Effects of embedded and direct language strategies on prekindergarten students' cognitive and social emotional development

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EFFECTS OF EMBEDDED AND DIRECT LANGUAGE STRATEGIES ON PREKINDERGARTEN STUDENTS’ COGNITIVE AND SOCIAL EMOTIONAL DEVELOPMENT

By

Matthew L. Dominy

A Dissertation

Presented to the Faculty of
The Graduate College of the University of Nebraska
In Partial Fulfillment of Requirements
For the Degree of Doctor of Education

Major: Educational Administration
Under the Supervision of Dr. Peter J. Smith
Omaha, Nebraska
May 2012

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ABSTRACT

EFFECTS OF EMBEDDED AND DIRECT LANGUAGE STRATEGIES ON PREKINDERGARTEN STUDENTS’ COGNITIVE AND SOCIAL EMOTIONAL DEVELOPMENT

Matthew L. Dominy Ed. D.

University of Nebraska Omaha, 2012

Advisor: Peter J. Smith

The purpose of this study is to measure the effect of a standard of care embedded language strategies program utilized in combination with direct language strategy instruction on the measured expressive language, cognitive development, social emotional development, and language development of prekindergarten students attending three neighborhood Title I schools.

The independent variables in this study were prekindergarten students participating in the school district standard of care embedded language strategies program utilized in combination with direct language strategy instruction and prekindergarten students participating in the school district standard of care embedded language strategies program alone. The four overarching dependent variables evaluated for this study are 1) Language Expression achievement 2) Language Development, 3) Cognitive Development, and 4) Social/Emotional Development.

This study may offer insight as to whether or not Title I prekindergarten students acquire greater language and vocabulary skills through direct instruction strategies with embedded language strategies or through embedded language strategies alone. The information could be used by school districts and policy makers to make decisions on how best to teach Title I prekindergarten students language and vocabulary.
ACKNOWLEDGEMENTS

First, I would like to thank Dr. Peter Smith, my advisor and committee chair, who was the light during the difficult moments of the dissertation. Throughout this process, he has encouraged me to become a strong researcher and writer as well as provided valuable feedback and insights. Dr. Smith has strong command of statistics and data analysis, and for that I am very grateful. I also want to thank my other dissertation committee members: Dr. Jeanne Surface, Dr. Karen Hayes, and Dr. Julie Delkamiller, as well as University of Nebraska-Omaha faculty members who have provided support and teaching along the way: Dr. John Hill, Dr. Dick Christie and Dr. Kay Keiser.

I would like to thank the dedicated Rockwell and Cody Elementary School staffs who were integral in the implementation of my study and patient with me as their leader while I pursued this endeavor. I would also like to thank my colleagues for all of their encouragement and kind words along the way.

Most of all, I want to thank my family. Thanks to my wife Jessica who put her professional goals and aspirations on hold for me while I finished. I am eternally grateful for her patience, love and support during this process. Thank you to my daughters, Madison and Kennedy, who endured my absences for class and long-stretches of time away researching and writing my dissertation. I did this for them, so they would know no bounds. May they always know my love and pride for them. Thank you to my parents and my parents-in-law who have always encouraged and supported my education and my brother and sister-in-law, Neil and Renee, who continually inspired me to finish. Thank you to my grandparents and extended family, many of them educators, who helped shaped my beliefs and the person that I am.
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CHAPTER ONE

Introduction

Early language and literacy development can be complicated for typically developing children in middle class and wealthy families. Poverty and its implications create more unique situations regarding a child’s literacy development for teachers and parents to overcome. Recent data indicates that 13 million American children are living in poverty (Dalhouse & Risko, 2008). This is a predicament that more and more American families are going to face due to the struggling economy.

Poverty can have devastating effects on early literacy in areas such as the structure of language, letter recognition and print awareness (Hawken, Johnston & McDonnell, 2005). These early literacy skills are crucial to developing higher levels of literacy and are skills that are not well developed in language-poor environments. Fewer than 5% of children who receive proper exposure to the foundational skills during early childhood will experience reading difficulties (Landry, Swank, Smith, Assel, & Gunnewig, 2006). Implications of this research should have a huge impact on the programs and instruction offered. However, the current number of students who come to school with a gap in early literacy skills is in the 20-30% range (Landry, et al., 2006).

The building block to early literacy is oral language. Children of poverty often lack the experiences with parents and other caregivers for quality interactions to develop oral language and literacy (Hawken, Johnston & McDonnell, 2005). Children who come from families with a more rich language environment have better school experiences (Christ & Wang, 2010).
Language-poor families have smaller vocabularies and often language is more controlling and punitive (Strickland, 2004.) Oral language is developed at the earliest ages through speech modeled by parents and caregivers. Examples might include shopping at the grocery store and talking to a child about the items you are selecting and why. Language is also developed through experiences with vocabulary and background schema (Beck & McKeown, 2007). Children from families of poverty may have little exposure to the outside world, and their language will often indicate this lack of background knowledge (Christ & Wang, 2010).

Historically, prekindergarten students have been taught language through an embedded model of language instruction. Embedded language instruction occurs naturally through student conversations with peers and teachers, modeled conversations by the teacher, modeled conversations from other peers in the classroom, and language used in read alouds as well as instruction. The idea behind this instruction is that the more children are engaged in oral and reading vocabulary experiences, the greater their vocabulary and comprehension (Nelson & Stage, 2007). For students from middle class and wealthy families, this embedded instruction works well as they have a wealth of language to bring to the table and model and interact with their peers. Students from poverty do not have the language level of their peers from more language rich environments and often do not have the same interactions as other students (Hart & Risley, 1995).

Direct language strategy instruction purposefully and systematically exposes children to new words, directly teaches word meanings, directly teaches word learning strategies and provides opportunities to practice newly-learned words (Christ & Wong,
2010). The power in these four practices is not the practice in isolation, but when the practices are used together. For the purpose of this study, Isabelle Beck’s (2007) following vocabulary instruction strategies were used: Prior to reading the selection, the teacher will have selected the Tier II words from the story. Tier II words are domain general and more sophisticated labels for concepts already familiar to young children. Utilizing these selected words plays a critical role in the development of the student’s verbal abilities and understanding the relationship between the spoken (phoneme) and written (grapheme) word. For example, the teacher reads the entire story before beginning vocabulary instruction. Prior to reading the story, the teacher introduces briefly any unknown words to the students. The teacher then follows seven direct instructional steps after reading the book to the students in order to support their internalization of language based on vocabulary presented in the story. The seven steps are: (1) First the word is contextualized for its role in the story. (2) Next the meaning of the word is explained. (3) The children are asked to repeat the word so that they can create phonological representation of it. (4) Examples in contexts other than the one used in the story are provided. (5) Students make judgments about examples. (6) Students construct their own examples. (7) The word’s phonological and meaning representations are reinforced. In addition to these seven steps, the teacher uses a visual representation of the word whenever possible so that students may build the visual schema to fully comprehend the word and the story. Teachers reinforce this initial instruction by providing two other opportunities for review and application of the learned words. This reinforcement may take place by integrating these words into the choice time for prekindergarten students and during the lunchtime discussion. Teachers also reinforce
instruction on following dates by keeping a word wall of the words from many of the stories. The teacher integrates these words as much as possible throughout the instructional day and highlights when the word is used in other school settings.

The literature suggests that explicit vocabulary instruction methods enhance vocabulary knowledge and reading comprehension, and the students who show the most growth are students who have limited vocabulary initially (Nelson & Stage, 2007). Providing teachers with direct language instructional strategies to use with their students may be seen as developmentally inappropriate by some prekindergarten teachers and researchers (Quick, 1998). However, because of limited research regarding early childhood education and direct language instruction strategies, the purpose of this study is to determine if prekindergarten students of poverty benefit from having direct language instructional strategies as well as the embedded model of language development.

**Purpose of study**

The purpose of this study is to measure the effect of a standard of care embedded language strategies program utilized in combination with direct language strategy instruction on the measured expressive language, cognitive development, social emotional development, and language development of prekindergarten students attending three neighborhood Title I schools.

The study will focus on prekindergarten students involved in a comprehensive all-day Title I preschool in three suburban elementary schools. Students whose parents registered these students for preschool education and who participated in one year of prekindergarten learning and language activities are the study participants.
Research Questions

The following student achievement research question will be asked about the measured expressive language of prekindergarten students who participate in an embedded language program used in combination with direct language strategy instruction activities.

**Overarching Pretest-Posttest Achievement Research Question #1.** Do Title I students who participate in an embedded language program used in combination with direct language strategy instruction activities lose, maintain, or improve their beginning prekindergarten pretest scores compared to end of prekindergarten posttest language expression scores for (a) alliteration, (b) rhyming, and (c) picture naming fluency scores on the Get it, Got it, Go Assessment?

The following student achievement research question will be asked about the measured expressive language of prekindergarten students who participate in an embedded language program alone.

**Overarching Pretest-Posttest Achievement Research Question #2.** Do Title I students who participate in an embedded language program alone lose, maintain, or improve their beginning prekindergarten pretest scores compared to end of prekindergarten posttest language expression scores for (a) alliteration, (b) rhyming, and (c) picture naming fluency scores on the Get it, Got it, Go Assessment?

The following student achievement research question will be asked about the measured expressive language of prekindergarten students who participate in an embedded language program alone compared to students who participate in an embedded
Overarching Pretest-Posttest Achievement Research Question #3. Do Title I students who participate in an embedded language program used in combination with direct language strategy instruction activities and those students who participate in an embedded language program alone have different or congruent end of prekindergarten posttest language expression scores for (a) alliteration, (b) rhyming, and (c) picture naming fluency on the Get it, Got it, Go Assessment?

The following student achievement research question will be asked about the measured expressive language of prekindergarten students who participate in an embedded language program used in combination with direct language strategy instruction activities.

Overarching Pretest-Posttest Achievement Research Question #4. Do Title I students who participate in an embedded language program used in combination with direct language strategy instruction activities lose, maintain, or improve their beginning prekindergarten pretest scores compared to end of prekindergarten posttest scores for (a) social/emotional development, (b) cognitive development, and (c) language development scores on the Creative Curriculum Continuum?

The following student achievement research question will be asked about the measured expressive language of prekindergarten students who participate in an embedded language program alone.

Overarching Pretest-Posttest Achievement Research Question #5. Do Title I students who participate in an embedded language program alone lose, maintain, or
improve their beginning prekindergarten pretest scores compared to end of prekindergarten posttest scores for (a) social/emotional Development, (b) cognitive development, and (c) language development scores on the Creative Curriculum Continuum?

The following student achievement research question will be asked about the measured expressive language of prekindergarten students who participate in an embedded language program alone compared to students who participated in an embedded language program used in combination with direct language strategy instruction activities

**Overarching Posttest-Posttest Achievement Research Question #6.** Do Title I students who participate in an embedded language program used in combination with direct language strategy instruction activities and those students who participate in an embedded language program alone have different or congruent end of prekindergarten posttest language expression scores for (a) social/emotional development, (b) cognitive development, and (c) language development scores on the Creative Curriculum Continuum?

**Definition of Terms**

**Alliteration Assessment**-Stimulus cards include one image at the top of each card (e.g., rain) and a set of three images in a row at the bottom of each card (e.g., house, rake, pig), one of which starts with the same sound as the target picture. After providing a set of sample items, the examiner asks the child to look at each card and point to one of the three pictures at the bottom of the card with the same initial sound as the fourth, target picture. The task continues for a total of two minutes. The score generated from this
format is the number of pictures the child correctly identifies within two minutes (University of Minnesota, 2011).

**Background Schema**- a mental structure used to organize and simplify our knowledge of the world around us (Beck and McKeown, 2007).

**Cognitive Development**- Measured by Creative Curriculum  
(a) Applies knowledge or experience to a new context. 
(b) Classifies objects. (Dodge, Colker & Heroman, 2009).

**Creative Curriculum**- a research-based system that offers early childhood educators a comprehensive collection of resources to help them build high-quality programs (Dodge, Colker & Heroman, 2009).

**Developmentally Appropriate**- providing an environment and offering content, materials, activities, and methodologies that are coordinated with a child's level of development and for which the individual child is ready. Three dimensions of appropriateness must be considered: age appropriateness, individual appropriateness, and appropriateness for the cultural and social context of the child (Quick, 1998).

**Direct Language Strategy Instruction (DLSI)**- purposefully and systematically exposing children to new words, directly teaching word meanings, directly teaching word learning strategies and providing opportunities to practice newly learned words.

**Dramatic Play**- Dramatic play includes role-playing, puppetry, and fantasy play (Dodge, Colker & Heroman, 2009).

**Early Literacy**- everything children know about reading and writing before they can actually read and write (Dodge, Colker & Heroman, 2009).
**Embedded Language Strategy Instruction (ELSI)** - Embedded language development occurs throughout the day in a variety of settings. Embedded language is the language that the child hears on a day to day basis and begins to take on this language as his/her own (New, 2002).

**Expressive Language** - The ability to express wants and needs (Dodge, Colker & Heroman, 2009).

**Fluency** - To read, write, or speak with speed and accuracy.

**Formal Register** - Language without slang or abbreviations (Payne, 2007).

**Get it, Got it, Go Assessment** - A comprehensive standards-based assessment system that describes individual children’s growth and development over time (University of Minnesota, 2011).

**Grapheme** - All of the letters and letter combinations that make up a sound (Beck and McKeown, 2007).

**Head Start** - Head start is a federally funded early education program for children from low-income households and children with developmental delays or disabilities (Currie and Thomas, 1995).

**Language Development** - Measured by Creative Curriculum. (a) Expresses self using words and expanded sentences. (b) Understands and follows oral directions. (c) Answers questions. (d) Asks questions. (e) Actively participates in conversations. (f) Comprehends and interprets meaning from books and other texts (Dodge, Colker & Heroman, 2009).
**Letter Knowledge/Recognition**- Letter recognition is the ability to quickly and accurately name alphabet letters in order, out of order, whether capital or lower-case form (University of Minnesota, 2011).

**Metacognition**- Metacognition refers to higher order thinking that involves active control over the thinking processes involved in learning (Christ and Wang, 2010).

**Oral Language**- Oral language involves both speaking and listening, or expressive and receptive language. It is a process whose development requires social interaction (Hawken, Johnston & McDonnel, 2005).

**Phoneme**- A sound or a group of different sounds (Beck and McKeown, 2007).

**Phonological representation**- Exact representations of the sounds of the language (Beck and McKeown, 2007).

**Prekindergarten Program**- An educational program designed for children 4-5 years of age.

**Print Awareness**- Print Awareness includes knowing that print has meaning, knowing how to handle a book, and noticing print all around (Dodge, Colker & Heroman, 2009).

**Phonological Awareness**- Phonological awareness refers to an individual's awareness of the phonological structure, or sound structure, of spoken words (US Dept of Ed., 2004).

**Picture Naming Fluency**- this indicator presents a child with images of objects commonly found in preschoolers' natural environments (i.e., home, classroom, and community), one at a time, asking a child to name the pictures as fast as possible. Categories of objects used in this format include animals, food, people, household
objects, games and sports materials, vehicles, tools, and clothing. Each photograph and line drawing is printed on an 8" x 5" index card. After providing a set of sample items, the examiner asks the child to look at each card and name it as quickly as possible (University of Minnesota, 2011).

**Print Awareness**- Print awareness is the understanding that the words carry meaning not just the pictures carry meaning (Dodge, Colker& Heroman, 2009).

**Reading Comprehension**- The process of constructing meaning from text.

**Rhyming**- A Get it, Got it, Go assessment in which stimulus cards include a target photo or line drawing at the top of each card (e.g., bees) and a set of three photos/drawings in a row at the bottom of each card (e.g., pants, gate, cheese), one of which rhymes with the target picture. After providing a set of sample items, the examiner asks the child to look at each card and point to one of the three pictures at the bottom of the card that sounds the same as (or rhymes with) the fourth, target picture (University of Minnesota, 2011).

**Social/Emotional Development**- Measured through creative curriculum (a) Follows classroom rules. (b) Uses thinking skills to resolve conflicts (Dodge, Colker& Heroman, 2009).

**Tier II words**- Words likely to appear frequently in a wide variety of texts and in the written and oral language of mature language users (Beck & McKeown, 2007).

**Title I Preschool**- A preschool program of educational services for eligible children below the age at which the local education agency provides elementary education. The purpose of a Title I preschool program is focused on raising the academic

**Word Consciousness** - the idea that students do not learn words passively, they learn new words when those words of interest to them and they have a need to know the word. Children must be aware that they do not know the vocabulary word and that they have a desire to learn the new word (Christ and Wang, 2010)

**Word Wall** - A word wall is an interactive collection of words or parts of words used to teach vocabulary, spelling, letter-sound correspondence, and more (Beck and McKeown, 2007).

**Written Expression** - Being able to communicate thoughts and ideas in writing (US Dept of Ed., 2004)

**Assumptions**

This study has several strong features. All students in this study have been continuously enrolled from the beginning of Prekindergarten through the end of Prekindergarten in the three research schools and all participated in the Pre-Kindergarten Embedded Language Strategies Instruction. All of the research schools have highly qualified staff members; have implemented the ELSI Program based on best practices. The two schools responsible for the ELSI program as well as the DLSI program have been trained and monitored by the researcher in the DLSI program. Each school is equally supported by the district at large through financial resources, school leadership, faculty, and curriculum.
Delimitations of the Study

The study, results, and discussion will be delimited to Title I prekindergarten students in a suburban school district who were in attendance at the three research schools from the beginning of prekindergarten to the end of prekindergarten for the 2010-2011 school year and participated in the Title I prekindergarten program. The findings of the study will be delimited to the Title I prekindergarten students who attended the three research schools.

Limitations of the Study

This pretest-posttest two-group comparative efficacy study is limited to three research schools in a suburban school district that are located throughout the research school district. The participants are Title I preschool students who will participate in an embedded language program used in combination with direct language strategy instruction who meet the requirements for promotion to kindergarten ($n = 29$) students who participate in an embedded language strategies program alone who meet the requirements for promotion to kindergarten ($n = 32$) will be selected based on their Title I status and participation in the two language intervention programs.

The teachers who instruct the Title I prekindergarten students have varying amounts of training in best practices to use with Title I prekindergarten students. The teachers also have varying amounts of formal training on how to work with Title I prekindergarten students. Using the test results from three schools may skew the statistical results and reduce the utility and generalizability of the findings.
Significance of the Study

This study contributes to research, practice, and policy. The study is of significant interest to teachers as they identify best practices for teaching Prekindergarten Title I Students language and vocabulary. School district officials will also have information as they consider the effective practices and whether Direct Language Strategy Instruction can more effectively meet the needs of the students more effectively than using embedded language strategy instruction alone.

Contribution to Research

A review of professional literature suggests that more research is needed on the subject of Direct Language Strategy Instruction with prekindergarten students in a suburban public school. There is also a need for more research on embedded language strategy instruction. Furthermore, the results of this study may inform district central office staff of the impact of student achievement of Title I prekindergarten in such schools. In addition, the findings may indicate specific factors for improvement that may determine types of programs the schools need to meet the needs of Title I Prekindergarten students.

Contribution to Practice

A suburban school district may decide whether to teach prekindergarten language/vocabulary instruction the way it currently exists or alter the program to include Direct Language Strategy Instruction. The amount of staff development about best practices and strategies for prekindergarten students may increase or be altered due to the outcome of the study.
**Contribution to Policy**

The results of this study may offer insight into how school districts develop instructional models/programs for Title I prekindergarten. Given the study outcomes, the school district may choose to reconsider the instructional program used to teach vocabulary/language to Title I prekindergarten students.

**Organization of the Study**

The literature review relevant to this research study is presented in Chapter 2. This chapter reviews the professional literature related to prekindergarten programs, language acquisition, and vocabulary/language instruction. Chapter 3 describes the research design, methodology, independent variables, dependent variables, and procedures that will be used to gather and analyze the data of the study.
CHAPTER TWO

Review of the Literature

Language and vocabulary play an integral part in a child’s development of literacy skills. Prekindergarten education programs, early childhood language development, and language development of students from poverty are all factors that affect language development. These topics will be further explored throughout this review of the literature.

Pre-Kindergarten Programs

Prekindergarten programs are becoming much more prevalent in America. In 2001, 66% of all four year old children were enrolled in some type of prekindergarten program (National Center for Educational Statistics, 2003). This is in contrast to the 23% who were enrolled in 1970 (US Bureau of the Census, 1970.) There are a variety of prekindergarten programs available in the United States. The great majority of general education income-eligible prekindergarten aged children attend one of the following two programs described below.

A high quality prekindergarten experience for a child can have many positive effects on his or her future academic and social success. A child who participates in a high quality preschool experience is likely to perform better in math and reading, less likely to require special education, less likely to have discipline problems, and more likely to have good school attendance (Reynolds, 2000). Preschool education can have lasting effects not only in the short term but also long into adulthood (Reynolds, 1994). Studies have shown higher rates of high school completion, lower rates of violence, reduced access to Medicaid, higher levels of academic achievement, and higher parent involvement for those students who attend preschool (Reynolds, 2000).
The High/Scope Perry Preschool Program is often cited when it comes to defending the lasting effects of early intervention (Campbell, F., Pungello, E., Miller-Johnson, S., Burchinal, M., 2001). In this study, students who experienced the preschool treatment provided in the Perry Program earned significantly higher scores on 8th grade achievement, spent less time in special education and had a higher graduation rate (Campbell et al., 2001). Perhaps the most striking long-term effects are those social factors of decreased law breaking, higher rates of employment and less use of welfare (Campbell et al., 2001).

Long-term effects have been highlighted above and in numerous studies. Prekindergarten has served a variety of purposes with a variety of clientele for numerous years. Preschools in Nebraska and Iowa are for the most part targeted towards students who are economically disadvantaged or qualify for special education. For this reason it is important to look at the impact that preschool has on various demographics of the students who attend preschool. Studies have shown that the effects of preschool education are larger for Black and Hispanic children relative to Caucasian children (Gormley, Gayer, Phillips, & Dawson, 2005). Studies also show that the effects of preschool are the greatest for students from poverty (Gormley et al., 2005). In a study of universal prekindergarten in Oklahoma, Hispanic students who attend preschool showed a 54% improvement on cognitive assessment as compared to 0% for Caucasian and 17% for Black children (Gormley et al., 2005). The striking correlation that these studies present is that preschool may offer a way to address the achievement gaps prevalent today (Bassok, 2010). The key to these results is the idea of a high quality prekindergarten experience which will be explained further.
High quality prekindergarten programs have a strong foundation in language development as well as early literacy such as phonological awareness, letter knowledge, written expression, and book and print awareness (US Dept. of Ed., 2004). A high quality program also has a focus on early math with an emphasis on numbers and operations (US Dept. of Ed., 2004).

In addition to the core areas, a high quality prekindergarten program has: 1) a clear statement of goals and philosophy that addresses all areas of child development. 2) Students who are engaged in purposeful learning activities as well as play by teachers who plan activities that builds on past learning. 3) Instruction that is guided by a curriculum that includes meaningful content and a focus on the skills necessary for a successful Kindergarten experience. 4) Instruction should be intentional with a balance on individual, small group and whole group experiences. 5) The classroom environment is a place where children feel cared for and safe. 6) Teachers check on student’s progress with assessments linked to their instruction. 7) Prekindergarten staff communicates with parents and caregivers to encourage active participation in the educational experience. 8) Services are intensive enough to allow for cognitive experiences, full-day year-round programs show better results (US Dept. of Ed., 2004).

As discussed above, one practice of a highly effective pre-kindergarten program is a low child-staff ratio that allows the teacher to focus on the educational program rather than behavior and engagement modifications (Campbell, et al., 2001). This can be created by hiring paraprofessionals to support the classroom teacher or through lower acceptance into pre-school programs. Regarding the staff, teachers in preschool programs should be well educated with endorsements in their fields. The teachers working in
preschool programs with this level of education should be paid salaries comparable to elementary educators (Campbell, et al., 2001). One goal of having teachers with this level of knowledge, experience, and pay structure is that the level of mobility in preschool teachers will be reduced. Decreasing mobility builds consistency and knowledge for the preschool program (Campbell, et al., 2001). Another benefit of low child-staff ratios is that this allows for small group instruction and differentiation to happen more easily and naturally. Each preschool child is different, from those students who have a special need to those students who are ready for kindergarten and beyond. It is critical that preschool teachers have a strong understanding of differentiation and tailor their lessons to the individual needs of their students (Campbell, et al., 2001).

Another practice of a high quality prekindergarten program is a systematic early childhood education curriculum (Reynolds, 1994). The curriculum should provide a language rich environment and allow for frequent progress monitoring of children’s learning goals as well as the effectiveness of the teacher and the program (Barnett, 2008). The curriculum should allow for individual differentiation and extensions for each child within the theme of the lesson (Campbell, et al., 2001).

High quality programs should be designed in a way to meet the needs of the whole child. Social and emotional development should be an integral part of any preschool program (Barnett, 2008). It is also critical that each preschool program be a warm place with caring adults in a safe physical setting (Campbell, et al., 2001). Pediatric care, if available, can help to develop healthy habits, including dental awareness, vaccinations, hearing and vision screening (Campbell, et al., 2001).
A high quality program must encourage teachers to be involved in their own professional growth as well as the growth of their department and field (Barnett, 2008). Teachers in preschool programs should have supervision similar to that of an elementary teacher and receive feedback and evaluations in a periodic, effective manner, which allows for an impact on instruction of that teacher (Barnett, 2008).

Finally, another highlighted component of a high quality prekindergarten program is that the classroom environment is language rich and allows for multiple opportunities for language development (Bond & Wasik, 2009). Language can be developed throughout the instructional day. The morning introductions can include modeled language, choral language, as well as individual practice in telling stories and describing activities. Language can be developed in times often considered down times such as snack time and recess. Students can tell their partners about their snack, describe shapes that they are making and be taught to ask questions to build conversation. Students at recess should be supported by the classroom teacher in how to interact with others on the playground and model friendly interactions. Language should be part of every small and whole group lesson throughout the day. Teachers can ask questions and model responses if necessary throughout this type of instruction. Vocabulary development is also a critical part of language development and direct instruction of vocabulary words, including words of directionality, will build a child’s repertoire of language (Justice, McGinty, Piasta, Kaderavek & Fan, 2010).

**School-based/Title I Prekindergarten**  A school based prekindergarten program is provided for a year or sometimes two to three and four year old students prior to entry into kindergarten. These programs are funded by the states and local school districts as
well as the federal government (Magnuson, K., Meyers, M., Ruhm, C., Waldfogel, J., 2004). Title I programs are examples of school based prekindergarten programs.

A Title I preschool is a preschool program of educational services for eligible children below the age at which the local education agency provides elementary education. The purpose of a Title I preschool program is focused on raising the academic achievement of children when they reach school age (US Department of Education, 2004).

In a school-wide Title I school, children who have not reached the age determined by the local education agency as appropriate for elementary education may participate if they live within the attendance area of the Title I school. To be eligible to attend a Title I program in a targeted assistance school, the child must be failing, or at most risk of failing to meet the state’s academic standards. In preschool programs, that determination is made through parent interviews, teacher judgment, and appropriate measures of student achievement (US Dept. of Ed., 2004).

The purpose of Title I preschool programs is to provide young children with educational experiences designed to close the achievement gap between students in poverty and those who are not in poverty. The research has found that intensive, high quality preschool programs can close early achievement gaps for lower income children (Barnett, 2008).

The Department of Education outlines the instructional processes that must be used in prekindergarten Title I programs. The elementary and secondary education act requires that local education agencies must assure that they will take into account the experience of model programs for the educationally disadvantaged, and the findings of
relevant scientifically-based research indicating that services may be most effective if focused on students in the earliest grades at Title I schools. In a Title I preschool, an observer would see children:

- Learning the letters of the alphabet.
- Rhyming words and breaking words into separate sounds.
- Learning new words and how to use them.
- Learning early writing skills.
- Learning to use language by asking and answering questions and by participating in discussions and conversations.
- Learning about written language by looking at books, listening to stories and listening to books every day.

**Head Start Prekindergarten** Another program available to families who have income restrictions is Head Start. Head Start is a federally funded early education program for children from low-income households and children with developmental delays or disabilities. The goal of Head Start is to improve the learning skills, social skills, and health status of poor children (Currie & Thomas, 1995) Head Start serves primarily 3 and 4 year old children and provides them and their parents educational opportunities (Magnunson, 2004). Head Start began in 1964 as part of the “War on Poverty” and has grown with strong public support and increased public funding (Currie and Thomas, 1995).

The Head Start program has adopted performance standards for education and early child hood development. An evaluator of a Head Start program should see the following in a Head Start teacher:
- Supporting each child's learning, using various strategies including experimentation, inquiry, observation, play and exploration;

- Ensuring opportunities for creative self-expression through activities such as art, music, movement, and dialogue;

- Promoting interaction and language use among children and between children and adults; and

- Supporting emerging literacy and numeracy development through materials and activities according to the developmental level of each child. (45 CFR 1301-1311, 2006).

Head Start has a large component for parent involvement. A Head Start grant recipient must include parents in the development and delivery of the program’s curriculum. The program must also provide opportunities for the parents to develop parenting skills, knowledge, and understanding of child development and education. It is the goal of the program to increase a family’s access to literature, services and activities critical to literacy development. Teachers in Head Start programs provide two in-home visits as well as parent teacher conferences (Head Start Program Performance Standards and Other Regulations, 2006).

A Head Start program must also reach out to the community. Ongoing collaborative relationships need to be made with organizations that promote the access to children and families to community resources that meet their needs (Head Start Program Performance Standards and Other Regulations, 2006). Head Start is a program that aims to improve learning skills, health status, and social skills of poor children so that they can have a foundation similar to that of those students who come from a more advantaged program.
The family income of students who attend Head Start is significantly less than that of those children attending other preschools. Children who attend Head Start generally have less-educated mothers and grandmothers as measured by the Armed Forces Qualification Test (Currie and Thomas, 1995). Caucasian students who attend Head Start are disadvantaged in relationship to other white students who attend no preschool at all. African American children who attend Head Start have backgrounds similar to those of students who do not attend preschool (Currie and Thomas, 1995).

**Vocabulary Development**

Vocabulary development in early childhood has an impact on learning throughout a child’s educational journey. Vocabulary acquisition affects reading comprehension and fluency as a student begins to read a higher level text (Christ & Wang, 2010). Students come to school with a wide discrepancy in the number of words that they can understand and use, and much of this can be attributed to socio-economic status (Hart & Risley, 1995). It is therefore important to understand what typical vocabulary development looks like and what a child lacking in experiences and vocabulary development experiences.

**Typical Vocabulary Development** Language and vocabulary development begins early in a child’s life. Infants first begin to build language as they imitate the tones and rhythms that adults use when talking and when they respond to gestures and facial expressions given by a caring adult (Tamis-LeMonda, Bornstein, Baumwell, 2001). They also begin to associate frequently heard words with what the word means such as “bottle”, “binkie”, etc. Infants build language during play time as well through games.
like peek-a-boo and pretending to read books. Adults can help develop this early language by playing rhyming and nonsense word games with the infants, helping them identify objects in a book, discussing characters, and making up stories for the young child (National Research Council, 1998).

As a child gets older, language development becomes more sophisticated. Students who are 3-4 years old should begin to enjoy listening and talking about story books, understand that print carries a message, and make attempts to read and write (Tamis-LeMonda, Bornstein, Baumwell, 2001). These children also begin to identify familiar signs and symbols and participate in rhyming games with other students and adults. Knowledge of letters and letter sounds also becomes apparent during this age as children begin to use some of these letters in their attempts at writing (National Research Council, 1998).

Children begin to learn new words at various stages in development and at different rates. Research indicates that children can learn 10 new words a day from 12 months to 18 years of age if they are hearing many new words used in their environment (Christ & Wang, 2010). A child who is ready to develop new vocabulary has a sense of word consciousness (Christ and Wang, 2010). The concept of word consciousness is the idea that students do not learn words passively. They learn new words when those words are of interest to them, and they have a need to know the word. Children must be aware that they do not know the vocabulary word and that they have a desire to learn the new word. Word consciousness is the first stage in learning new meanings and vocabulary development (Graves, 2000). When a child initially learns a new word due to a single or limited exposure, he or she has a partial understanding of the word’s meaning and may
make some overgeneralizations based on his or her limited exposure to the word. Children will start to fully understand the word when they can begin to cite examples, nonexamples, and connections to other words.

In order for children to learn new words at a higher rate, they must be taught metacognition strategies in which they start to identify, isolate, and highlight words that they do not know. They need to learn strategies on how to decipher a word’s meaning and make connections to other words that they know. The teaching of word learning strategies provides children a tool to identify words they do not understand, use strategies to understand the word, and make connections so that the vocabulary becomes part of the language they use (Christ & Wang, 2010).

**Poverty Implications**

Early language and literacy development can be complicated for typically developing children in middle class and wealthy families. Poverty and its implications create more unique situations for teachers and parents to overcome regarding a child’s literacy development. The most recent data indicates that 13 million American children are living in poverty (Dalhouse & Risko, 2008). This is a predicament that more and more American families are going to find themselves in due to the struggling economy.

Poverty can play devastating effects on early literacy in areas such as the structure of language, letter recognition and print awareness (Hawken, Johnston & McDonnell, 2005). These early literacy skills are crucial to developing higher levels of literacy and are skills that are not well developed in language poor environments. Fewer than 5% of children who receive proper exposure to the foundational skills during early childhood will experience reading difficulties (Landry, Swank, Smith, Assel, & Gunnewig, 2006).
Implications of this research should have a huge impact on the programs and instruction offered. However, the current number of students who come to school with a gap in early literacy skills is in the 20-30% range (Landry, et al., 2006).

The building block to early literacy is oral language. Children of poverty often lack the experiences with parents and other caregivers for quality interactions to develop oral language and literacy (Hawken, Johnston & McDonnell, 2005). Children who come from families with a more rich language have better school experiences (Christ & Wang, 2010).

Language poor families have a smaller vocabulary, and often language is more controlling and punitive (Strickland, 2004.) Oral language is developed at the earliest ages through speech modeled by parents and caregivers. Examples might include shopping at the grocery store and talking to a child about the items being selected and why. Language is also developed through experiences with vocabulary and background schema (Beck & McKeown, 2007). Children who are from families of poverty may have little exposure to the outside world, and their language will often indicate this lack of background knowledge (Christ & Wang, 2010).

An example of poverty’s impact on language is Ruby Payne’s (2003) work with poverty and language that focuses on the idea of 5 registers of language. The 5 registers are frozen, formal, consultative, casual and intimate. The formal register is the register that the middle class uses when it comes to school, careers, and formal assessments. Her research indicates that a majority of students from poverty do not have access to the formal register at home (Payne, 2003).
Poverty can also have an impact on development of early literacy skills. The implications for a student’s development of letter recognition are important to note in children of poverty. Letter recognition, or alphabet knowledge, is the child’s ability to identify letters and understand that each letter can be named and has a sound (Hawken, et al., 2005). Letter knowledge is increasingly important regarding early literacy. The child’s knowledge of letters indicates strength in phonemic awareness and ability to decode later on in his/her educational career. Children who cannot identify at least 10 letters going into kindergarten are more likely to develop reading difficulties (Hawken, et al., 2005). Teachers and parents can build letter recognition by encouraging activities with magnetic letters, alphabet puzzles, alphabet books and other activities. Because children of poverty often do not have access to these materials, the number of students who can identify fewer than 10 letters continues to go up. Access and equity seems to be among the greatest issues in closing the achievement gap (Magnuson, Meyers, Ruhm, Waldfogel, 2004).

Another area impacted by poverty is print awareness. Print awareness plays a critical role as well in determining if a child will be successful in literacy development. Print awareness is about increasing knowledge and interest in books. Children should be exposed to print in a variety of settings and should have multiple experiences of books being read to them. Print awareness is the understanding that not only pictures but also words carry meaning (Hawken, et al., 2005). Access to books and shared reading with a caregiver is critical to early literacy development. Parent involvement regarding print awareness varies greatly. Some parents have few resources or experiences to help their
children while others rely on a strong network of family to share resources (Neuman, 2004).

**Teaching Vocabulary and Language**

**Embedded Language Development** Embedded language development occurs throughout the day in a variety of settings. Embedded language is the language that the child hears on a day-to-day basis and begins to take on as his/her own (New, 2002). Embedded language occurs through conversations, television, reading aloud a book, dramatic play, and play itself. The idea behind embedded language is that the more oral and reading vocabulary experiences a child has, the greater his or her language and reading comprehension (Nelson & Stage, 2007).

Embedded language at school can impact a child’s academic skills. Dickinson (2002) suggests that the time 3-year-olds spend conversing with other children and the amount of time spent in verbalized dramatic play correlates to positive end of kindergarten literacy, vocabulary and storytelling skills. (Dickinson, 2002) This theory of language development does not take into consideration that many children have limited experiences in vocabulary development for many reasons, including factors resulting from poverty (Nelsons & Stage, 2007).

**Strategy Instruction** There are many practices on teaching vocabulary to young children. Practices that are supported by a wealth of research include purposefully and systematically exposing children to new words, directly teaching word meanings, directly teaching word learning strategies and providing opportunities to practice newly-learned words (Christ & Wong, 2010). The power in these four practices is not the practice in isolation, but the practices are used together.
Purposefully and systematically exposing children to new words allows students to be exposed to new words that are appropriate for their developmental level as well as expand the vocabulary that students can make new connections to. Teachers use this practice by providing read-alouds where students can use picture cues and text to help decipher a word’s meaning. The books are selected by interest and often have a connection to the theme of the language arts block. The teacher has access to words that are appropriate for developmental and cognitive development through district approved lists, curriculum provided lists as well as program developed lists.

Directly teaching word meanings allows a student to learn a new word through an experience that is both meaningful and appropriate for him or her. The teacher selects words from the text that he/she will focus on throughout the story and help children develop meanings that are accurate and embedded within the subject or literature. Extensions of teaching word meaning may make the meaning more engrained by having students cite examples and non-examples.

Directly teaching word learning strategies is a practice that allows the student a chance to hear the teacher model his/her think-aloud metacognition strategy on how the teacher uses the text, pictures, and schema to decipher a new word. Modeling of the strategy, providing guided practice with another word, and allowing students to practice the new strategy reinforces their understanding of the new words. Isabelle Beck’s (2007) strategies on vocabulary instruction will be further explored below.

Opportunities to use words previously targeted and learned allows students to make a deeper understanding of the meaning and make connections to other words. Students and teachers may develop a word wall of previously used words to review
throughout the day as well as have available in a writing center. Teachers provide opportunities to practice words in other subjects and develop a visual meaning for the word in an arts and crafts type activity (Christ and Wong, 2010).

For the purpose of this study, Isabelle Beck’s following vocabulary instruction strategies were used. Prior to reading the selection, the teacher will have selected the Tier II words from the story. Tier II words are domain general and more sophisticated labels for concepts already familiar to young children. Utilizing these selected words plays a critical role in the development of the student’s verbal abilities and understanding the relationship between the spoken (phoneme) and written (grapheme) word. For example, the teacher reads the entire story before beginning vocabulary instruction. Prior to reading the story, the teacher introduces briefly any words unknown to the students. The teacher then follows seven direct instructional steps after reading the book to the students in order to support their internalization of language based on vocabulary presented in the story. The seven steps are: (1) First, the word is contextualized for its role in the story. (2) Next the meaning of the word is explained. (3) The children are asked to repeat the word so that they can create phonological representation of it. (4) Examples in contexts other than the one used in the story are provided. (5) Students make judgments about examples. (6) Students construct their own examples. (7) The word’s phonological and meaning representations are reinforced. In addition to these seven steps, the teacher uses a visual representation of the word whenever possible so that students may build the visual schema to fully comprehend the word and the story. Teachers reinforce this initial instruction by providing two other opportunities for review and application of the learned words. This reinforcement may take place by integrating
these words into the choice time for prekindergarten students and during the lunchtime discussion. Teachers also reinforce instruction on following dates by keeping a word wall of the words from many of the stories. The teacher integrates these words as much as possible throughout the instructional day and highlights when the word is used in other school settings.
CHAPTER THREE

Methodology

The purpose of this study is to measure the effect of a standard of care embedded language strategies program utilized in combination with direct language strategy instruction on the measured expressive language, cognitive development, social emotional development, and language development of prekindergarten students attending four neighborhood Title I schools.

The study will focus on prekindergarten students involved in a comprehensive all day Title 1 preschool in three suburban elementary schools. Students whose parents registered them for preschool education and participated in one year of prekindergarten learning and language activities will be referred to as the study participants. This chapter describes the participants, procedures, and dependent and independent variable descriptions.

Participants

Number of participants The maximum accrual for this study is $N = 61$. Title I preschool students who participated in an embedded language program used in combination with direct language strategy instruction who meet the requirements for promotion to kindergarten ($n = 29$) and students who participate in an embedded language strategies program alone who meet the requirements for promotion to kindergarten ($n = 32$) were selected based on their Title I status and participation in the two language intervention programs.
Gender of participants Of the total number of subjects ($N = 61$) 44% are male students, and 56% are female students. This is congruent with the prekindergarten program where 50% of the students are female and 50% of the students are male.

Age range of participants The age range of the study participants will be four years of age to five years of age. The age range of the study participants is congruent with the research school district’s age range demographics of prekindergarten students.

Racial and ethnic origin of participants Of the total number of subjects ($N = 61$) the racial and ethnic origin will be (54%) White students, (15%) Black students, (13%) Asian students and (18%) Hispanic students. The racial and ethnic origin of the study participants is congruent with the racial and ethnic demographics of the research school district’s prekindergarten program.

Inclusion criteria of participants Title I prekindergarten students who attended the research school district’s prekindergarten program and participated in the study’s independent variable conditions completed one full school year of prekindergarten classroom language learning activities and also completed pretest and posttest assessments as participants in this study.

Exclusion criteria of participants Students who are verified as a child with a special need will not be included in this study. Students whose parents are not eligible for Title 1 prekindergarten program participation will be excluded from the study.

Method of participant identification Participants for the embedded language strategies program utilized in combination with direct language strategy instruction ($n = 29$) will be selected based on their Title I status from a group of students enrolled in two suburban elementary schools. Participants for the embedded language strategies program
alone (n = 32) will be selected based on their Title I status from a group of students enrolled in two suburban elementary schools. No individual identifiers will be attached to the achievement data of the 61 participating students of the two groups. All data will be collected retrospectively from administratively controlled databases used for school planning.

**Research Design**

The pretest-posttest two-group comparative efficacy study design is displayed in the following notation.

Group 1 X₁ O₁ Y₁ O₂

Group 2 X₂ O₂ Y₂ O₂

**Group 1 = Study subjects #1** Naturally formed group of prekindergarten students (n = 29) attending neighborhood Title I schools.

**Group 2 = Study subjects #2** Naturally formed group of prekindergarten students (n = 32) attending neighborhood Title I schools.

**X₁ = Study constant** All study subjects received prekindergarten instruction guided by the research school district’s approved early childhood standards and assessments and completed the required objectives for promotion to kindergarten. Moreover, students in Group 1 and Group 2 participated in and completed the school district standard of care embedded language strategies program for one school year.

**Y₁ = Study independent variable, language program, condition #1** Prekindergarten students participating in the school district standard of care embedded language strategies program utilized in combination with direct language strategy instruction.
\( Y_2 = \text{study independent variable, language program, condition #2} \)

Prekindergarten students participating in the school district standard of care embedded language strategies program alone.

\( O_1 = \text{Study pretest dependent measures}. \) (1) Language as measured by the research school district’s beginning of school year pretest Get It, Got It, Go, prekindergarten assessment subtests for (a) alliteration, (b) rhyming, and (c) picture naming. (2) Social/emotional development as measured by the research school districts beginning of school year pretest teacher graded Creative Curriculum Developmental Continuum rubric scores for (a) Follows classroom rules. (b) Uses thinking skills to resolve conflicts. 3) Cognitive development as measured by the research school districts beginning of school year pretest teacher graded Creative Curriculum Developmental Continuum rubric scores for (a) Applies knowledge or experience to a new context. (b) Classifies objects. 4) Language development as measured by the research school districts beginning of school year pretest teacher graded Creative Curriculum Developmental Continuum rubric scores for (a) Expresses self using words and expanded sentences. (b) Understands and follows oral directions. (c) Answers questions. (d) Asks questions. (e) Actively participates in conversations. (f) Comprehends and interprets meaning from books and other texts.

\( O_2 = \text{Study posttest dependent measures}. \) (1) Language as measured by the research school district’s end of school year posttest Get It, Got It, Go, prekindergarten assessment subtests for (a) alliteration, (b) rhyming, and (c) picture naming. (2) Social/emotional development as measured by the research school district’s ending of school year posttest teacher graded Creative Curriculum Developmental Continuum
rubric scores for (a) Follows classroom rules. (b) Uses thinking skills to resolve conflicts.

3) Cognitive development as measured by the research school districts ending of school year posttest teacher graded Creative Curriculum Developmental Continuum rubric scores for (a) Applies knowledge or experience to a new context. (b) Classifies objects.

4) Language development as measured by the research school districts end of school year posttest teacher graded Creative Curriculum Developmental Continuum rubric scores for (a) Expresses self using words and expanded sentences. (b) Understands and follows oral directions. (c) Answers questions. (d) Asks questions. (e) Actively participates in conversations. (k) Comprehends and interprets meaning from books and other texts.

**Description of Procedures**

Permission from the appropriate school research personnel has been obtained. All study data has been routinely collected archival school information. Expressive language data collected is the Get it, Got it, Go assessment taken in September 2010 and the Get it, Got it, Go assessment given in May 2011. Social/emotional, cognitive, and language development data was collected using the Creative Curriculum Developmental Continuum teacher rubric in September 2010 and the posttest was given in May 2011.

**Independent Variable Descriptions**

**Embedded Language Strategies Program.** The school districts standard of care program for language development in prekindergarten is the embedded language strategies program (ELSP). The ELSP program is based on the theory that students who are immersed in language will acquire language by interacting, playing, and learning throughout the instructional day. Oral conversation is the primary strategy used in the
ELSP program. The conversations take place between student and teacher as well as student to student. It is the goal of the ELSP program that students will model more extensive vocabulary and will therefore model effective language for their peers. Another embedded strategy used in prekindergarten is the use of read-alouds. Read-alouds have traditionally served as a literacy opportunity in which the students listen to the teacher read the story, and most of the learning takes place through learning. The Reading Street Curriculum used by the prekindergarten program provides teachers questions and key vocabulary, determined by Reading Street, to emphasize and inquire about during the story. Teachers use the selected story vocabulary throughout the week in various activities.

**Direct language strategy instruction in addition to the Embedded Language Strategies Program.** In addition to the above described embedded language program the research school district Title 1 prekindergarten programs also use direct language strategy instruction (DLSI). The DLSI is based on Beck’s (2007) vocabulary development in children of poverty. Each instructional day requires a language time when a certified teacher reads a non-fiction, grade-appropriate selection to the students for a minimum of 10 minutes. Prior to reading the selection, the teacher will have selected the Tier II words from the story. Tier II words are domain general and more sophisticated labels for concepts already familiar to young children. Utilizing these selected words plays a critical role in the development of the student’s verbal abilities and understanding the relationship between the spoken (phoneme) and written (grapheme) word. For example, the teacher reads the entire story before beginning vocabulary instruction. Prior to reading the story the teacher introduces briefly any unknown words to the students. The
teacher then follows seven direct instructional steps after reading the book to the students in order to support their internalization of language based on vocabulary presented in the story. The seven steps are: (1) First the word is contextualized for its role in the story. (2) Next the meaning of the word is explained. (3) The children are asked to repeat the word so they can create phonological representation of it. (4) Examples in contexts other than the one used in the story are provided. (5) Students make judgments about examples. (6) Students construct their own examples. (7) The word’s phonological and meaning representations are reinforced. In addition to these seven steps, the teacher uses a visual representation of the word whenever possible so that students may build the visual schema to fully comprehend the word and the story. Teachers reinforce this initial instruction by providing two other opportunities for review and application of the learned words. This reinforcement may take place by integrating these words into the choice time for prekindergarten students and during the lunchtime discussion. Teachers also reinforce instruction on following dates by keeping a word wall of the words from many of the stories. The teacher integrates these words as much as possible throughout the instructional day and highlights when the word is used in other school settings.

**Dependent Variables, Measures, and Instrumentation**

Four overarching dependent variables were evaluated for this study. 1) Language expression achievement, 2) language development, 3) cognitive development, and 4) social/emotional Development.

**Achievement dependent measures and instrumentation.** Student language expression scores for (a) alliteration, (b) rhyming, and (c) picture naming fluency scores on the Get it, Got it, Go Assessment will be used to measure language expression
achievement. Social/emotional development, cognitive development, and language
development scores on the Creative Curriculum Continuum will be used to measure the
development areas.

**Research Questions and Data Analysis**

The following student achievement research questions will be asked about the
measured expressive language of prekindergarten students who participate in an
embedded language program used in combination with direct language strategy
instruction activities.

**Overarching Pretest-Posttest Achievement Research Question #1.** Do Title I
students who participate in an embedded language program used in combination with
direct language strategy instruction activities lose, maintain, or improve their beginning
prekindergarten pretest scores compared to end of prekindergarten posttest language
expression scores for (a) alliteration, (b) rhyming, and (c) picture naming fluency scores
on the Get it, Got it, Go Assessment?

**Sub-Question 1a.** Is there a significant difference between Title I
student’s beginning of prekindergarten pretest scores compared to end of prekindergarten
posttest Get it, Got it, Go assessment (a) alliteration scores after participating in an
embedded language program used in combination with direct language strategy
instruction activities?

**Sub-Question 1b.** Is there a significant difference between Title I
student’s beginning of prekindergarten pretest scores compared to end of prekindergarten
posttest Get it, Got it, Go assessment (b) rhyming scores after participating in an
embedded language program used in combination with direct language strategy
instruction activities?

**Sub-Question 1c.** Is there a significant difference between Title I
student’s beginning of prekindergarten pretest scores compared to end of prekindergarten
posttest Get it, Got it, Go assessment (c) picture naming scores after participating in an
embedded language program used in combination with direct language strategy
instruction activities?

**Analysis.** Research Sub-Questions #1a, 1b, and 1c will be analyzed using
dependent t test to examine significance of the difference between Title I students
beginning of prekindergarten pretest scores compared to end of prekindergarten posttest
language expression scores for (a) alliteration, (b) rhyming, and (c) picture naming
fluency on the Get it, Got it, Go Assessment. Because multiple statistical tests will be
conducted, a one tailed .05 alpha level will be employed to help control for Type I errors.
Means and standard deviations will be displayed in tables.

The following student achievement research questions will be asked about the
measured expressive language of prekindergarten students who participate in an
embedded language program alone.

**Overarching Pretest-Posttest Achievement Research Question #2.** Do Title I
students who participate in an embedded language program alone lose, maintain, or
improve their beginning prekindergarten pretest score compared to end of
prekindergarten posttest language expression scores for (a) alliteration, (b) rhyming, and
(c) picture naming fluency scores on the Get it, Got it, Go Assessment?
**Sub-Question 2a.** Is there a significant difference between Title I student’s beginning of prekindergarten pretest scores compared to end of prekindergarten posttest Get it, Got it, Go assessment (a) alliteration scores after participating in an embedded language program alone?

**Sub-Question 2b.** Is there a significant difference between Title I student’s beginning of prekindergarten pretest scores compared to end of prekindergarten posttest Get it, Got it, Go assessment (b) rhyming scores after participating in an embedded language program alone?

**Sub-Question 2c.** Is there a significant difference between Title I student’s beginning of prekindergarten pretest scores compared to end of prekindergarten posttest Get it, Got it, Go assessment (c) picture naming scores after participating in an embedded language program alone?

**Analysis.** Research Sub-Questions #2a, 2b, and 2c will be analyzed using dependent *t* test to examine significance of the difference between Title I students beginning of prekindergarten pretest compared to end of prekindergarten posttest language expression scores for (a) alliteration, (b) rhyming, and (c) picture naming fluency on the Get it, Got it, Go Assessment. Because multiple statistical tests will be conducted, a one tailed .05 alpha level will be employed to help control for Type I errors. Means and standard deviations will be displayed in tables.

The following student achievement research questions will be asked about the measured expressive language of prekindergarten students who participate in an embedded language program alone compared to students who participated in an
embedded language program used in combination with direct language strategy instruction activities.

**Overarching Pretest-Posttest Achievement Research Question #3.** Do Title I students who participated in an embedded language program used in combination with direct language strategy instruction activities and those students who participated in an embedded language program alone have different or congruent end of prekindergarten posttest language expression scores for (a) alliteration, (b) rhyming, and (c) picture naming fluency on the Get it, Got it, Go Assessment?

**Sub-Question 3a.** Is there a significant difference between Title I students who participated in an embedded language program used in combination with direct language strategy instruction activities and those students who participated in an embedded language program alone for end of year prekindergarten posttest language expression scores for (a) alliteration on the Get it, Got it, Go Assessment?

**Sub-Question 3b.** Is there a significant difference between Title I students who participated in an embedded language program used in combination with direct language strategy instruction activities and those students who participated in an embedded language program alone for end of year prekindergarten posttest language expression scores for (b) rhyming on the Get it, Got it, Go Assessment?

**Sub-Question 3c.** Is there a significant difference between Title I students who participated in an embedded language program used in combination with direct language strategy instruction activities and those students who participated in an embedded language program alone for end of year prekindergarten posttest language expression scores for (b) picture naming fluency on the Get it, Got it, Go Assessment?
**Analysis.** Research Sub-Questions #3a, 3b, and 3c will be analyzed using independent *t* test to examine the significance of the difference between Title I students who participate in an embedded language program used in combination with direct language strategy instruction activities and those students who participated in an embedded language program alone on prekindergarten posttest language expression scores for (a) alliteration, (b) rhyming, and (c) picture naming fluency on the Get it, Got it, Go Assessment. Because multiple statistical tests will be conducted, a two-tailed .05 alpha level will be employed to help control for Type I errors. Means and standard deviations will be displayed in tables.

The following student achievement research questions will be asked about the measured expressive language of prekindergarten students who participate in an embedded language program used in combination with direct language strategy instruction activities.

**Overarching Pretest-Posttest Achievement Research Question #4.** Do Title I students who participate in an embedded language program used in combination with direct language strategy instruction activities lose, maintain, or improve their beginning prekindergarten pretest compared to end of prekindergarten posttest scores for (a) social/emotional development, (b) cognitive development, and (c) language development scores on the Creative Curriculum Continuum?

**Sub-Question 4a.** Is there a significant difference between Title I student’s beginning of prekindergarten pretest scores compared to end of prekindergarten posttest Creative Curriculum Continuum assessment for (a) Social/emotional
development scores after participating in an embedded language program used in combination with direct language strategy instruction activities?

**Sub-Question 4b.** Is there a significant difference between Title I student’s beginning of prekindergarten pretest scores compared to end of prekindergarten posttest Creative Curriculum Continuum assessment for (b) Cognitive Development scores after participating in an embedded language program used in combination with direct language strategy instruction activities?

**Sub-Question 4c.** Is there a significant difference between Title I student’s beginning of prekindergarten pretest scores compared to end of prekindergarten posttest Creative Curriculum Continuum assessment for (c) language development scores after participating in an embedded language program used in combination with direct language strategy instruction activities?

**Analysis.** Research Sub-Questions #4a, 4b, and 4c will be analyzed using dependent *t* tests to examine significance of the difference between scores of Title I students who participate in an embedded language program used in combination with direct language strategy instruction activities for beginning of prekindergarten pretest compared to end of prekindergarten posttest language expression scores for (a) social/emotional development, (b) cognitive development, and (c) language development scores on the Creative Curriculum Continuum. Because multiple statistical tests will be conducted, a one tailed .05 alpha level will be employed to help control for Type I errors. Means and standard deviations will be displayed in tables.
The following student achievement research questions will be asked about the measured expressive language of prekindergarten students who participate in an embedded language program alone.

**Overarching Pretest-Posttest Achievement Research Question #5.** Do Title I students who participate in an embedded language program alone lose, maintain, or improve their beginning prekindergarten pretest scores compared to end of prekindergarten posttest scores for (a) social/emotional development, (b) cognitive development, and (c) language development scores on the Creative Curriculum Continuum?

**Sub-Question 5a.** Is there a significant difference between Title I student’s beginning of prekindergarten pretest scores compared to end of prekindergarten posttest Creative Curriculum Continuum assessment for (a) social/emotional development scores after participating in an embedded language program alone?

**Sub-Question 5b.** Is there a significant difference between Title I student’s beginning of prekindergarten pretest scores compared to end of prekindergarten posttest Creative Curriculum Continuum assessment for (b) cognitive development scores after participating in an embedded language program alone?

**Sub-Question 5c.** Is there a significant difference between Title I student’s beginning of prekindergarten pretest scores compared to end of prekindergarten posttest Creative Curriculum Continuum assessment for (c) language development scores after participating in an embedded language program alone?

**Analysis.** Research Sub-Questions #5a, 5b, and 5c will be analyzed using dependent t tests to examine significance of the difference between Title I students who
participate in an embedded language program alone for beginning of prekindergarten pretest compared to end of prekindergarten posttest language expression scores for (a) social/emotional development, (b) cognitive development, and (c) language development scores on the Creative Curriculum Continuum. Because multiple statistical tests will be conducted, a one tailed .05 alpha level will be employed to help control for Type I errors. Means and standard deviations will be displayed in tables.

The following student achievement research questions will be asked about the measured expressive language of prekindergarten students who participated in an embedded language program alone compared to students who participated in an embedded language program used in combination with direct language strategy instruction activities

**Overarching Posttest-Posttest Achievement Research Question #6.** Do Title I students who participated in an embedded language program used in combination with direct language strategy instruction activities and those students who participated in an embedded language program alone have different or congruent end of prekindergarten posttest language expression scores for (a) social/emotional development, (b) cognitive development, and (c) language development scores on the Creative Curriculum Continuum?

**Sub-Question 6a.** Is there a significant difference between Title I students who participated in an embedded language program used in combination with direct language strategy instruction activities and those of students who participated in an embedded language program alone for end of year prekindergarten posttest language
expression scores for (a) social emotional development on the Creative Curriculum Continuum?

**Sub-Question 6b.** Is there a significant difference between scores of Title I students who participated in an embedded language program used in combination with direct language strategy instruction activities and those students who participated in an embedded language program alone for end of year prekindergarten posttest language expression scores for (a) Cognitive Development on the Creative Curriculum Continuum?

**Sub-Question 6c.** Is there a significant difference between scores of Title I students who participated in an embedded language program used in combination with direct language strategy instruction activities and those of students who participate in an embedded language program alone for end of year prekindergarten posttest language expression scores for (c) language development on the Creative Curriculum Continuum?

**Analysis.** Research Sub-Questions #6a, 6b, and 6c will be analyzed using independent t tests to examine the significance of the difference between scores of Title I students who participated in an embedded language program used in combination with direct language strategy instruction activities and those students who participated in an embedded language program alone on prekindergarten posttest language expression scores for (a) social/emotional development, (b) cognitive development, and (c) language development on the Creative Curriculum Continuum. Because multiple statistical tests will be conducted, a two-tailed .05 alpha level will be employed to help control for Type I errors. Means and standard deviations will be displayed in tables.
Data Collection Procedures.

Permission from the appropriate school research personnel was obtained before data was collected. All study language achievement data is retrospective, archival, and routinely collected as part of school records. Information from the selected Title I \((N = 61)\) students includes language expression, cognitive development, social/emotional development, and language development data. Non-coded numbers will be used to display individual anonymous achievement data. Data, descriptive statistics, and inferential analyses will be utilized and reported.

Performance site. This research has been conducted in the public school setting through normal educational practices. The study procedures did not interfere in any way with the normal educational practices of the public school and did not involve coercion or discomfort of any kind. All data was analyzed and kept secure in the researcher’s office. Data was stored on spreadsheets and a flash drive for statistical analysis and was kept in a locked cabinet. No individual identifiers are attached to the data once the data are linked.

Institutional Review Board (IRB) for the protection of Human Subjects

Approval Category. The exemption categories for this study were provided under 45CFR.101 (b) categories 1 and 4. The research was conducted using routinely collected archival data. A letter of support from the district was provided for IRB review.
CHAPTER FOUR

Results

The purpose of this study is to measure the effect of a standard of care embedded language strategies program utilized in combination with direct language strategy instruction on the measured expressive language, cognitive development, social emotional development, and language development of prekindergarten students attending three neighborhood Title I schools. The assessments used to measure these areas are the Get it, Got it, Go assessment as well as the Creative Curriculum Continuum.

Research Question #1.

Do Title I students who participate in an embedded language program used in combination with direct language strategy instruction activities lose, maintain, or improve their beginning prekindergarten pretest compared to end of prekindergarten posttest language expression scores for (a) alliteration, (b) rhyming, and (c) picture naming fluency scores on the Get it, Got it, Go Assessment?

Sub-Question #1a, Alliteration. As seen in Table 1, there was a significant difference between pretest alliteration scores ($M = 4.69$, $SD = 2.11$) and posttest alliteration scores ($M = 11.38$, $SD = 5.15$) for students who participated in an embedded language program used in combination with direct language strategy instruction. Posttest alliteration scores were statistically significantly higher than pretest scores, $t (28) = 6.60$, $p < .001$ (one-tailed), $d = 0.82$.

Sub-Question #1b, Rhyming. As seen in Table 1, there was a significant difference between pretest rhyming scores ($M = 5.24$, $SD = 2.75$) and posttest rhyming scores ($M = 13.38$, $SD = 8.66$) for students who participated in an embedded language
program used in combination with direct language strategy instruction. Posttest rhyming scores were statistically significantly higher than pretest scores, \( t(28) = 4.99, p < .001 \) (one-tailed), \( d = 0.93 \).

**Sub-Question #1c, Picture Naming.** As seen in Table 1, there was a significant difference between pretest picture naming scores (\( M = 20.44, SD = 5.17 \)) and posttest picture naming scores (\( M = 30.97, SD = 3.15 \)) for students who participated in an embedded language program used in combination with direct language strategy instruction. Posttest picture naming scores were statistically significantly higher than pretest scores, \( t(28) = 12.33, p < .001 \) (one-tailed), \( d = 2.29 \).

**Research Question #2.**

Do Title I students who participate in an embedded language program alone lose, maintain, or improve their beginning prekindergarten pretest compared to end of prekindergarten posttest language expression scores for (a) alliteration, (b) rhyming, and (c) picture naming fluency scores on the Get it, Got it, Go Assessment?

**Sub-Question #2a, Alliteration.** As seen in Table 2, there was a significant difference between pretest alliteration scores (\( M = 4.06, SD = 4.39 \)) and posttest alliteration scores (\( M = 9.19, SD = 3.93 \)) for students who participated in an embedded language program alone. Posttest alliteration scores were statistically significantly higher than pretest scores, \( t(30) = 9.29, p < .001 \) (one-tailed), \( d = 1.67 \).

**Sub-Question #2b, Rhyming.** As seen in Table 2, there was a significant difference between pretest rhyming scores (\( M = 4.71, SD = 4.37 \)) and posttest rhyming scores (\( M = 11.55, SD = 4.78 \)) for students who participated in an embedded language...
program alone. Posttest rhyming scores were statistically significantly higher than pretest scores, $t(30) = 6.89$, $p < .001$ (one-tailed), $d = 1.24$.

**Sub-Question #2c, Picture Naming.** As seen in Table 2, there was a significant difference between pretest picture naming scores ($M = 19.44$, $SD = 6.74$) and posttest picture naming scores ($M = 33.78$, $SD = 5.01$) for students who participated in an embedded language program alone. Posttest picture naming scores were statistically significantly higher than pretest scores, $t(31) = 12.10$, $p < .001$ (one-tailed), $d = 2.14$.

**Research Question #3.**

Do Title I students who participated in an embedded language program used in combination with direct language strategy instruction activities and those student who participated in an embedded language program alone have different or congruent end of prekindergarten posttest language expression scores for (a) alliteration, (b) rhyming, and (c) picture naming fluency on the Get it, Got it, Go Assessment?

**Sub-Question #3a, Alliteration.** As seen in Table 3, there was no significant difference between posttest alliteration scores for students who participated in an embedded language program used in combination with direct language strategy instruction activities ($M = 11.38$, $SD = 5.16$) and posttest alliteration scores for students who participated in an embedded language program alone scores ($M = 9.19$, $SD = 3.93$), $t(58) = 1.85$, $p = .07$ (two-tail), $d = 1.83$.

**Sub-Question #3b, Rhyming.** As seen in Table 3, there was no significant difference between posttest rhyming scores for students who participated in an embedded language program used in combination with direct language strategy instruction activities ($M = 13.38$, $SD = 8.66$) and posttest rhyming scores for students who participated in an
embedded language program alone scores (M = 11.55, SD = 4.78), t(58) = 1.02, p = .31 (two-tail), d = 1.06.

**Sub-Question #3c, Picture Naming.** As seen in Table 3, there was a significant difference between posttest picture naming scores for students who participated in an embedded language program used in combination with direct language strategy instruction activities (M = 30.97, SD = 3.15) and posttest picture naming scores for students who participated in an embedded language program alone scores (M= 33.78, SD = 5.01). Picture naming posttest scores for students who participated in the embedded language program alone were statistically significantly higher than picture naming posttest scores for students who participated in the embedded language program used in combination with direct language strategy instruction activities, t(59) = 2.60, p = .01 (two-tail), d = 2.58.

**Research Question #4.**

Do Title I students who participate in an embedded language program used in combination with direct language strategy instruction activities lose, maintain, or improve their beginning prekindergarten pretest compared to end of prekindergarten posttest scores for (a) social/emotional development, (b) cognitive development, and (c) language development scores on the Creative Curriculum Continuum?

**Sub-Question #4a, Social/Emotional Development.** Table 4 illustrates, there was a significant difference between pretest social/emotional scores (M= 7.89, SD = 2.01) and posttest social/emotional scores (M=10.21, SD = 1.75) for students who participated in an embedded language program used in combination with direct language
strategy instruction. Posttest social/emotional scores were statistically significantly higher than pretest social/emotional scores, $t(27) = 12.04$, $p < .001$ (one-tailed), $d = 2.28$.

**Sub-Question #4b, Cognitive Development.** There was a significant difference between pretest cognitive scores ($M = 9.21$, $SD = 0.88$) and posttest cognitive scores ($M = 11.25$, $SD = 0.84$) for students who participated in an embedded language program used in combination with direct language strategy instruction. Posttest cognitive scores were statistically significantly higher than pretest cognitive scores, $t(27) = 25.12$, $p < .001$ (one-tailed), $d = 4.74$.

**Sub-Question #4c, Language Development.** There was a significant difference between pretest language scores ($M = 28.07$, $SD = 2.47$) and posttest language scores ($M = 34.11$, $SD = 1.79$) for students who participated in an embedded language program used in combination with direct language strategy instruction. Posttest language scores were statistically significantly higher than pretest language scores, $t(27) = 22.38$, $p < .001$ (one-tailed), $d = 4.22$.

**Research Question #5.**

Do Title I students who participate in an embedded language program alone lose, maintain, or improve their beginning prekindergarten pretest compared to end of prekindergarten posttest scores for (a) social/emotional development, (b) cognitive development, and (c) language development scores on the Creative Curriculum Continuum?

**Sub-Question #5a, Social/Emotional Development.** As seen in table 5, there was a significant difference between pretest social/emotional scores ($M = 8.67$, $SD = 1.35$) and posttest social/emotional scores ($M=11.17$, $SD = 0.83$) for students who
participated in an embedded language program alone. Posttest social/emotional scores were statistically significantly higher than pretest social/emotional scores, \(t(29) = 9.11, p < .001\) (one-tailed), \(d = 1.67\)

**Sub-Question#5b, Cognitive Development.** As seen in table 5, there was a significant difference between pretest cognitive scores (\(M = 8.94, SD = 1.60\)) and posttest cognitive scores (\(M = 11.71, SD = 0.59\)) for students who participated in an embedded language program alone. Posttest cognitive development scores were statistically significantly higher than pretest cognitive development scores, \(t(30) = 10.80, p < .001\) (one-tailed), \(d = 1.94\).

**Sub-Question # 5c, Language Development.** As seen in table 5, there was a significant difference between pretest language development scores (\(M = 25.84, SD = 4.22\)) and posttest language development scores (\(M = 33.68, SD = 2.82\)) for students who participated in an embedded language program alone. Posttest language development scores were statistically significantly higher than pretest language development scores, \(t(30) = 9.39, p < .001\) (one-tailed), \(d = 1.69\).

**Research Question #6.**

Do Title I students who participated in an embedded language program used in combination with direct language strategy instruction activities and those student who participate in an embedded language program alone have different or congruent end of prekindergarten posttest language expression scores for (a) social/emotional development, (b) cognitive development, and (c) language development scores on the Creative Curriculum Continuum?
Sub-Question #6a, Social/Emotional Development. As seen in Table 6, there was a significant difference between posttest social/emotional development scores for students who participated in an embedded language program used in combination with direct language strategy instruction activities \((M = 10.21, SD = 1.75)\) and posttest social/emotional development scores for students who participated in an embedded language program alone \((M = 11.17, SD = 0.83)\). Social/emotional development posttest scores for students who participated in the embedded language program alone were statistically significantly higher than social/emotional development posttest scores for students who participated in the embedded language program used in combination with direct language strategy instruction activities, \(t(56) = 2.67, p = .01\) (two-tail), \(d = 2.71\).

Sub-Question #6b, Cognitive Development. As seen in Table 6, there was a significant difference between posttest cognitive development scores for students who participated in an embedded language program used in combination with direct language strategy instruction activities \((M = 11.25, SD = 0.84)\) and posttest cognitive development scores for students who participated in an embedded language program alone \((M = 11.71, SD = 0.59)\). Cognitive development posttest scores for students who participated in the embedded language program alone were statistically significantly higher than cognitive development posttest scores for students who participated in the embedded language program used in combination with direct language strategy instruction activities, \(t(56) = 2.45, p = .02\) (two-tail), \(d = 2.42\).

Sub-Question #6c, Language Development. As seen in Table 6, there was no significant difference between posttest language development scores for students who participated in an embedded language program used in combination with direct language
strategy instruction activities (M = 34.11, SD = 1.79) and posttest language development scores for students who participated in an embedded language program alone (M = 33.68, SD = 2.82), t(57) = 0.69, p = .49 (two-tail), d = 0.69.

Summary

In summary, both groups made significant growth on both the Get it, Got it, Go assessment and the Creative Curriculum Continuum from their pretest and posttest comparisons in nearly every category of both assessments. The comparison between the two groups produced mixed results including some significant difference as well as null difference.

The group who received the district standard of care embedded language program in combination with direct language strategy instruction activities showed a significant difference in pretest to posttest scores on the Get it, Got it, Go assessment in the areas of alliteration, rhyming, and picture naming. This group also has shown a significant difference in pretest to posttest scores on the Creative Curriculum assessment in the areas of social emotional development, cognitive development, and language development.

The group who received the district standard of care embedded language program alone showed a significant difference in pretest to posttest scores on the Get it, Got it, Go assessment in the areas of alliteration, rhyming, and picture naming. This group also has shown a significant difference in pretest to posttest scores on the Creative Curriculum assessment in the areas of social emotional development, cognitive development, and language development.

The comparison of the groups indicates that on the Get it, Got it, Go assessment there is not a significant difference between the group scores on alliteration and rhyming.
There is a significant difference between the two groups in the category of picture naming with the group having the embedded language alone scoring higher in the posttest-posttest comparison.

Finally, the Creative Curriculum continuum comparison between the two groups shows significant difference in the categories of Social/Emotional development and cognitive development with the group having the embedded language alone scoring higher in the posttest-posttest comparison. Regarding the language category there was no significant difference between the scores of the groups.
Table 1

Pretest and Posttest Get it, Got it, Go scores for students who participated in an embedded language program used in combination with direct language strategy instruction activities

<table>
<thead>
<tr>
<th>Source</th>
<th>Pretest Get It Got It Go Scores</th>
<th>Posttest Get It Got It Go Scores</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>Alliteration</td>
<td>4.69</td>
<td>2.11</td>
</tr>
<tr>
<td>Rhyming</td>
<td>5.24</td>
<td>2.75</td>
</tr>
<tr>
<td>Picture Naming</td>
<td>20.44</td>
<td>5.17</td>
</tr>
</tbody>
</table>
Table 2

*Pretest and Posttest Get it, Got it, Go scores for students who participated in an embedded language program alone.*

<table>
<thead>
<tr>
<th>Source</th>
<th>Pretest Get It Got It Go Scores</th>
<th>Posttest Get It Got It Go Scores</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$M$</td>
<td>$SD$</td>
</tr>
<tr>
<td>Alliteration</td>
<td>4.06</td>
<td>4.39</td>
</tr>
<tr>
<td>Rhyming</td>
<td>4.71</td>
<td>4.37</td>
</tr>
<tr>
<td>Picture Naming</td>
<td>19.44</td>
<td>6.74</td>
</tr>
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</table>
Table 3

*Posttest and Posttest* Get it, Got it, Go scores for students who participated in an embedded language program used in combination with direct language strategy instruction activities and those who participated in an embedded language program alone*

<table>
<thead>
<tr>
<th>Source</th>
<th>Embedded Language with Direct Language Instruction</th>
<th>Embedded Language Alone</th>
<th>Get it, Got it, Go Posttest-Posttest Comparison</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
</tr>
<tr>
<td>Alliteration</td>
<td>11.38</td>
<td>5.16</td>
<td>9.19</td>
</tr>
<tr>
<td>Rhyming</td>
<td>13.38</td>
<td>8.66</td>
<td>11.55</td>
</tr>
<tr>
<td>Picture Naming</td>
<td>30.97</td>
<td>3.15</td>
<td>33.78</td>
</tr>
</tbody>
</table>

* not significant
Table 4

*Pretest and Posttest Creative Curriculum scores for students who participated in an embedded language program used in combination with direct language strategy instruction activities*

<table>
<thead>
<tr>
<th>Source</th>
<th>Pretest Creative Curriculum Scores</th>
<th>Posttest Creative Curriculum Scores</th>
<th>(t)</th>
<th>(p)</th>
<th>(d)</th>
</tr>
</thead>
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<td></td>
<td>(M)</td>
<td>(SD)</td>
<td>(M)</td>
<td>(SD)</td>
<td></td>
</tr>
<tr>
<td>Socio/Emotional</td>
<td>7.89</td>
<td>2.01</td>
<td>10.21</td>
<td>1.75</td>
<td>12.04</td>
</tr>
<tr>
<td>Cognitive Development</td>
<td>9.21</td>
<td>0.88</td>
<td>11.25</td>
<td>0.84</td>
<td>25.12</td>
</tr>
<tr>
<td>Language</td>
<td>28.07</td>
<td>2.47</td>
<td>34.11</td>
<td>1.79</td>
<td>22.38</td>
</tr>
</tbody>
</table>
Table 5

*Pretest and Posttest Creative Curriculum scores for students who participated in an embedded language program alone*

<table>
<thead>
<tr>
<th>Source</th>
<th>Pretest Creative Curriculum Scores</th>
<th>Posttest Creative Curriculum Scores</th>
<th>t</th>
<th>p</th>
<th>d</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
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<tr>
<td>Socio/Emotional</td>
<td>8.67</td>
<td>1.35</td>
<td>11.17</td>
<td>0.83</td>
<td>9.11</td>
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<tr>
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<td>8.94</td>
<td>1.60</td>
<td>11.71</td>
<td>0.59</td>
<td>10.80</td>
</tr>
<tr>
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<td>4.22</td>
<td>33.68</td>
<td>2.82</td>
<td>9.39</td>
</tr>
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</table>
Table 6

Posttest and Posttest Creative Curriculum scores for students who participated in an embedded language program used in combination with direct language strategy instruction activities and those who participated in an embedded language program alone

<table>
<thead>
<tr>
<th>Source</th>
<th>Creative Curriculum Posttest-Posttest Comparison</th>
<th>Embedded Language with Direct Language Instruction</th>
<th>Embedded Language Alone</th>
<th>M</th>
<th>SD</th>
<th>M</th>
<th>SD</th>
<th>t</th>
<th>p</th>
<th>d</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Embedded Language with Direct Language Instruction</td>
<td>Embedded Language Alone</td>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
<td>t</td>
<td>p</td>
<td>d</td>
</tr>
<tr>
<td>Social/Emotional Development</td>
<td></td>
<td>10.21</td>
<td>1.75</td>
<td>11.17</td>
<td>0.83</td>
<td>2.67</td>
<td>.01</td>
<td>2.71</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cognitive Development</td>
<td></td>
<td>11.25</td>
<td>0.84</td>
<td>11.71</td>
<td>0.59</td>
<td>2.45</td>
<td>.02</td>
<td>2.42</td>
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<tr>
<td>Language Development</td>
<td></td>
<td>34.11</td>
<td>1.79</td>
<td>33.68</td>
<td>2.82</td>
<td>0.69</td>
<td>.49*</td>
<td>0.69</td>
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</tr>
</tbody>
</table>

* not significant
CHAPTER FIVE
Conclusions and Discussion

The purpose of this study was to measure the effect of a standard of care embedded language strategies program utilized in combination with direct language strategy instruction on the measured expressive language, cognitive development, social emotional development, and language development of prekindergarten students attending three neighborhood Title I schools. The assessments used to measure these areas were the Get it, Got it, Go assessment as well as the Creative Curriculum Continuum. All study achievement measures related to each of the dependent variables, were retrospective, archival, and routinely collected school information. Permission from the research school district and the Institutional Review Board for the Protection of Human Subjects was obtained before achievement data were collected and analyzed.

Research Question #1 Conclusion

Overall, pretest-posttest results indicated that Title I Prekindergarten students who participated in an embedded language program used in combination with direct language strategy instruction improved their language expression scores in (a) alliteration, (b) rhyming, and (c) picture naming fluency scores on the Get it, Got it, Go Assessment.

There was a significant difference between pretest alliteration scores and posttest alliteration scores for students who participated in an embedded language program used in combination with direct language strategy instruction. The significant difference was in the direction of higher posttest mean achievement for students on the alliteration subtest of Get it, Got it, Go. This significance was anticipated due to the high quality
prekindergarten literacy instruction offered to these students. The data suggests that students who participate in Title I prekindergarten programs with an embedded language program used in combination with direct language strategy instruction show significant growth in the area of alliteration.

There was a significant difference between pretest rhyming scores and posttest rhyming scores for students who participated in an embedded language program used in combination with direct language strategy instruction. The significant difference was in the direction of higher posttest mean achievement for students on the rhyming subtest of Get it, Got it, Go. This significance was anticipated due to the high quality prekindergarten literacy instruction offered to these students. The data suggests that students who participate in Title I prekindergarten programs with an embedded language program used in combination with direct language strategy instruction show significant growth in the area of rhyming.

There was a significant difference between pretest picture naming scores and posttest picture naming scores for students who participated in an embedded language program used in combination with direct language strategy instruction. The significant difference was in the direction of higher posttest mean achievement for students on the picture naming subtest of Get it, Got it, Go. This significance was anticipated due to the high quality prekindergarten literacy instruction offered to these students. The data suggests that students who participate in Title I prekindergarten programs with an embedded language program used in combination with direct language strategy instruction show significant growth in the area of picture naming.

**Research Question #2 Conclusion**
Overall, pretest-posttest results indicated that Title I prekindergarten students who participated in an embedded language program alone improved their language expression scores in (a) alliteration, (b) rhyming, and (c) picture naming fluency scores on the Get it, Got it, Go Assessment.

There was a significant difference between pretest alliteration scores and posttest alliteration scores for students who participated in an embedded language program alone. The significant difference was in the direction of higher posttest mean achievement for students on the alliteration subtest of Get it, Got it, Go. This significance was anticipated due to the high quality prekindergarten literacy instruction offered to these students. The data suggests that students who participate in Title I prekindergarten programs with an embedded language program alone show significant growth in the area of alliteration.

There was a significant difference between pretest rhyming and posttest rhyming scores for students who participated in an embedded language program alone. The significant difference was in the direction of higher posttest mean achievement for students on the rhyming subtest of Get it, Got it, Go. This significance was anticipated due to the high quality prekindergarten literacy instruction offered to these students. The data suggests that students who participate in Title I prekindergarten programs with an embedded language program alone show significant growth in the area of rhyming.

There was a significant difference between pretest picture naming scores and posttest picture naming scores for students who participated in an embedded language program alone. The significant difference was in the direction of higher posttest mean achievement for students on the picture naming subtest of Get it, Got it, Go. This significance was anticipated due to the high quality prekindergarten literacy instruction
offered to these students. The data suggests that students who participate in Title I
prekindergarten programs with an embedded language program alone show significant
growth in the area of picture naming.

**Research Question #3 Conclusion**

The research question regarding the posttest-posttest comparison of Title I
students who participated in an embedded language program used in combination with
direct language strategy instruction activities and those students who participated in an
embedded language program alone produced mixed results on posttest language
expression scores for (a) alliteration, (b) rhyming, and (c) picture naming fluency on the
Get it, Got it, Go Assessment.

There was not a significant difference between posttest alliteration scores for
students who participated in an embedded language program used in combination with
direct language strategy instruction activities and posttest alliteration scores for students
who participated in an embedded language program alone. These results were not
expected. It was anticipated that the group who received an emphasis on direct language
strategy instruction would produce greater results on the alliteration assessment. Mean
results indicate that on the posttest comparison the group who had the direct language
strategy instruction had higher mean scores than the group that had embedded alone, but
this difference is not significant. The data suggests that scores of students who
participate in the two programs are not significantly different on the alliteration
assessment.

There was not a significant difference between posttest rhyming scores for
students who participated in an embedded language program used in combination with
direct language strategy instruction activities and posttest rhyming scores for students who participated in an embedded language program alone. These results were not expected. It was anticipated that the group who received an emphasis on direct language strategy instruction would produce greater results on the rhyming assessment. Mean results indicate that on the posttest comparison the group who had the direct language strategy instruction had higher mean scores than the group that had embedded alone, but this difference is not significant. The data suggests that scores of students who participate in the two programs are not significantly different on the rhyming assessment.

There was a significant difference between posttest picture naming scores for students who participated in an embedded language program used in combination with direct language strategy instruction activities and posttest picture naming scores for students who participated in an embedded language program alone. The significant difference was in the direction of higher posttest mean achievement for students who participated in the embedded language program alone on the picture naming subtest of Get it, Got it, Go. These results were not expected. It was anticipated that the group who received an emphasis on direct language strategy instruction would produce greater results on the picture naming assessment. The data suggests that students who participate in the embedded language program alone score significantly better on posttest comparisons in the area of picture naming.

**Research Question #4 Conclusion**

Overall, Title I students who participated in an embedded language program used in combination with direct language strategy instruction activities improved their beginning prekindergarten pretest scores compared to end of prekindergarten posttest
scores for (a) social/emotional development, (b) cognitive development, and (c) language development scores on the Creative Curriculum Continuum.

There was a significant difference between pretest social/emotional scores and posttest social/emotional scores for students who participated in an embedded language program used in combination with direct language strategy instruction. The significant difference was in the direction of higher posttest mean achievement for students on the social/emotional subtest of Creative Curriculum Continuum. This significance was anticipated due to the high quality prekindergarten literacy instruction offered to these students. The students were able to carry over their literacy learning into other skills related to social/emotional development. The data suggests that students who participate in Title I prekindergarten programs with an embedded language program used in combination with direct language strategy instruction show significant growth in the area of social/emotional development.

There was a significant difference between pretest cognitive scores and posttest cognitive scores for students who participated in an embedded language program used in combination with direct language strategy instruction. The significant difference was in the direction of higher posttest mean achievement for students on the cognitive development subtest of Creative Curriculum. This significance was anticipated due to the high quality prekindergarten literacy instruction offered to these students. The data suggests that students who participate in Title I prekindergarten programs with an embedded language program used in combination with direct language strategy instruction show significant growth in the area of cognitive development.
There was a significant difference between pretest language scores and posttest language scores for students who participated in an embedded language program used in combination with direct language strategy instruction. The significant difference was in the direction of higher posttest mean achievement for students on the language development subtest of Creative Curriculum. This significance was anticipated due to the high quality prekindergarten literacy instruction offered to these students. The data suggests that students who participate in Title I prekindergarten programs with an embedded language program used in combination with direct language strategy instruction show significant growth in the area of language development.

**Research Question #5 Conclusion**

Overall, Title I students who participated in an embedded language program alone improved their beginning prekindergarten pretest scores compared to end of prekindergarten posttest scores for (a) social/emotional development, (b) cognitive development, and (c) language development scores on the Creative Curriculum Continuum.

There was a significant difference between pretest social/emotional scores and posttest social/emotional scores for students who participated in an embedded language program alone. The significant difference was in the direction of higher posttest mean achievement for students on the social/emotional subtest of Creative Curriculum. This significance was anticipated due to the high quality prekindergarten literacy instruction offered to these students. The students were able to carry over their literacy learning into other skills related to social/emotional development. The data suggests that students who
participate in Title I prekindergarten programs with an embedded language program alone show significant growth in the area of social/emotional development.

There was a significant difference between pretest cognitive scores and posttest cognitive scores for students who participated in an embedded language program alone. The significant difference was in the direction of higher posttest mean achievement for students on the cognitive development subtest of Creative Curriculum. This significance was anticipated due to the high quality prekindergarten literacy instruction offered to these students. The data suggests that students who participate in Title I prekindergarten programs with an embedded language program alone show significant growth in the area of cognitive development.

There was a significant difference between pretest language scores and posttest language scores for students who participated in an embedded language program alone. The significant difference was in the direction of higher posttest mean achievement for students on the language development subtest of Creative Curriculum. This significance was anticipated due to the high quality prekindergarten literacy instruction offered to these students. The data suggests that students who participate in Title I prekindergarten programs with an embedded language program alone show significant growth in the area of language development.

**Research Question #6 Conclusion**

The research question regarding the posttest-posttest comparison of Title I students who participated in an embedded language program used in combination with direct language strategy instruction activities and those student who participated in an embedded language program alone produced mixed results on posttest language
expression scores for (a) social/emotional Development, (b) cognitive development, and (c) language development scores on the Creative Curriculum Continuum.

There was a significant difference between posttest social/emotional scores for students who participated in an embedded language program used in combination with direct language strategy instruction activities and posttest social/emotional scores for students who participated in an embedded language program alone. The significant difference was in the direction of higher posttest mean achievement for students who participated in the embedded language program alone on the social/emotional development subtest of Creative Curriculum. These results were not expected. It was anticipated that the group who received an emphasis on direct language strategy instruction would produce greater results in the area of social/emotional development. The data suggests that students who participate in the embedded language program alone score significantly better on posttest comparisons in the area of social/emotional development.

There was a significant difference between posttest cognitive scores for students who participated in an embedded language program used in combination with direct language strategy instruction activities and posttest cognitive scores for students who participated in an embedded language program alone. The significant difference was in the direction of higher posttest mean achievement for students who participated in the embedded language program alone on the cognitive development subtest of Creative Curriculum. These results were not expected. It was anticipated that the group who received an emphasis on direct language strategy instruction would produce greater results in the area of cognitive development. The data suggests that students who
participate in the embedded language program alone score significantly better on posttest comparisons in the area of cognitive development.

There was not a significant difference between posttest language scores for students who participated in an embedded language program used in combination with direct language strategy instruction activities and posttest language scores for students who participated in an embedded language program alone. These results were not expected. It was anticipated that the group who received an emphasis on direct language strategy instruction would produce greater results on the language development assessment. Mean results indicate that on the posttest comparison the group who had the direct language strategy instruction had higher mean scores than the group that had embedded alone, but this difference is not significant. The data suggests that scores of students who participate in the two programs are not significantly different on the language development assessment of Creative Curriculum.

**Discussion**

The results of this study support student participation in both the embedded language program used in combination with direct language strategy instruction activities and the embedded language program alone. Students who participated in these two programs showed significant growth in pretest-posttest comparisons on both the Get it, Got it, Go assessment and the Creative Curriculum Continuum. While these students’ success cannot be directly attributed to participation in these programs, it can be assumed that the programs indirectly contributed to the students’ growth in these areas.

The results also suggest that the embedded language program used in combination with direct language strategy instruction does not produce significantly higher test results.
In fact, in some areas including picture naming fluency, social emotional development, and cognitive development, the students who received the embedded language program alone scored significantly better. While these results cannot be directly connected to participation in either program, it can be surmised that the embedded language program used in combination with direct language strategy instruction does not significantly benefit students.

**Implications for Practice**

The results of the study support the idea that high quality prekindergarten programs have a strong foundation in language development as well as early literacy such as phonological awareness, letter knowledge, written expression, book and print awareness (US Dept. of Ed., 2004). A systematic early childhood education curriculum is paramount to the success of preschool children (Reynolds, 1994). The curriculum should provide a language-rich environment and allow for frequent progress monitoring of children’s learning goals as well as the effectiveness of the teacher and the program (Barnett, 2008). The curriculum should allow for individual differentiation and extensions for each child within the theme of the lesson (Campbell, et al., 2001).

This study is not as conclusive in promoting the best way to teach language and vocabulary to young students. Embedded language development occurs throughout the day in a variety of settings. Embedded language is the language that the child hears on a day-to-day basis and begins to take on as his/her own (New, 2002). Embedded language occurs through conversations, television, reading aloud a book, dramatic play, and play itself. The idea behind embedded language is that the more oral and reading vocabulary experiences a child has, the greater his or her language and reading comprehension
Direct language strategy instruction purposefully and systematically exposes children to new words, directly teaches word meanings, directly teaches word learning strategies and provides opportunities to practice newly-learned words (Christ & Wong, 2010). The data would support that in order to impact language scores, direct language strategies benefit students. In areas such as cognitive development and social/emotional development, direct language strategies do not appear to benefit the student. The implications for practice would be to promote the embedded language strategy program as a tool to meet the needs of targeted students with the direct language strategy instruction to be used to support the differentiated needs of all students.

**Implications for Policy**

All stakeholders need to promote the participation of all students in a high quality prekindergarten program. Many states are considering the needs for universal prekindergarten; this study demonstrates the positive growth that students can achieve in a high quality prekindergarten program. Prekindergarten education might be the best tool in addressing existing education gaps.

This study further supports that policy that aims to close the achievement gap should be aimed at providing high quality prekindergarten programs for all children. Achievement gaps can be closed, but they must be closed early in order to have the greatest impact on the child and his or her future success.

**Implications for Further Research**

The results of this study point to the need of further research in several key areas. It is evident that a high quality prekindergarten program positively impacts student achievement, but there is little research on what components of the program have the
The greatest impact. More can be learned about boxed programs vs. instructional strategies. Is it best to deliver a purchased, systematic instructional program for early childhood students or is it about instructional strategies and teacher quality?

Little research exists about the benefits and the structures of embedded language instruction. That it benefits young students is known, but what components are most effective? What role does teacher experience and quality play in delivering high quality embedded language instruction?

**Summary**

This study highlighted instructional programs used in prekindergarten programs. It validated the strong benefit of a high quality prekindergarten program but was inconclusive about the best way to provide instruction in vocabulary and language development. All students benefit from language instruction, and great oral language and vocabulary are central to their reading development as they get older. The best strategy for teaching language to young children is dependent on the needs of each child, and by meeting the needs of each child, the achievement gap can be closed.
REFERENCES


