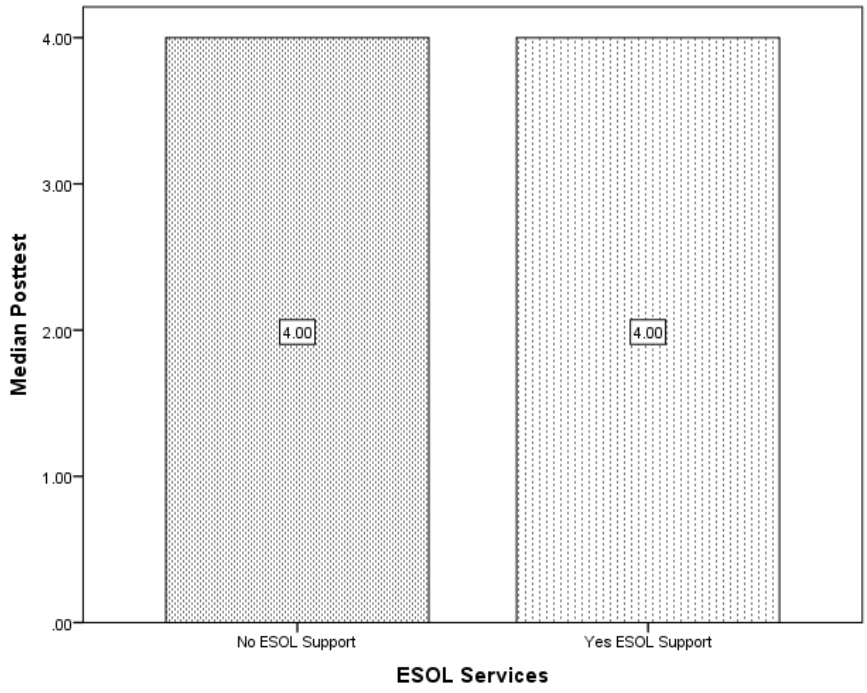

Figure 5. Bar chart of median post test scores after subtraction of pretest scores for no-ESOL-support group and yes-ESOL-support group.

Summary

The first null hypothesis stated that there was no impact of receiving ESOL support services in kindergarten on reading level at the end of kindergarten. I failed to reject this hypothesis, as there was no statistically significant difference in the difference values of the DR1 scores between the ESOL and non-ESOL groups. This could be because the ESOL services provided enabled the ESOL students to make the same gains as their peers.

The second null hypothesis was that there is no difference in comprehension achievement between students who were provided ESOL support services and those who were not. The hypothesis was also rejected, as there was no significant difference in the difference values of the DR1 scores between the ESOL and non-ESOL groups. The growth in the area of comprehension achievement was also consistent across both groups.

The final null hypothesis stated that there was no difference in vocabulary achievement between students who were provided with ESOL support services and those who were not. Again, I failed to reject this null hypothesis, as there were no significant differences between the difference values of the DR1 scores between the ESOL and the non-ESOL groups. Kindergarten is an age at which a lot of vocabulary is developed for all students, which could be why no significant difference was attained.

All the assumptions of the analysis of covariance, linearity, normality, and homogeneity of variance were violated; therefore, the pretest scores were subtracted from the posttest scores to account for the pretest score differences, and a Kruskall-Wallis test was conducted. The results of the Kruskall-Wallis test were not significant, as the median

values for the no-ESOL-support group and the yes-ESOL-support group were both 4. One reason for the lack of significance could be the low amount of power due to low sample size (n = 106). *Power* is the likelihood of detecting a significant effect if one actually exists in the real world. The standard is .8 or 80% likelihood of detecting a significant effect. Post hoc power analysis indicated that the power was .72, as calculated by G*Power (Erdfelder, Faul, & Buchner, 1996). Therefore, there was insufficient data and difference, so the data failed to prove my research questions to be correct. In order for this study to prove one way or the other, it would take a much larger sample size and might also be better done over a longer period of time. If this were conducted as a longitudinal study, the researcher could see the long-term effects and better understand the significance of the ESOL support services.

Section 5: Discussion, Conclusions, and Recommendations

Introduction

This study was undertaken to determine whether students who received ESOL services would achieve a higher reading level at the end of kindergarten than students who did not receive ESOL services. In the county under study, fewer ESOL services were being offered to kindergarten students. Determining if ESOL services did increase reading achievement might lead decision makers to increase this service.

The first research question concerned the impact of receiving ESOL support services in kindergarten for students at the county-expected reading level at the end of kindergarten. The null hypothesis was that there was no impact of receiving ESOL support services in kindergarten at the county-expected reading level at the end of kindergarten. The results of this study failed to reject the null hypothesis.

The second research question concerned the difference in comprehension achievement between students who were provided with ESOL support services and those who were not. The null hypothesis was that there is no difference in comprehension achievement between students who were provided ESOL support services and those who were not. The results of this study failed to reject the null hypothesis.

The final research question concerned the differences in vocabulary achievement scores between students who were provided with ESOL support services and those who were not. The null hypothesis was that there was no difference in vocabulary achievement scores between students who were provided with ESOL support services

and those who were not. Based on the results of Kruskall-Wallis test, the study failed to reject the null hypotheses.

Interpretation of Findings

The first research question concerned the impact of receiving ESOL support services in kindergarten on reading level at the end of kindergarten. The null hypothesis was that there is no significant difference in reading level at the end of kindergarten between those receiving and not receiving ESOL support. The results showed no significant difference between those receiving and not receiving ESOL support. My research indicates that ESOL support services may not improve the reading skills of kindergarten students over students who did not have ESOL services. However, receiving these services may have helped the ESOL students to achieve on the same level as students who do not receive ESOL services by helping them achieve greater language acquisition during the time of the study.

The second research question concerned the difference in comprehension achievement between students who were provided with ESOL support services and those who were not. The null hypothesis was that there is no difference in comprehension achievement between students who were provided with ESOL support services and those who were not. The results showed no significant difference between those receiving and not receiving ESOL support. My research suggests that ESOL support services may not improve the comprehension achievement of kindergarten students over students who did not have ESOL services. However, receiving these services may have helped the ESOL

students to achieve on the same level as the students who do not receive ESOL services by helping them achieve greater language acquisition during the time of the study.

The third research question concerned the difference in vocabulary achievement between students who were provided with ESOL support services and those who were not. The null hypothesis was that there is no difference in vocabulary achievement between students who were provided with ESOL support services and those who were not. The results showed no significant difference in vocabulary achievement between those receiving and not receiving ESOL services. My research suggests that ESOL support services may not improve the vocabulary achievement of kindergarten students over students who did not have ESOL services. However, receiving these services may have helped the ESOL students to achieve on the same level as the students who do not receive ESOL services.

There are several factors that could have influenced the outcome of the results of the study. One of the assumptions of the study was that parents fill out the ESOL placement indicators accurately. If this assumption was in error, for whatever reason, the ESOL sample in the study may not be truly representative of the ESOL population and instead may be closer to the general kindergarten population. Therefore, we would not see significant differences between the groups. Another assumption was that the students' native language did not have an impact on the ease of learning English. This could have been in error if a student spoke a language very different from English such as Chinese or Arabic. One of the limitations of the study was possible bias during data collection by the teacher. If teachers do not demonstrate that progress in reading has been achieved among

all students, they could be viewed negatively in their teacher evaluations. Therefore, teachers may unconsciously apply a positive bias in the reading examination. If this occurred, then this could also explain why there were no differences between the ESOL and non-ESOL-support groups. The scope of the study was limited to 55 ESOL students and 51 non-ESOL students. The sample size may not have been large enough to execute the original analysis successfully by violating the parametric assumptions. Therefore, a less powerful nonparametric test, the Kruskall Wallis test, was conducted. The combination of the low sample size and the less powerful nonparametric test could be another explanation as to why no significant differences were found. There was no significant variance in the non-ESOL group pretest scores, which could be the result of (a) a small sample size, (b) the testing not being done at the beginning of the year, or (c) the students coming in as nonreaders. These factors limited the type of analysis that could be performed. The Kruskall-Wallis test was conducted and did not show a significant difference between those who obtained ESOL support services in kindergarten and those who did not. Therefore, a larger population size would need to be attained and all students would need a reading ability level from the beginning of the year in order to determine whether the ESOL services made a significant impact on reading level and vocabulary growth.

Theoretical Framework as Related to Findings

According to Huerta and Jackson (2010), there has been a dramatic increase in ESOL students in the United States. This increase means there are more non-English speakers in classrooms who need ESOL support services to keep pace with English

speakers. Based on these results of this study, students not receiving ESOL support services perform no better on the standardized reading test (DRA2) than students who receive ESOL support. Therefore, this insight supports the argument that ESOL services have a positive impact on kindergarten reading skills for non-English speakers, as one would expect that students who do not speak English as their primary language would not do as well on the DRA2 as primary English speakers.

Vygotsky's social learning theory indicates that children who are exposed to more than one language from a young age are more capable of learning and comprehending a language other than their native language. This may explain why students who receive ESOL support services perform just as well as students who do not receive ESOL services in kindergarten. In research performed on Vygotsky's theory of scaffolding, Lesaux and Siegel (2003) concluded that early identification and intervention can be beneficial for ESOL speakers and can help them develop early reading skills. The results appear to support this theory in that children who receive early ESOL support services (i.e., kindergarten) perform equally well in relation to kindergarten students who speak English as their primary language.

Chomsky's (2005) theory of Transformational Linguistics indicates that the more experience people have in using a new language or skill, the more proficient they become. Therefore, by practicing a new language on a daily basis, a student is likely to become proficient more quickly. ESOL support services break ELLs into smaller groups and thereby allow more practice for each individual. Therefore, the results of this study indicate that ESOL support services do benefit English language learners because they

scored as well on the DRA2 as native English speakers who did not receive ESOL support services.

Implications for Social Change

This study was relevant to social change because it may have helped to address the need for ESOL support services earlier in an ELL's academic career. If the ESOL students are more capable of using the English language, they will be better able to fulfill their needs inside and outside of the school setting. If the study is successful in showing that early language instruction facilitated by ESOL support services is beneficial, it may change the way in which ESOL support services are allocated and provided to the students within the school district. However, the results are inconclusive with the available data to determine whether starting ESOL services in kindergarten proves to be more beneficial. Many theorists believe that the earlier a student starts to learn a new language or a second language, the more successful the student can be and the faster the student can learn.

Recommendations for Action

Based on these results, the students who are receiving ESOL services are performing as well as the ones who are not ESOL. From this, it is conjectured that the services enabled the students to perform at the same level as their classmates. In order to ensure that these students are able to continue to perform on the same level as their classmates, it is recommended to continue funding for ESOL certification for teachers.

It is also recommended that kindergarten ESOL students continue to receive the most support and direct services to their benefit and to ensure their success in school.

These ESOL students are often entering school for the first time while speaking a different language at home. Therefore, this could be their first introduction to the English language. ESOL services providing 45 minutes a day of small group instruction in the English language could help these students be able to read, write, and perform in other academic areas on the same level as their classmates who speak English as their first language.

Another recommendation would be for the county and state to continue providing support and expansion of these services. According to the Gwinnett County IE2 Partnership Contract (Gwinnett County Public Schools, 2008), the population of ELLs has significantly increased, more than tripling since 2001. According to the same report, only 14.7% of ESOL students are receiving ESOL services. This suggests that there is a need for more trained ESOL teachers in the county to ensure that all students receive the support services they need. Kennesaw State University (2008) stated that Georgia had the fifth highest absolute growth in the foreign-born population in the United States. This suggests that ESOL services are an issue that the state needs to recognize and support.

Recommendations for Further Study

In order to determine if ESOL services could, in fact, help ESOL students to excel in reading, comprehension, and vocabulary skills, the following items are recommended for further study. These recommendations are made while keeping in mind that the study showed that the ESOL students performed on the same level as the non-ESOL students. They are also made based on the assumption from the results of this study that further growth would be shown in a longer and larger study.

The first recommendation is to assure that the parameters, the assumptions, and the limitations are met for the analysis. The parameters are that the study be performed in a school with a large enough ESOL population to get a large enough number of participants. The study could perhaps be done with more than one school participating in order to ensure a larger sample size. It is assumed that parents will fill out the ESOL placement indicators accurately at the beginning of the year so that students requiring ESOL services are properly identified. If parents do not indicate that their children speak a different language at home and identify that language, their children will not be tested for ESOL. This could mean that some students do not receive necessary services or that they are included in a non-ESOL group for study purposes, which could skew the data. When ESOL students have been identified, it is then assumed that the students will receive consistent services throughout their academic career. Often, however, ESOL teachers are pulled to perform other jobs, and ACCESS testing is a long process during which the students do not receive consistent services. One limitation is the possible bias of the researcher during data collection. According to Rodriguez, Manner, and Darcy (2010), teacher attitudes affect the expected outcomes of provided services to second language learners. In order to prevent this, the data were collected by the teachers involved as part of normal data collection throughout the year. There was a signed data use agreement (Appendix A) to enable the use of the data collected. The data collected were of an archival nature.

The second recommendation is to ensure that the sample size is adequate, in that a larger sample size might provide more conclusive results showing that ESOL support

services do produce higher scores. The smaller sample size used in the study prevented the ANCOVA analysis from being performed. It seems that a sample size of 120 students would provide more conclusive results and allow for further analysis.

It is also recommended that this study be repeated as a longitudinal study that would follow the students through a few years to attain more significant results and determine whether there are long-term effects of the type of ESOL support services received. By following these students through their academic careers, perhaps from K-5, the researcher would be able to see the results of the ESOL services as the difficulty level of the academic knowledge increases. Based on this study, the ESOL students were performing on the same level as the non-ESOL students. It would be valuable to ascertain whether this trend continues as they progress in their academic careers to see what actual impact the ESOL services are having on their reading ability, comprehension and vocabulary acquisition.

It is also recommended that an experimental study be conducted where ESOL-eligible students are randomly assigned to an ESOL services groups and a control group in order to measure the size of the impact of ESOL services. If this were done, the students could be compared in the same year of study with the same influences and possibly provide a more significant result. This possible study would compare students who are all ESOL but not all receiving services. In order to do this, all ESOL students would be randomly assigned to a control group and a services group. This could give whomever was to conduct the study further data showing differences or similarities within the ESOL population itself.

Summary

The research performed has failed to prove or disprove the hypotheses. In the data that were retrieved, the students who were given ESOL services and those who were not maintained the same range of scores. It could be conjectured that the students who received the ESOL services were able to perform on the same level as the students who did not receive ESOL services because of the services they received. It would take further study to prove conclusively whether the ESOL services were the catalyst for the scores being the same or whether other influences had an impact.

Conclusion

The problem addressed in this study was that many ESOL kindergarten students in the county under study are not receiving ESOL support services. As stated above, the ELL population is growing not only in the county under study, but also in the state as a whole. This supports the idea that more resources are needed to support this increasing ESOL population.

This possible need for increased services led to many questions for me. This study was conducted to determine what the impact of receiving ESOL support services was on reading level, comprehension achievement and vocabulary achievement at the end of kindergarten. Therefore, the research questions reflected these three aspects of reading. Would the students who received the ESOL services perform better in these three areas?

The original analysis chosen for this study was an ANCOVA analysis. However, when the archived data were collected, the sample size was not large enough to get an accurate analysis using ANCOVA. Therefore, a Kruskall-Wallis test, the nonparametric

equivalent of the one-way ANOVA, was conducted, where the assumptions of normality and homogeneity of variance were not required (Field, 2012; Tabachnick and Fidell, 2012). The Kruskall-Wallis test converts scores to ranks, and then the mean ranks for each group are compared.

The results of the Kruskall-Wallis test revealed that there was no statistically significant difference in posttest median scores between the yes-ESOL-support group ($Md = 4$) and the no-ESOL-support group ($Md = 4$), χ^2 (2, 106) = .834, $p = .361$. Based on these results, I failed to reject all three null hypotheses. The results from the Kruskall-Wallis did not prove or disprove whether the ESOL services provided showed a significant difference in academic achievement in the areas of reading level, comprehension and vocabulary achievement.

Further study is recommended to prove or disprove the impact of ESOL services. It is recommended that a larger sample size be used. It is also suggested that a longitudinal study be performed to ascertain the differences in achievement level throughout students' academic careers. Further, it is recommended that these services continue to be provided based on the growing ESOL population in the county as well as the state as a whole. These further studies should also account for the native language the student has been identified as speaking. It may provide more data as to why they did or did not improve their reading and vocabulary skills. Some languages are very different from English; such as Chinese or Arabic, and may make the transition harder than Spanish or Portuguese to English. These future studies should ensure they have an equal language distribution among the two groups.

It is my hope as the researcher that this study will promote social change by showing the need for further study and more services for the ESOL population. By giving these students more support when they are young, it may be possible to help them to be able to participate more in school, in activities and in the community as a whole. These students could help their parents learn more English to ensure that they have opportunities for better jobs and so that they can participate more in the community. This study could promote social change by giving these students assistance, which would help them not only in their academic career, but also in their lives in general, and could impact their community as a whole.

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Appendix A: Time Required for ESOL Student Services

This data is collected from the district policy in the county under study.

This minimum time varies by grade level as do minimum segment lengths:

- Grades K through 3 = require 45 minute daily segments or a minimum of 225 minutes weekly.
- Grades 4 through 8= require 50 minute daily segments or a minimum of 250 minutes weekly.
- Grades 9 through 12 = require 55 minute daily segments or a minimum of 275 minutes weekly.
- For FTE funding purposes students in grades K-3 may be served one segment per day. Students in grades 4 through 8 may be served up to 2 segments per day. Students in grades 9 through 12 may be served up to 5 segments daily.

Appendix B: Approved Methods of ESOL Instruction

ESOL Approved Delivery Models of Instruction Per Georgia State Education rule 160-4-5-.02 Language Assistance: Program for English Learners, there are six approved delivery models for providing language assistance services to ELs:

1. Pull-out model – students are taken out of a general education class for the purpose of receiving small group language instruction from the ESOL teacher.

2. Push-in model (within reading, language arts, mathematics, science or social studies) – students remain in their core academic class where they receive content instruction from their content area teacher along with targeted language instruction from the ESOL teacher.

3. A cluster center to which students are transported for instruction – students from two or more schools are grouped in a center designed to provide intensive language assistance.

4. A resource center / laboratory – students receive language assistance in a group setting supplemented by multi-media materials.

5. A scheduled class period – students at the middle and high school levels receive language assistance and /or content instruction in a class composed only of ELs.

6. An innovative delivery model approved in advance by the Georgia Department of Education through a process described in the ESOL/Title III Resource Guide.

Note: The Push-in model is clearly defined by the Language Assistance rule (160-4-5-.02) and should not be interpreted to be defined in the same manner as the co-teaching model of instruction implemented by Special Education. In the ESOL Push-in

model, the ESOL teacher and the content teacher are co-equals in the classroom, but each has a distinct role. The ESOL teacher is responsible for language support, while the content teacher is responsible for delivery of academic content.

Appendix C: DRA2 Script

This is the teacher script for the level A book “Can You Sing” found in the DRA2 kit. It is set up for the teacher to read and record observations and the students answers.

Teacher Observation Guide Can You Sing? Level A, Page 1

Name/Date Teacher/Grade

Scores: Reading Engagement _/9 Independent Range: 8-9

1. READING ENGAGEMENT)

Teacher: Who reads with you or to you at home?

Score: Oral Reading _/9 Printed Language Concepts _/6

T: Tell me about one of your favorite books.

2. ORAL READING)

INTRODUCTION AND PREVIEW

This book is called Can You Sing? Let's read it together and find out who can sing. I'll read some of the story to you. As I read, I will point to each word with my finger. Watch and listen. Point to each word as you read pages 2-5.

Turn to page 6. Say: Now, I'll point to and read what the bird says. You point to and read what the other animals say.

Continue to read what the bird says, and have the student point to and read what the other animals say. Note the student's ability to hold/control the book and turn the pages.

RECORD OF ORAL READING

Record the student's oral reading behaviors on the Record of Oral Reading below.

Researcher's Note:

What follows is each page is listed with the words the page contains. The teacher would put a check mark over the word if the students read it correctly or would write what they did say over the word if they did not read it correctly. Then the scores would be assigned based on the factors below.

Count the number of miscues that are not self-corrected. Circle the percent of accuracy based on the number of miscues.

Word Count: 10

- If the student's number of miscues is 1 or less, continue the assessment with a Level l text.
- If the student's number of miscues is 2 or more, STOP!

1. Circle the descriptor in each row of the DRA2 Continuum that best describes the student's reading behaviors and responses.
   - Add the circled numbers to obtain a total score for each section.
   - Record the total scores at the top of page 1.
2. Use the student's profile of reading behaviors to identify instructional needs.
3. Administer DRA Word Analysis, beginning with Task I, at another time.

Appendix D: Description of the Book *Can You Sing?*

The student will be given a paperback book. In this case the book is a level A book called “Can You Sing” from the DRA2 kit. In this book a bird is asking other animals if they can sing. The teacher will read the beginning and the student answers the question on each page with yes or no. It is then recorded on the recording sheet above. The book is very colorful with pictures of the animals the bird is asking on each page. The students are responsible for reading 10 words in this book in order to be tested on a more difficult text.