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A study of the impact of Imagination Library participation on kindergarten reading achievement

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COLLEGE OF EDUCATION

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Lisa Embree

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2009

ABSTRACT

A Study of the Impact of Imagination Library Participation on Kindergarten Reading Achievement

by

Lisa Embree

M.A., East Tennessee State University, 2001

B.S., East Tennessee State University, 1997

Submitted in Partial Fulfillment
of the Requirements for the Degree of
Doctor of Education

Walden University
December 2009

ABSTRACT

Very little research has been conducted on the impact of the Imagination Library, a Tennessee based reading program, on student reading achievement. Therefore, the purpose of this cross-sectional explanatory study was to test whether Imagination Library program participation had an impact on reading achievement for kindergarten students from 3 rural elementary schools. The theoretical basis for this study was Vygotsky's sociocultural theory, the process of scaffolding, and language learning models. ANOVA was used to test the hypothesis that reading achievement for participants was significantly different from nonparticipants and was also used to test the hypotheses of relationships between reading achievement and gender and socioeconomic status. Spearman correlation was used to test whether a relationship exists between the reported frequency of read-aloud sessions and achievement as well as a relationship between the length of time in the program and achievement. Findings from this study supported an achievement gap by socioeconomic status. However, findings failed to support a gender achievement gap and that program participation, length of participation, or the reported frequency of read-aloud sessions significantly impacted reading achievement among kindergarten students. A conclusion from this research is that just sending free books to children is not enough. Recommendations for action include registering more lower-income households, enriching the program with supplemental information or materials, and providing opportunities for parent education workshops. The implications for social change include greater awareness of early intervention strategies for reducing the achievement gap and enhancing literacy at an early age.

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DEDICATION

I would like to dedicate this accomplishment to God and my family. Without God, none of this would have been possible. Thank you to God for providing me wisdom and guidance throughout this process. Without my husband Craig, I would have never seen the fruitful end to this journey. Thank you to Craig for all of the loads of laundry that you so patiently did and for all of your encouragement when I wanted to quit. I love you. Without the smiles and hugs from my son Garrett, I could have never kept going to the end. Thank you to Garrett for understanding when mommy needed to be on the computer. Without my mom and dad, I would have never dreamed such an impossible dream. Thank you both for all of the sacrifices that you made for me, for always making me feel like there was nothing that I could not accomplish, and for always making education so important.

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CHAPTER 1

INTRODUCTION TO THE STUDY

Introduction

Academic achievement across disciplines is dependent on reading achievement (Grimm, 2008; McCoach, O'Connell, Reis, & Levitt, 2006). A significant relationship exists between early home literacy experiences, such as the availability of books and frequency of read-aloud sessions, and reading achievement (Rashid, Morris & Sevcik, 2005). More specifically, a literate home environment (Rashid et al., 2005) is directly related to a child's language development (Kelly & Campbell, 2008; McCoach et al., 2006), early literacy development (American Library Association [ALA], 2007; National Reading Panel [NRP], 2001; Rashid et al., 2005), school readiness (ALA, 2007; Nord, Lennon, Liu, & Chandler, 1999), future reading performance (Molfese, Modglin, & Molfese, 2003), and overall school achievement (Chall & Snow, 1982). Home factors, such as parental attitudes (Park, 2008), being read to everyday (Chall & Snow, 1982; Dickenson & Neuman, 2006; Healy, 2001; Nord et al., 1999; Trelease, 1995), and access to books (Book Trust, 2006; Feitelson & Goldstein, 1986; PISA, 2000; Trelease, 2001), improve children's reading performances.

In conjunction with the influence of a literate home environment, researchers report a relationship between socioeconomic level and readiness for school (ALA, 2007), as well as socioeconomic level and reading achievement (Chall & Snow, 1982; PISA, 2006; PISA, 2000). Eamon (2005) and the National Center for Education Statistics (NCES, 2008), report on the effect of poverty on reading achievement. Children living in

poverty are less likely to be read to (O'Donnell, 2008) and have fewer books in the home, accounting for individual differences in academic achievement (ALA, 2007). Research indicates few or no books in the home (Book Trust, 2006) and limited time spent reading aloud in the home result in later academic difficulties (Colgan, 2002; McCarthy, 1995; Ullery, 1992), especially in lower-income households. Therefore, many students are entering school unprepared and at risk for early reading difficulties (Boyer, 1991; Carter, 1967). Students who start school at a disadvantage generally continue to perform at a lower reading level throughout high school compared to peers who start school with enriched home experiences (ALA, 2007; Kelly & Campbell, 2008; Strickland, 2002).

The percentage of students in Tennessee recognized as economically disadvantaged is 47.1, which is higher than the national average of 40.9 (State Education Data Center [SEDC], 2008; U. S. Department of Education [U. S. DOE], 2008a). Forty-five percent of schools in Tennessee qualify as Title 1 schools (NCES, 2007). In 2002, the Reading First Initiative and the Early Reading First Initiative (U. S. DOE, 2008b) of the No Child Left Behind Act (NCLB, 2001) were intended to "help close the achievement gap between disadvantaged and minority students and their peers" (U. S. DOE, 2008b, ¶ 1) by improving reading performance by the end of grade 3. However, Tennessee students in grades 4 and 8 who are eligible for free or reduced-price school lunch, scored lower than students who were not eligible for free or reduced-price lunch (NCES, 2007). Further, Black and Hispanic students in Tennessee in grades 4 and 8 scored lower than White students, and the achievement gap between grade 4 Black and White students was 6 points greater in 2007 than it was in 1992 (NCES, 2007).

As part of a national political and educational agenda, Tennessee is faced with the challenge of improving student reading scores. Tennessee students score below the national average percentage for reading proficiency (SEDC, 2008) and did not improve achievement in reading at the elementary level (Tennessee Department of Education [TDOE], 2008b). There has been no significant gain in grade 4 reading performance in Tennessee from 1992 to 2007 (Lee, Grigg, & Donahue, 2007; NCES, 2007). In response to increased accountability requirements and No Child Left Behind reform, the state of Tennessee has adopted an early intervention book-distribution program intended to enrich children's home literacy environments by increasing their access to books and encouraging parents to read with their children starting at birth (Governor's Books from Birth Foundation [GBBF], 2008c). Approximately 52% of the state of Tennessee's total population under age 5 is registered for the Imagination Library program and receiving a new book every month in the mail at no cost to the family (GBBF, 2008c). As of November 2008, 60% of the children under age 5 in Sullivan County, Tennessee were registered for the Imagination Library and nearly 3,000 children in Sullivan County had graduated from the program (GBBF, 2008b).

Two research studies have been conducted in Tennessee concerning the Imagination Library. A 2003 study submitted to The Dollywood Foundation surveyed parents about their opinions on how the program impacted home reading attitudes and practices (High/Scope Educational Research Foundation, 2003). Of the 821 respondents, 34% reported the Imagination Library was the home's primary source of books and indicated time spent reading to their children increased as a result of the program

(High/Scope Educational Research Foundation, 2003). Recommendations from the 2003 study included a need to recruit and maintain contact with lower-income households (High/Scope Educational Research Foundation, 2003). In 2007, a study conducted by the Tennessee Board of Regents (TBR) surveyed preschool and kindergarten teachers concerning their opinions, based on teacher observations, on whether participants in the program outperformed nonparticipants (TBR, 2008a; TBR, 2008b). Of the 320 kindergarten teachers and approximately 150 prekindergarten teachers that responded to the Internet web-based survey, 64% of preK teachers and 48% of kindergarten teachers stated that Imagination Library participants performed better than expected compared to nonparticipants (TBR, 2008a; TBR, 2008b). However, teacher responses were analyzed using a five-point Likert rating scale (TBR, 2008a; TBR, 2008b), as opposed to actual student achievement scores.

This study is important to stakeholders because the state department of Tennessee, the Governor's Books from Birth Foundation, and county Imagination Library sponsors across the state are operating without supporting reading achievement scores determining the effectiveness of the program and the reading performance of school-aged Imagination Library participants compared to nonparticipants. Social change is addressed by exploring the role an early intervention book-distribution program plays on beginning of the year instructional reading levels among kindergarten students, and study findings can inform legislators and state department leaders of the role early reading programs play in regards to school readiness. This study is important because "35% of American children entering kindergarten today lack the basic language skills they will need to learn to read"

(Reach Out and Read [ROR], 2008, p. 2). The research literature reports that book ownership and reading aloud to children prior to starting school is related to reading achievement, and success in the early grades is indicative of later school success (American Federation of Teachers [AFT], 2009a). Specifically, children who have difficulty with early literacy skills in kindergarten and at the end of grade 1 continue to underachieve on grade 4 standardized reading assessments (Juel, 1988; Torgesen, 2004). Research indicates that "intervening early to improve the home learning environment for disadvantaged children will ensure that they are ready to learn when they enter school and succeed later in life" (ROR, 2008, p. 2). Thus, exploring the impact of Imagination Library participation on reading achievement among kindergarten students is aligned with Walden University's mission of social change (Walden University, 2008).

Statement of the Problem

Little is known about the impact of Imagination Library participation on the reading achievement of Tennessee students. Specifically, it is not known in Sullivan County, Tennessee whether or to what extent providing children birth to age 5 with one free children's book in the mail every month impacts beginning of the year instructional reading levels among kindergarten students. Additionally, it is not known to what degree participating families use the free books and whether the reported frequency of read-aloud sessions with Imagination Library books impacts beginning of the year instructional reading levels among kindergarten students at three rural elementary schools in Sullivan County, Tennessee. Currently, the Commissioner of the state department of Tennessee provides all superintendents across the state with a questionnaire for parents to

complete at kindergarten registration regarding the length of time their children participated in the Imagination Library. However, many schools in Tennessee are not providing the questionnaire to the parents, and children continue to enter kindergarten without the needed identification to track the achievement of participants in the program compared to nonparticipants (M. B. Ikard, personal communication, November 13, 2008). This problem impacts legislators, state department leaders, and county sponsors because the cost of purchasing and delivering books is $28 per child, per year (GBBF, 2008a). There are many possible factors contributing to this problem, among which include the fact that the program was funded statewide in 2004, making it difficult to determine the program's effects because participants have not been old enough to take elementary reading achievement tests. Furthermore, some stakeholders are reluctant to gather student reading scores because participating families are promised their personal information will only be needed for monthly book mailings (J. Miles, personal communication, November 20, 2008).

This study will contribute to the body of knowledge needed to address this problem by exploring the impact of Imagination Library participation on elementary student achievement at three schools in northeastern Tennessee. Specifically, this study will explore the extent to which providing children birth to age 5 with one free children's book in the mail every month impacts the reading levels among kindergarten students at the beginning of the school year at three rural elementary schools in Sullivan County, Tennessee. Additionally, this study will explore to what degree participating families use

the free books and whether the length of participation or reported frequency of read-aloud sessions impacts reading achievement.

Purpose of the Study

The purpose of this cross-sectional explanatory study was to test the theory of Imagination Library effectiveness that compares Imagination Library participation to reading achievement, for kindergarten students at three rural elementary schools in Sullivan County, Tennessee. The independent variable, participation in the Imagination Library program, is defined as registration during the preschool years and beginning anytime from birth to age 5 that provides children with one free children's book in the mail every month. The dependent variable, reading achievement, is defined as performance based on a beginning of the year standardized baseline test that measures instructional reading levels and includes a tiered reading placement. This study explored five relationships:

1. The impact of the Imagination Library program in regards to the beginning of the year instructional reading levels of kindergarten participants compared to nonparticipants and of

2. Participants who qualified for free and reduced-price school lunch compared with kindergarten students who were not participants who qualified for free and reduced-price school lunch.

3. Beginning of the year instructional reading levels among kindergarten male participants of the Imagination Library compared to female participants.

4. The relationship between the reported frequency at which the Imagination Library books were read to the children prior to kindergarten registration and beginning of the year instructional reading levels among kindergarten students who were participants in the Imagination Library.

5. The relationship between the length of participation in the Imagination Library program prior to kindergarten registration and beginning of the year instructional reading levels among kindergarten students.

Nature of the Study

This quantitative study used a cross-sectional, explanatory design (Johnson, 2001) to explore whether or to what extent providing children birth to age 5 with one free children's book in the mail every month and whether the length of participation or the reported frequency of read-aloud sessions with Imagination Library books impacts reading achievement among kindergarten students at three rural elementary schools in Sullivan County, Tennessee. The rationale for choosing a cross-sectional, explanatory design was that "nonexperimental quantitative research is an important area of research for educators because there are so many important but nonmanipulable independent variables needing further study in the field of education" (Johnson, 2001, p. 3). Archival data was gathered from a questionnaire administered in March of 2009 during kindergarten registration at the chosen elementary schools. It was needed to determine the reported frequency of read-aloud sessions with Imagination Library books and the length of participation in the program. The baseline test is the chosen reading test for this study based on the advantages of cost, accessibility, convenience, and time (Creswell,

2003), because it is a standardized test currently given to all kindergarten students at the three elementary schools.

The rationale for choosing only kindergarten students as study participants was due to the number of years the program has been offered to families residing in Sullivan County, Tennessee. The Sullivan County Imagination Library program was founded in September 2004 (GBBF, 2008b). Many children entering kindergarten in August of 2009 were born in 2004. Depending on the month they were born, children entering kindergarten in August of 2009 are the first group of school-aged children that could have been registered in the program since birth. The majority of 2009 kindergarteners could have been eligible for the program for at least the last 4 years prior to their school entrance. The rationale for determining the impact of the program among kindergarteners who qualify for free and reduced-price school lunch is based on the research literature that indicates low-income families have fewer books in the home. The schools chosen for this study qualify as Title 1 schools. The rationale for determining the impact of the program among boys and girls is based on the research literature indicating a gender gap in reading achievement and beginning literacy acquisition. The rationale for determining the relationship between the reported frequency at which the Imagination Library books were read to the children prior to kindergarten registration and beginning of the year instructional reading levels is based on the literature that indicates a relationship exists between book ownership and frequency of read-aloud sessions on reading achievement.

The total group of interest was all kindergarten students from three rural elementary schools in Sullivan County, Tennessee, which included 187 children. Ninety-

eight boys and 89 girls comprised the total kindergarten class. The total population of kindergarteners who participated in the Imagination Library program was 97 students. The total population of kindergarteners who qualified for free and reduced-price school lunch included 88 students. A random sample of 90 was obtained from the 187 students enrolled at the three schools in August 2009. Students were stratified, using the populations of kindergarten participants, kindergarten nonparticipants, participants who qualified for free and reduced-price school lunch, participants who did not qualify for free and reduced-price school lunch, nonparticipants who qualified for free and reduced-price school lunch, nonparticipants who did not qualify for free and reduced-price school lunch, male participants, and female participants.

The instrument used for determining the reading achievement of kindergarteners was the Scott Foresman Reading Street Baseline Test. The kindergarten reading baseline test results were used in this study because it is a standardized test required of all kindergarten students across the county. Validity was established for this baseline test through item quality, content alignment, and empirical field-testing (Scott Foresman, n.d.). Reliability was established for this baseline test because it was a selected-response instrument including only multiple-choice test items (Scott Foresman, n.d.). A one-way between-groups ANOVA (Kirkpatrick & Feeney, 2007) was used to test the hypothesis that reading achievement for Imagination Library participants will be significantly different from nonparticipants. The rationale for using an ANOVA test is the statistical test will determine whether there is a difference between the groups. A Spearman correlation (Gravetter & Wallnau, 2005), was used to test the hypotheses of a relationship

between the reported frequency of read-aloud sessions with Imagination Library books and reading achievement among kindergarten students as well as a relationship between the length of time in the program and reading achievement. An ANOVA analysis was also used to test the hypotheses of a relationship between reading achievement for male Imagination Library participants and female Imagination Library participants and of a relationship between students eligible for free or reduced-price school lunch and students not eligible for free or reduced-price lunch.

Research Questions

1. What is the effect of providing children birth to age 5 with one free children's book in the mail every month on beginning of the year instructional reading levels of kindergarten participants of the Imagination Library compared to kindergarten students who were not participants of the Imagination Library program?

2. What is the effect of providing children birth to age 5 with one free children's book in the mail every month on beginning of the year instructional reading levels of kindergarten participants of the Imagination Library who qualify for free and reduced-price school lunch compared to kindergarten students that were not participants of the Imagination Library program who qualify for free and reduced-price school lunch?

3. What is the difference in the beginning of the year instructional reading levels of kindergarten male participants of the Imagination Library and beginning of the year instructional reading levels of kindergarten female participants of the Imagination Library?

4. What is the difference in the beginning of the year instructional reading levels of kindergarten male participants of the Imagination Library and beginning of the year instructional reading levels of kindergarten males that were not participants of the Imagination Library?

5. What is the difference in the beginning of the year instructional reading levels of kindergarten female participants of the Imagination Library and beginning of the year instructional reading levels of kindergarten females that were not participants of the Imagination Library?

6. What is the relationship between the reported frequency at which the Imagination Library books were read to the children prior to kindergarten registration and beginning of the year instructional reading levels among kindergarten students who were participants of the Imagination Library?

7. What is the relationship between the length of participation in the Imagination Library program prior to kindergarten registration and beginning of the year instructional reading levels among kindergarten students?

The independent variable is Imagination Library participation and the dependent variable is reading achievement. The independent variable, participation in the Imagination Library program, is defined as registration during the preschool years and beginning anytime from birth to age 5 that provides children with one free children's book in the mail every month. The dependent variable, reading achievement, is defined as performance based on a beginning of the year standardized baseline test that measures instructional reading levels and includes a tiered reading placement.

Null Hypotheses

H_{o1}. There is no significant difference in the beginning of the year instructional reading levels between the control and treatment group.

H_{o2}. There is no significant difference in the beginning of the year instructional reading levels between the control and treatment group who qualify for free and reduced-price school lunch.

H_{o3}. There is no significant difference in the beginning of the year instructional reading levels between the control and treatment group by gender.

H_{o4}. There is no significant difference between beginning of the year instructional reading levels and reported frequency of book readings in the treatment group.

H_{o5}. There is no significant difference between beginning of the year instructional reading levels and length of participation in the treatment group.

Alternative Hypotheses

A_{o1}. The alternative hypothesis for this study states providing children under the age of 5 with one free children's book in the mail every month will significantly impact the beginning of the year instructional reading levels among kindergarten students.

A_{o2}. Providing children under the age of 5 with one free children's book in the mail every month will significantly impact the beginning of the year instructional reading levels among kindergarten students who qualify for free and reduced-price school lunch.

A_{o3}. Providing children under the age of 5 with one free children's book in the mail every month will significantly impact the beginning of the year instructional reading

levels by gender among kindergarten students.

A_{o4}. The reported frequency of reading the Imagination Library books to the children prior to kindergarten registration will significantly impact the beginning of the year instructional reading levels among kindergarten students.

A_{o5}. The length of participation in the Imagination Library program prior to kindergarten registration will significantly impact the beginning of the year instructional reading levels among kindergarten students.

Theoretical Framework

The theoretical basis for this study is Vygotsky's (1978) sociocultural theory. Critical to the theory are the social aspect of learning and the interactions, such as between parent and child. Vygotsky's zone of proximal development (1962) holds that an adult apprentices a child with assistance and scaffolding during the learning process, as is the case during read-aloud episodes, by modeling the reading process (Commission on Reading, 2005; Lesemen & de Jong, 1998; McLane & McNamee, 1990; Smith, 1997). During read-aloud episodes and shared reading encounters throughout the child's life, parents scaffold, or support, the child to increasing levels of independence, as the child gradually begins to read independently (Adams, 1990). Applying Vygotsky's (1978) sociocultural theory to the present study, it is expected that Imagination Library participation during the preschool years will effect reading achievement for kindergarten students because parents will have modeled the reading process for their children by reading aloud the books provided by the program.

Vygotsky's (1978) sociocultural theory has informed the study of language learning because language learning theorists contend that language is learned from a model and often includes a process of scaffolding (Bruner, 1966; Cambourne, 1988; Danahy & Olson, 2003; Gagne, 1965; Huey, 1908; Oser & Baeriswyl, 2001; Piaget & Inhelder, 1969; Russell, 1990; Vygotsky, 1962). The notion that the adult who reads aloud serves as a model and provides the young child with a foundation for acquiring the skills, motivation, and attitude needed to read independently follows the tenets of language learning models (Adams, 1990; McKay, 1981; Schunk & Zimmerman, 2007; Smith, 1997). This has been applied in the cognitive apprenticeship learning model (Collins, Brown, & Newman, 1989) that teaches through modeling, coaching, and scaffolding (Oser & Baeriswyl, 2001). Vygotsky's (1978) learning theory as a social process has also been applied by constructivist theorists, holistic approaches to language acquisition, and research on brain development (Adams, 1990; Brooks & Brooks, 1993; Bruner, 1965; Commission on Reading, 2005; Healy, 2001; Honig, 2004; Smith, 1997; Vygotsky, 1978; Walker, 2002) that supports reading aloud to a child. Further, attachment theorists claim that reading to a child binds the family together, soothing both the parents and the child while adding to the bonding between them (Danahy & Olson, 2003). It is expected that Imagination Library participation during the preschool years will effect reading achievement for kindergarten students based on application of language learning theories to the present study.

Definition of Terms

Baseline test: several subtests comprise the total score on the reading baseline test. The Scott Foresman Reading Street Kindergarten Baseline Test is an assessment of kindergarten children's knowledge of readiness, letter recognition, phonological awareness, listening comprehension, and concepts of print (Scott Foresman, n.d., p. T4). The primary goal of the Kindergarten Baseline Test is to place children in reading groups "that will meet their instructional needs" (Scott Foresman, n.d., p. T19). Reading groups include advanced, on-level, strategic intervention, and a more intensive Early Reading Intervention program (Scott Foresman, n.d.).

Coaching: a literacy coach assists teachers to "deliver skills and content in a manner more suited to helping all students learn" (Koehler, 2008, p. 15).

Economically disadvantaged: including students "who are eligible for free or reduced price lunch" (Ohio Department of Education, 2008).

Emergent literacy: refers to the reading and writing development and literacy learning occurring during the preschool years (Lonigan & Whitehurst, 1998; Teale & Sulzby, 1992).

Imagination Library Participation: registration to receive monthly book mailings is possible until five years of age (GBBF, 2008b).

Instructional reading level: as defined as "the point at which a student is about 90 percent accurate in word identification and has about 75 percent or better comprehension" (Miller, 1993, p. 60).

Intervention: the Scott Foresman Reading Street basal series recommends placing children who score below 60% on the total Baseline Test in a strategic intervention, small-group. Children who score in this tier are provided an instructional plan to meet their needs. The goal is for teachers to intervene by supplementing whole-group instruction with group time that focuses on "more scaffolding, more practice [and] additional support" (Scott Foresman, n.d., p. T20) to improve reading skills at an early age.

Leveled reading: books for differentiated instruction that vary in the degrees of difficulty based on students' instructional reading levels (Scott Foresman, n.d.).

Literate home environment: is generally defined by "participation in literacy-related activities in the home" (Rashid, Morris & Sevcik, 2005).

Modeling: adults are modeling the reading process when they read aloud to children (Danahy & Olson, 2003).

Pull-out: children who score 25% or lower on the total test of the Scott Foresman Baseline Reading test would be pulled-out of the regular classroom for intensive support and intervention in a small-group setting for 30 minutes every day (Scott Foresman, n.d.).

Reading achievement: as described for this study, is the students' performance based on a grade-specific reading baseline test. The standardized baseline test measures students' instructional reading levels and includes a tiered reading placement that provides students in each tier with an instructional plan and leveled reading materials (Scott Foresman, n.d.).

Shared reading: interaction between parent and child during a storybook reading (High/Scope Educational Research Foundation, 2003)

Scaffolding: during "social interaction a knowledgeable participant can create, by means of speech, supportive conditions in which the novice can participate in, and extend, current skills and knowledge to higher levels of competence" (Donato, 1994).

School readiness: children's readiness for school "extends to considering children's competencies-particularly their skills and abilities-at the time of starting school" (Dockett & Perry, 2008, p. 274).

Tier: the Scott Foresman Reading Street basal set recommends placing children in reading groups based on scores from the Baseline Test. Children who score 90% or higher on the total test would be placed in the advanced group, children who score 60-89% on the total test would be placed in the on-level group, and children who score below 60% on the total test would be placed in the strategic intervention group. Additionally, children who score 25% or lower on the total test would receive intensive intervention during a pull-out Early Reading Intervention program (Scott Foresman, n.d.).

Title 1 School: including "schools where at least 40 percent of the children in the school attendance area are from low-income families or at least 40 percent of the student enrollment are from low-income families" (Great Schools, 2008).

Assumptions

Several assumptions underlie this study. It was assumed that participating families engaged in more read-aloud episodes than did families not participating in the program throughout the preschool years, especially low-income families qualifying for free and

reduced-price school lunch. Also assumed was length of time in the program provided families with the opportunities to read more often and engage in more quality read-aloud episodes. Further assumed was that the students performed to the best of their abilities and teachers correctly administered, scored, and analyzed the baseline test.

Limitations

A limitation of the study was the limited timeframe the research was conducted. Also, the study did not control for preschool attendance, an experience that could be a limitation to the study.

Delimitations

This quantitative research exploring the impact of Imagination Library participation on reading achievement occurred between August 2009 and November 2009 at three rural elementary schools in Sullivan County, Tennessee. Participants included kindergarten students enrolled in the fall of 2009.

Significance of the Study

Learning begins in the home (ALA, 2007; Nord, Lennon, Lieu, & Chandler, 1999). Thus, it was significant to explore the impact of an early intervention book-distribution program on reading achievement among kindergarten students at three rural elementary schools in Sullivan County, Tennessee. This quantitative research study is significant to teachers and parents of preschoolers, kindergarteners, and first graders because a summary of the research literature has determined that book ownership and reading aloud to children prior to starting school is related to future success with learning to read. Success in the early grades is indicative of later school success (AFT, 2009a;

Juel, 1988; Invernizzi, Rosemary, Juel, & Richards, 1997; Torgesen, 2004), and early reading difficulties are indicative of later reading difficulty and school failure (ROR, 2008). The study will add to the research literature to determine whether Imagination Library participation impacts reading achievement among kindergarten students at three rural elementary schools in Sullivan County, Tennessee. Study findings can serve to inform educators of the role of the family in regards to emergent literacy acquisition, reading achievement, and future academic performance. Study findings can inform legislators and state department leaders of the role of early reading programs in regards to school readiness. Study findings address social change by exploring the role an effective Imagination Library program could play on the home environment, learning preparedness, emergent literacy skills, reading achievement, and future academic success.

Summary and Transition Statement

The purpose of this quantitative study was to determine the impact of Imagination Library participation on kindergarten reading achievement at three rural elementary schools in Sullivan County, Tennessee. The study used a cross-sectional explanatory design and defined reading achievement by performance based on a kindergarten standardized reading baseline test that measured instructional reading levels and included a tiered reading placement. The study explored the impact of the Imagination Library program on the instructional reading levels of (a) participants compared to nonparticipants, and (b) of participants who qualified for free and reduced-price school lunch compared to students who were not participants who qualified for free and reduced-price school lunch, and (c) among male participants compared to female

participants. The study further explored the relationship between the reported frequency at which the Imagination Library books were read to the children prior to kindergarten registration and reading achievement, as well as the length of participation in the program and reading achievement. A random sample of 90 was obtained from the 180 students enrolled at the three schools in August 2009. An ANOVA was used to test the hypothesis that reading achievement for Imagination Library participants will be significantly different from nonparticipants. A Spearman correlation was used to test the hypothesis of a relationship between the reported frequency of read-aloud sessions and reading achievement among kindergarten students. An ANOVA was also used to test the hypotheses of a relationship between reading achievement for male participants and female participants and of a relationship between students eligible for free or reduced-price school lunch and students not eligible for free or reduced-price lunch. A Spearman correlation was also used to test the hypothesis of a relationship between the length of participation in the program and reading achievement.

Chapter 2, the literature review, will include a history of the Imagination Library program and how reading in the home environment is related to overall reading achievement. Further addressed in the review of literature will be differing reading philosophy and the impact on the home environment, literacy coaching and parental education, achievement gaps, and the role of reading aloud in regards to emergent literacy skills, school readiness, beginning reading acquisition, future reading success, and overall academic achievement. The chapter concludes with a summary of research on effective book-distribution programs and a definition of complimentary learning.

Chapter 3 will provide a detailed explanation of study methodology and data collection. Chapter 4 will present the findings of the study and chapter 5 will include a discussion of study results and the implications for future research.

CHAPTER 2

LITERATURE REVIEW

Introduction

This chapter contains a discussion of research literature relating to the Imagination Library program and student achievement in reading. First presented is an overview and history of the Imagination Library program, including Tennessee's statewide adoption of the program. Second, different reading philosophies are examined. Next, literacy coaching is presented as it relates to the topic of parental education. Then, the crucial role of reading aloud to children is documented, including an analysis of conflicting data presented to parents. The impact of the home environment on reading achievement is further analyzed through research regarding emergent literacy, school readiness, and socioeconomic status. The gender achievement gap is presented regarding beginning reading acquisition and kindergarten reading assessments. Also reviewed in this chapter are the topics of parental training, parental attitudes, and parental reading ability. Finally, the chapter includes a summary of research regarding effective book-distribution programs, and concludes with a definition and discussion of complementary learning.

Imagination Library

The Imagination Library program was created in 1996 by Dolly Parton for the children in her hometown of Sevierville, Tennessee. The program sends a new, hardcover book every month at no cost to the family, regardless of income, for registered children from birth until age 5 (GBBF, 2008a). In 2004, Tennessee Governor Phil Bredesen

established the Books from Birth Foundation to support county Imagination Libraries across the state. Currently all Tennessee counties are participating (GBBF, 2008a). The Books from Birth Foundation pays half of the cost in each county for purchasing and delivering books, leaving county Imagination Library sponsors responsible for $14 per child per year (GBBF, 2008a). There are two county Imagination Library sponsors across the state of Tennessee providing parents with additional resources to supplement the monthly book mailings (GBBF, 2009). As of 2007, 43 states in the United States, 6 Canadian provinces, and communities throughout the United Kingdom participated in the Imagination Library (GBBF, 2008a). There are currently 10 bilingual Imagination Library books (GBBF, 2008a).

In 2003, 821 parents from three sites, one of which was Sevier County Tennessee, responded to a mail survey of parent opinions on how the Imagination Library program impacted the literacy environment, specifically home reading attitudes and practices (High/Scope Educational Research Foundation, 2003). Parent participants responded that they read to their children more frequently and were more aware concerning their children's literacy as a result of participating in the Imagination Library program (High/Scope Educational Research Foundation, 2003). Recommendations for program improvement included a need to recruit and maintain contact with lower income households and "experiment with supporting and reinforcing rich household literacy environments through linkage to community institutions such as libraries, schools, and early education programs such as Head Start and Even Start" (High/Scope Educational Research Foundation, 2003, p. i). The study indicated that future evaluation of the

Imagination Library should include observations in participant homes of reading episodes, and the use of a "strong research design including a baseline measure, a comparison group, longitudinal follow-up and use of a valid child literacy measure" (High/Scope Educational Research Foundation, 2003, p. i).

In 2007, a study conducted by the Tennessee Board of Regents surveyed preschool and kindergarten teachers about their opinions, based on observations, whether participants in the Imagination Library program outperformed nonparticipants (TBR, 2008a; TBR, 2008b). Teacher responses were analyzed using a five-point Likert rating scale (TBR, 2008a; TBR, 2008b), as opposed to actual student achievement scores. Of the approximately 150 prekindergarten teachers that responded to the Internet survey, 64% stated that Imagination Library participants performed better than nonparticipants (TBR, 2008b). Of the approximately 320 kindergarten teachers that responded, 48% stated that participants performed better nonparticipants (TBR, 2008a). Comments from both the prekindergarten and kindergarten teacher respondents in regards to program improvement included recommendations to educate parents concerning their role in their children's reading development; increase advertisement in and partnerships with organizations such as schools, hospitals, pediatrician offices, and libraries; extend the eligibility age; and better meet the needs of families in Tennessee whose primary language is other than English, primarily speakers of Spanish (TBR, 2008a; TBR, 2008b). Teacher respondents specifically inquired whether the program could be supplemented with parental education opportunities and mailings on how to create a literate home environment, how to engage in quality read-aloud sessions, and how to best

take advantage of the free books from the program (TBR, 2008a; TBR, 2008b). Prekindergarten teacher responses included opinions that the Imagination Library promotes literacy for children who do not have books in the home (TBR, 2008b). Prekindergarten teachers reported that not all parents were reading the books to their children (TBR, 2008b), and the remarks from kindergarten teachers included, "It all depends on the participation of the parents . . . if parents do not read the books to their children, then the program may not be entirely effective" (TBR, 2008a, p. 8). Thus, exploring the impact of Imagination Library participation on reading achievement of kindergarten students will contribute to the research literature.

Different Reading Philosophies

Colgan (2002) concluded "there appears to be a consensus of beliefs" (p. 19) among researchers regarding the importance of the home in relation to a student's success in reading, although there is not consensus among researchers regarding how young children learn to read (Stanovich, 2000). As a result, there is debate over the most appropriate method for teaching young children how to read (Adams, 1990; Gagne, 1965), fueling our "nation's recurring reading wars" (AFT, 2007, p. 4). Some authorities argue children naturally learn to read by being read to (Healy, 2001), even though there continues to be debate over whether reading is a natural process (National Association for the Education of Young Children [NAEYC], 1998; Smith, 1997). While there is support for the claim that learning to read is a natural process (Healy, 2001; Huey, 1908; Levine, 2002; McLane & McNamee, 1990), Stanovich (2000) argued against those who claim language acquisition beginning in the home is a natural process and related to early

reading and defends analytic, rather than holistic approaches to language acquisition and beginning reading instruction. Additionally, there may be "a substantial gap between research on reading and teacher preparation in reading" (Spear-Swerling, Brucker, Owen, & Alfano, 2005, p. 266) and "research does not appear to be reaching teachers, whose knowledge is essential for scientific findings about reading to benefit children" (Spear-Swerling, 2007, p. 301). Therefore, a teacher's literacy philosophy and practice may be reflected in their interpretation of professional development (Deal & White, 2006), and quality professional development can impact literacy philosophy (Deal & White, 2006; Ullery, 1993). Such debate in the school and in reading research literature regarding reading pedagogy, instructional practices (Fox, 2001; International Reading Association [IRA], 2007; McCormick & Mason, 1992; Smith, 1998; Strickland, 2002), and reading instruction (Stanovich, 2000) has a direct effect on the home environment because the culture of a school along with the literacy philosophy of prekindergarten and kindergarten teachers can influence parental attitudes and practices in creating and sustaining a literate home environment. Importantly, instructional questions (Oser & Baeriswyl, 2001) dealing with how a school teaches reading affects not only the role of literacy teachers but also the home environment when educators do not agree on issues involving reading (Fox, 2001; IRA, 2007; McCormick & Mason, 1992; Stanovich, 2000). When reading philosophy divides teachers, parents are caught in the middle and left unsure of how to help at home. Stanovich (2000) contended "the primary casualties of the Reading Wars are disadvantaged children who are not immersed in a literate environment" (p. 363). Thus, social change is addressed in this study by exploring the role an early intervention

book-distribution program plays on beginning of the year instructional reading levels among kindergarten students, and results may provide a correlation between the home environment and future academic success.

Literacy Coaching and Parental Education

Literacy coaching is an example of appropriate professional development that uses modeling and observation, reflection, inquiry, and collegial dialogue (Mills, 2003) to improve classroom reading instruction and student achievement in reading (Whitfield & Moore, 2007). Literacy coaching has the potential to impact not only teacher and student learning, but parental learning as well. Literacy coaches can educate parents of infants and preschoolers in the community about their role in their children's reading education at home (Cullinan, 1992; Durkin, 1972; Fox, 2001; Honig, 1993; Huey, 1908; Manning, Manning, & Cody, 1988; McKay, 1981; Miller, 1995; Phillips, 1997; Rasinski & Fredericks, 1990; Schweiker, 1994; Smith & Johnson, 1976). Research iterates "the relationship of schools to parents has probably been the most problematic area" (Lambert, 2002, p. 82). The Tennessee Teacher Professional Development Questionnaire cited "training in how to work more effectively with parents [as one of the] attributes of high quality professional development" (Tennessee Teacher Professional Development Questionnaire, 2008). Thus, increased efforts are needed to improve dialogue and form stronger partnerships with parents to help them learn about creating literate home environments (Smith, 1990).

There is an abundant amount of literature supporting (a) collegial interaction (Boushey & Moser, 2006; Dantonio, 2001) and appropriate models of teacher

development such as literacy coaching (Freese, 2006; Whitfield & Moore, 2007), and (b) parental education (Manning, Manning, & Cody, 1988; McCormick & Mason, 1992; Miller, 1995; Throssell & Campell, 1993; Ullery, 1992). However, there is not a vast amount of literature merging these topics to highlight professional development in the area of reading instruction regarding parental education and training (Champagne & Goldman, 1971; Ullery, 1993). There is literature addressing ways educators teach parents a particular strategy or program (Arnold, 2005; Blom-Hoffman, O'Neil-Pirozzi, & Cutting, 2006) and studies researching the impact of parental training on the home environment and student success (Manning, Manning, & Cody, 1988; McCormick & Mason, 1992; Miller, 1995; Throssell & Campell, 1993; Ullery, 1992), but less concerning specific professional development opportunities for teachers to learn how to work more effectively with parents in the area of reading.

The research literature iterated the need for educators to take leadership roles outside of school walls to educate families in safe and nontraditional settings (Miller, 1995; Schweiker, 1994; Ullery, 1992). Literacy leaders in the community have a challenge to meet needs in "new and unfamiliar ways" (Ullery, 1992, p. 35), especially for low-income parents, because it is imperative to increase parents' knowledge on the crucial role of reading aloud to children (AFT, 2007). A significant relationship exists between the frequency of read-aloud episodes in the home and reading achievement (Bus et al., 1995). However, not only important is the frequency of read-aloud episodes, but also the quality of read-aloud episodes, also referred to as shared reading (High/Scope, 2003). Arnold (2005) argued, "How we read to children is every bit as important as how

often we read to them" (p. 31). A "literacy leader" (Whitfield & Moore, 2007, p. 272) can educate the parents of young children in the community (Kubis, 1994; Lambert, 2002; Strang, 1969; Ullery, 1992) and can be a resource to parents providing them access to information (Throssell & Campbell, 1993). Specifically, it is necessary for parents of young children not yet in school and children in school to learn an appropriate definition of reading aloud that involves more than just reading aloud the words of a book. Parents need training that a reading-aloud episode should contain the following elements:

1. An adult should discuss the pictures and the meaning of the text, especially with infants and young children (Lewis, 2005; "Literacy Development," 2006). When reading to a baby, objects in the book should be named and described, and it would be acceptable to tell a story from the pictures rather than reading the exact text.

2. Repeated readings are critical because it is very important for babies and young children to hear the same story repeatedly (Honig, 2004; Lewis, 2005; "Sharing Books with Your Baby," 2007).

3. An adult must help even the youngest child make personal connections with the story (Blake, Macdonald, Bayrami, Agosta, & Milian, 2006; Danahy & Olson, 2003; Levine, 2002; Lewis, 2005; NAEYC, 1998; "Reading Tips," 2007) by explaining how the book relates in some way with the baby, infant, or young child in discussions before, during, and after the story readings.

4. Asking questions, both objective and subjective, during the book reading is effective and desirable to increase vocabulary, comprehension, and later reading ability,

(Arnold, 2005; Blake et al., 2006; Danahy & Olson, 2003; NAEYC, 1998), even with infants if for no other reason than to begin such reading habits for later childhood. Besides needing an accurate definition of reading aloud, parents need training concerning read-aloud material. It is paramount for those in the home environment to read aloud stories, songs, nursery rhymes, and poems that contain pattern, predictability, repetition, and rhyme (Adams, 1990; Cullinan, 1992; Fox, 2001; Healy, 2001; Huey, 1908; NAEYC, 1998; Ryan, 2000; "Sharing Books with Your Baby," 2007; Smith, 1997; Teale, 1981). Reading aloud can calm, soothe, and comfort a baby or young child while also creating positive associations with books (Danahy & Olson, 2003). Although materials that contain such elements as rhythm and rhyme are necessary for young children, it is important to note when reading to "prenatal and newborn babies" the primary focus should be on the baby hearing a soothing voice, not about appropriate text (Danahy & Olson, 2003, p. 42). Thus, prenatal read-aloud text should be uplifting for the expectant mother (Danahy & Olson, 2003).

Reading Aloud

A significant relationship exists between reading aloud to a child and future reading success (Adams, 1990; Dickenson & Neuman, 2006; Healy, 2001; "Literacy Development," 2006; Page Ahead, 2007a; "Sharing Books with Your Baby," 2007). Researchers alike iterate that "the single most important activity for building these understandings and skills essential for reading success appears to be reading aloud to children" (NAEYC, 1998, p. 3), a sentiment uttered more than a century ago (Huey, 1908). Teale (1981) claimed the topic of reading to young children is "one issue the

various camps in the field are in virtually unanimous agreement" (p. 902), and the importance of reading aloud has "been established, not only in this country, but in other countries as well" (Manning, Manning, & Cody, 1988, p. 56). Currently, most parental education materials instruct parents to immerse their children in a literate environment from birth, making story reading a daily routine (Bickart & Dodge, 2000; Butler, 1998; Fox, 2001; "I Am Your Child," 2000; Lamme, 1980; Lawhon & Cobb, 2002; Miller, 1998; National Council of Teachers of English [NCTE], 2002; "Sharing Books with Babies," 2002; "Tips for Reading," 2007). Likewise, research findings validate the importance of home literacy experiences prior to starting school, including reading aloud to children from birth (AFT, 2007; Danahy & Olson, 2003; Dickenson & Neuman, 2006; Ginnetti, 1989; Healy, 2001; Honig, 2007; Lewis, 2005; "Literacy Development," 2006; NAEYC, 1998; Ryan, 2000). However, parents remain unaware and uninformed regarding the benefits and importance of reading aloud (Ullery, 1992) because parents are "besieged by conflicting advice" (Healy, 2001, p. 228). Parenting education materials do not present uniform recommendations on when and how to create a literate home environment (Healy, 2001; Huey, 1908; Staiger & Sohn, 1967). Some authorities recommend reading to children beginning at six months ("Reading to Infants Stimulates," 2005), even though many authors and studies stress an importance for parents to begin reading aloud to babies immediately (Cullinan, 1992; Fox, 2001). Furthermore, an article appearing in a parenting education magazine included an argument against informing all parents to read with their babies (Hoffman, 2004). The importance of reading aloud to infants is supported in the research (Commission on Reading, 2005; Conrad, 2004;

Lamme, 1986; Lewis, 2005; Miller, 1998; NAEYC, 1998; NCTE, 2002; Resnick, 1987; Russell, 1990; Ryan, 2000; Smith, 1997; Straub, 1999). However, there is little empirical evidence concerning the validity of reading to the unborn child (Obuch-Kent, 1989; Plowcha, 1989), though some advocate reading to both the unborn child and to a newborn (Danahy & Olson, 2003; Lawhon & Cobb, 2002). In addition to questions pertaining to the appropriate age to begin reading aloud, there is not consensus regarding how often those in the home environment should read aloud (Fox, 2001; Healy, 2001; NCTE, 2002; Vaags-Nyhof, 2004). Thus, although books and articles have been written to parents on the benefits of reading aloud to young children, there is a need for further study concerning the topic of reading aloud, and families need extensive training and support to create a stimulating and meaningful home reading environment (NCTE, 2002), because reading aloud to children prior to school entrance prepares children for beginning literacy related tasks and assessments (Juel, 1988).

Home Environment

Gagne (1965) stated, "The factors that influence growth are to a very large extent genetically determined, whereas the factors that influence learning are chiefly determined by events in the individual's living environment" (p. 3). Researchers continue to indicate similar conclusions, such as, "genetic influences on the association between early language and later reading performance are moderate in effect size, whereas shared environmental influences are substantial" (Harlaar, Hayiou-Thomas, Dale, & Plomin, 2008, p. 699). Many iterate the importance of the home in providing early home literacy experiences that will foster later success with learning to read and claim the absence of

such an early literacy environment can negatively affect later reading development (Adams, 1990; Strickland, 2002). Children entering school who have not been immersed in a literate home environment are most at-risk for reading failure (AFT, 2007) because "literacy learning begins in the home" (Lewis, 2005, p. 24). Vygotsky (1962) argued, "Instruction, after all, does not begin in school" (p. 117). Research literature indicates living in a print-rich environment and being read to prior to school entrance is related to beginning literacy acquisition and future reading success (ROR, 2008). A literate home environment contributes to the development of language and literacy (Beals & De Temple, 1993), plays a direct role in children's readiness for school (Mashburn & Pianta, 2006), and impacts kindergarten literacy achievement (Dickinson & Tabors, 1991). Book ownership and the frequency of read-aloud episodes are positively related to reading readiness (Miller, 1980) and early literacy success (Paratore, 2002). Appropriate literary experiences in the home during the prekindergarten years can affect children's interest and motivation in books and reading (Miller, 1980). Thus, many authors cite read-aloud episodes as one of the most critical aspects of a literate home environment (Bus, Belsky, van Ijzendoorn, & Crnic, 1997). However, factors other than read-aloud episodes, such as the number of books in the home and public library usage, have also been reported as impacting literacy in the home environment and future success with beginning reading (Lee & Brukham, 2002; Payne, Whitehurst, & Angell, 1994).

Parental Attitudes and Reading Ability

Researchers claim homes in which there are adults that read, regardless of their incomes, produce children that read and being read to and having books in the home

positively correlate with later academic success (Ginnetti, 1989; Honig, 2007). Unfortunately, adult reading habits and overall book buying have declined over the past 20 years regardless of gender, age, ethnicity, or education level (National Endowment for the Arts, 2004). Research indicates parents who were not read to as children are less likely to read to their own children (ROR, 2008), and Manning, Manning, & Cody (1988) found that most families who create a literate home environment "like to read and remember being read to as children" (p. 58). Further, low-income and minority children are more at-risk for reading failure when their parents have low literacy skills (AFT, 2007). Consequently, parents do not place enough value on reading aloud to young children (Manning et al., 1988). Specifically, fathers need to invest more time modeling reading by reading aloud to their children (Manning et al., 1988; Trelease, 1995). When parents provide a stimulating home environment and respond to a child's questions, model reading and writing, and read aloud to young children, they are supporting their children's language acquisition and literacy development (Ruiz-Gomez, 1984). Parents are not only unaware of the importance of reading aloud but also may be unable to create a literate environment without support, because "20% of U.S. workers are functionally illiterate" (ROR, 2008). Our current society is not a reading culture, and parents must self-assess because they are their child's first teacher (M. Olson, personal communication, November 18, 2008). In 1998, 16% of parents of children birth to age 3 reported not reading at all with their children, 23% read only once or twice a week, and 39% read on a daily basis (Young, Davis, Schoen, & Parker, 1998). In 2003, the national average was 48% of parents that reported reading daily to children birth to age 5

(National Center for Health Statistics, 2003). In 2008, the statistic remains below 50% of parents that report reading to their young children daily (ROR, 2008).

Emergent Literacy and School Readiness

Learning theorists iterate reading and writing skills develop, or emerge, in the preschool years prior to formal education (Lonigan & Whitehurst, 1998; Teale & Sulzby, 1992). In regards to this reading and writing development and learning, Teale and Sulzby explained, "We are now 'seeing' reading in toddlers' explorations with picture books and 'seeing' writing in their scribbles" (p. viii). Similarly discussed, emergent literacy is a perspective on literacy learning that focuses on the importance of early experiences that are supportive of traditional reading and writing skills (Lonigan & Whitehurst, 1998). Researching early literacy draws on reading research and research in early childhood education (Dickinson & McCabe, 2001), and the "result of this research has been the investigation of the emergence of literacy, and environmental factors that support its emergence" (Dickinson & McCabe, 2001, p. 186). Therefore, the concept of emergent literacy supports early intervention programs that target to assist children prior to formal school learning (High/Scope Educational Research Foundation, 2003), because emergent literacy impacts the development of later reading ability (Dickinson & Tabors, 2001). Specifically, read-aloud episodes support language, emergent literacy, and later reading achievement (Bus, van Ijzendoorn, & Pelligrini, 1995; Dickinson & McCabe, 2001).

There is not a consensus in the research literature regarding a definition for school readiness (Dockett & Perry, 2008; Snow, 2006). The term *readiness* is sometimes discussed "in terms of children's competencies when they enter school, such as their

academic and cognitive skills, language and literacy abilities, and social-emotional functioning" (Mashburn & Pianta, 2006, p. 152). Some definitions of school readiness include the importance of building relationships among stakeholders to help children successfully start school (Dockett & Perry, 2008). Included in such a definition, school readiness can be viewed as birth to age 5, and "is best understood as an interaction between the development status and the numerous elements of a child's environment" (Snow, 2006, p. 30). As a result of differing views, states do not agree on what constitutes readiness, and various assessments are used to measure readiness (Dockett & Perry, 2008; Snow, 2006). However, regardless of the definition of and testing for readiness, "children's skills at school entry are highly correlated with later skills, especially in literacy domains. Therefore, to improve educational outcomes downstream, one must enhance children's preparation for school in the early years" (Snow, 2006, p. 8). As documented in the research literature, the home environment is directly related to emergent literacy skills and school readiness.

Achievement Gaps

More than 10 million children live in poverty (Boyd-Zaharias & Pate-Bain, 2008; Lynch, 2004) and there are differences in the home environment by social class (Adams, 1990; McCormick & Mason, 1992: Neuman, 1999). According to Dickinson and McCabe (2001):

> The investigation of early literacy has resulted in findings of considerable importance for social policy because it made evident that, even before children commence formal instruction in reading and writing, they display differences that mirror some of the divisions in our society, with children from less economically advantaged and non-English speaking homes being at a disadvantage. (p. 186)

Research indicates these children are often outperformed in reading by their more affluent peers (Au 2002; Boyd-Zaharias & Pate-Bain, 2008) and "are at a disadvantage before school begins" (ROR, 2008, p. 2). Children living in poverty, non-English speaking families, and minorities are at-risk for reading difficulties, and possibly reading failure (AFT, 2007; ROR, 2008) because they enter kindergarten with fewer literacy experiences (Juel, 1988) than their middle-class peers and are three times more likely to score in the "bottom quartile" on beginning of the year kindergarten reading assessments (Cortese, 2007). Specifically, families living in poverty have fewer books in the home, and are less likely to purchase new books and use the services of a public library (Page Ahead, 2007a; ROR, 2008). The percentage of children birth to age 5 read to daily among high-income families is 59%, as opposed to 36% for low-income families (National Center for Health Statistics, 2003). Consequently, children living in poverty have heard 20 to 30 million fewer words by the ages of 3 to 4 than children not living in poverty (AFT, 2009b; ROR, 2008), and continue to score well below their peers throughout elementary school on standardized reading assessments (Cortese, 2007).

As documented in this research of literature, a higher percentage of low-income families are at-risk for reading difficulties (Strickland, 2002). However, this is not always the case (Adams, 1990). Important to note is that:

> Although low SES status is associated with fewer literacy experiences, it is important to remember that in several large and nationally representative studies, SES was only a moderate to weak correlate with reading outcomes- and in several cases the home literacy environment was a stronger correlate. Low SES is a marker for low literacy achievement, but is not in and of itself a cause of low literacy achievement. (High/Scope, 2003, p. 5)

Children from high socioeconomic families can perform below grade level in reading, "indicating that reading difficulty is a national problem that extends across all socioeconomic strata" (AFT, 2007, p. 4). Thus, exploring the role an early intervention book-distribution program plays on beginning of the year instructional reading levels among kindergarten students can inform community stakeholders of the role early reading programs play in regards to school readiness and reading achievement.

In addition to the achievement gap by social class, a gender achievement gap in reading and beginning literacy acquisition between boys and girls is evident, particularly in the early years, as indicated by performance on beginning school assessments (National Education Association [NEA], 2009). Throughout school, females outperform males on standardized reading achievement tests (Ashby, 2005; Brozo, 2006; Gates, 1961; Grigg, Daane, Ying, & Campell, 2003; Louie & Ehrlich, 2008; NCES, 2004). Such disparity between reading scores by gender was evidenced more than 50 years ago, and boys continue to require more specialized reading assistance than girls (Brozo, 2006). Specifically, research iterates males are more likely to be retained than females (Ashby, 2005; NCES, 2004).

Book-Distribution Programs

Research suggests that providing children, especially children from low-income families, with books to read at home can stimulate a child's interest in reading and promote readiness and beginning literacy development (McCormick & Mason, 1986). There are several book-distribution programs, and "participation in book immersion programs has successfully improved home literacy practices as well as child language

and emergent literacy outcomes" (High/Scope Educational Research Foundation, 2003, p. 11). For the purpose of this literature review, only book-distribution programs that provided the parents with books prior to school entry were included. Programs providing books to organizations such as elementary schools, preschools, and daycares were not included in this review of literature. Further, of the book-distribution programs cited, only the Reach and Read (ROR) program has been empirically researched.

Founded in 1966, Reading is Fundamental (RIF) provides free books to children from birth to age 8 with 19,000 locations across all 50 states (RIF, 2008). There are 62 RIF programs operating in 323 locations across the state of Tennessee, serving approximately 107,000 children (RIF, 2007a; RIF, 2007b). Founded in 1990, the program titled Books for Kids, now called Page Ahead, provides free books to children from low-income families across Washington State (Page Ahead, 2007a). Page Ahead serves children from birth to age 12 who perform below grade level in reading, or whose families receive free lunch, report an income that falls below the federal poverty level, or receive English language services (Page Ahead, 2007c). The program provides up to five free books per year, per child during family literacy events to encourage parents to read with their children (Page Ahead 2007b). Founded in 2001, Raising Readers is a program in Maine that provides children birth to age 5 with free books during well-baby visits regardless of family income (Raising Readers, 2009). The previously mentioned programs are similar to the Reach out and Read (ROR) program.

Founded in 1989, Reach out and Read (ROR) is a national program that provides children between the ages of 6 months and 5 years with free books during well child

visits (ROR, 2009). At participating offices, doctors encourage parents to read aloud to their children and volunteer readers in the waiting rooms model for parents how to read aloud and explain the importance of reading aloud with their children (ROR, 2009). The cost of the ROR program is $40 dollars per child and will provide participating children with ten books (ROR, 2008). The program is operating at approximately 3,800 pediatric sites nationwide, "serving more than 25% of the children living at or near poverty in our country" (ROR, 2008, p. 4). Findings from 11 research studies indicate positive program effects; specifically, participating homes are more likely to engage in reading-aloud episodes and have more books in the home as compared to nonparticipants, and participating children outscored nonparticipants on tests of vocabulary (ROR, 2008, p. 3). A longitudinal study demonstrated that by receiving books and modeling of appropriate read-aloud sessions, participants read more to their children than did families who had received encouragement to read aloud with their children during doctor visits, but no books or modeling (Jones, Franco, Metcalf, Popp, Staggs, & Thomas, 2000). Further, research studies demonstrated such results when exploring the impact of the program on parent behaviors and child language development of children from low-income families (High, LaGasse, Becker, Ahlgren, & Gardner, 2000).

Parental Training and Complementary Learning

Parent education programs can make a meaningful difference in the life of a child, because the "process of learning to read is a lengthy one that begins very early in life" (Snow, Burns, & Griffin, 1998, ¶20). According to Snow et al.:

> Reducing the number of children who enter school with inadequate literacy-related knowledge and skill is an important primary step toward preventing reading

> difficulties. Although not a panacea, this would serve to reduce considerably the magnitude of the problem currently facing schools. Children who are particularly likely to have difficulty with learning to read in the primary grades are those who begin school with less [literacy knowledge and experiences]. (¶15)

Many researchers conclude the need for increased parent education in developing a home literacy environment (Commission on Reading, 2005; Danahy & Olson, 2003; Healy, 2001; Karrass & Braungart-Rieker, 2005; Lynch, 2004; McCormick & Mason, 1992; NCTE, 2002; Snow et al., 1998; Throssell & Campbell, 1993; Ullery, 1993; Young, Davis, Schoen, & Parker, 1998), and results indicate parents can benefit from training on how and why to read aloud in the home (Boals, 1995; Lautenschlager & Hertz, 1984; Lovingood, 1980; Manning, Manning, & Cody, 1988; McCormick & Mason, 1992; Miller, 1995; Minkovitz et al., 2003; Ullery, 1992). Specifically:

> Reading aloud is not only one of the best activities to stimulate language and cognitive skills; it also builds motivation, curiosity, and memory. Giving parents the information and the tools-beautiful, appealing children's books-to make reading aloud a daily activity enables parents to better prepare their children to succeed in school. (ROR, 2008, p. 3)

Parental education programs can increase the frequency of read-aloud episodes in the home because as families are provided with information on how to read aloud, they are more likely to provide home literacy experiences (Manning, Manning, & Cody, 1988; Miller 1980). Studies confirm parental attitudes and practices can be shaped by training and intervention (Snow, Burns, & Griffin, 1998; Minkovitz et al., 2003). Researchers claim early intervention and training can increase parental awareness and motivation concerning reading aloud in the home thereby increasing the potential for a child's future academic success (Manning et al., 1988). The only opposing literature to the importance of the home environment and parental education are theories from the beginning of the

20th century (Durkin, 1972; Teale & Sulzby, 1992) that have since been disproved (Bruner, 1960; Colgan, 2002; Cullinan, 1992; Fox, 2001; Kubis, 1994; Manning et al., 1988; Miller, 1995; Phillips, 1997; Teale, 1981; Throssell & Campbell, 1993; Ullery, 1992). Reports indicate early intervention impacts future readiness for beginning reading instruction (Commission on Reading, 2005; Conrad, 2004; Danahy & Olson, 2003; Healy, 2001; Karrass & Braungart-Rieker, 2005; Lewis, 2005; NCTE, 2002), increases student achievement in reading (Miller, 1995), and produces later school success (Ullery, 1992). Moreover, researchers iterate low-income parents can successfully create a literate home environment and claim that most parents, given the proper guidance, want to help their children succeed (Ullery, 1992).

Many federal and state initiatives aim to improve a child's readiness for school (Snow, 2006). Building on positive research results of parental training programs, complementary learning is a holistic approach that unites school and nonschool agencies to help children succeed (Harvard Family Research Project, 2008). Complementary learning provides families with a support system from birth, and can be especially beneficial for low-income families (Harvard Family Research Project, 2008). Research findings illustrate the need for families to receive support prior to starting school (Dockett & Perry, 2008), and the importance of a network of relationships and access to resources is iterated in the research literature (Dockett & Perry, 2008; Mashburn & Pianta, 2006; Snow, 2006). Dockett and Perry (2008) contended:

> Starting school is a time of transition for children, families, educators, and communities. The relationships that exist among these stakeholders will largely determine the effectiveness of children's engagement with compulsory education. Transition to school programs and practices that facilitate engagement with

> communities have the potential to contribute to children's school success, as well as to the strengthening of the local community. (p. 279)

In such a model, "The child is considered a dynamic system that is developing within multiple contexts, and developmental outcomes are the consequences of linkages" (Mashburn & Pianta, 2006, p. 158). Thus, the relationship of stakeholders in the home and community, along with local, state, and national agencies on a child's readiness for school are documented in the research literature (Mashburn & Pianta, 2006).

Summary and Conclusion

The Imagination Library is an early intervention book-distribution program that provides registered children from birth to age 5 with a new book every month in the mail at no cost to the family. Only a limited amount of research has been conducted in Tennessee concerning the Imagination Library, and there is currently no research using actual student achievement scores determining the effectiveness of the program and the reading performance of school-aged Imagination Library participants compared to nonparticipants. The literature reports a significant relationship exists between early home literacy experiences, such as the availability of books and frequency of read-aloud sessions, and reading achievement. This chapter examined how the reading wars and conflicting data to parents impact those in the home environment, and implications for literacy coaching on the home are discussed. The importance of the home environment on reading achievement is analyzed through discussions of emergent literacy, school readiness, parental attitudes, parental reading ability, socioeconomic status, and the gender achievement gap. This chapter included research results regarding parental training programs and the effectiveness of book-distribution programs, with implications

for a model of complimentary learning for positive school transitions and readiness. This study is important because the impact of the Imagination Library program on reading achievement was explored among kindergarten students.

Chapter 3 will provide a detailed explanation of study methodology and data collection. Chapter 4 will present the findings of the study to determine whether Imagination Library participation impacted reading achievement for kindergarten students from three schools in northeastern Tennessee. Chapter 5 will include a discussion of study results and the implications for future research.

CHAPTER 3

DESIGN AND METHODOLOGY

Introduction

The purpose of this cross-sectional explanatory study was to test the theory of Imagination Library effectiveness that compares Imagination Library participation to reading achievement, for kindergarten students from three rural elementary schools in Sullivan County, Tennessee. The independent variable, Imagination Library participation, is defined as registration during the preschool years and beginning anytime during the ages of birth to 5 that provides children with one free children's book in the mail every month. The dependent variable, reading achievement, is defined as performance based on a beginning of the year standardized baseline test that measures instructional reading levels and includes a tiered reading placement. This study explored the following research questions:

1. What is the effect of providing children birth to age 5 with one free children's book in the mail every month on beginning of the year instructional reading levels of kindergarten participants of the Imagination Library compared to kindergarten students who were not participants of the Imagination Library program?

2. What is the effect of providing children birth to age 5 with one free children's book in the mail every month on beginning of the year instructional reading levels of kindergarten participants of the Imagination Library who qualify for free and reduced-price school lunch compared to kindergarten students that were not participants of the Imagination Library program who qualify for free and reduced-price school lunch?

3. What is the difference in the beginning of the year instructional reading levels of kindergarten male participants of the Imagination Library and beginning of the year instructional reading levels of kindergarten female participants of the Imagination Library?

4. What is the difference in the beginning of the year instructional reading levels of kindergarten male participants of the Imagination Library and beginning of the year instructional reading levels of kindergarten males that were not participants of the Imagination Library?

5. What is the difference in the beginning of the year instructional reading levels of kindergarten female participants of the Imagination Library and beginning of the year instructional reading levels of kindergarten females that were not participants of the Imagination Library?

6. What is the relationship between the reported frequency at which the Imagination Library books were read to the children prior to kindergarten registration and beginning of the year instructional reading levels among kindergarten students who were participants of the Imagination Library?

7. What is the relationship between the length of participation in the Imagination Library program prior to kindergarten registration and beginning of the year instructional reading levels among kindergarten students?

This chapter describes the research design and rationale, methodology, sampling, reliability and validity for the data collection instrument, independent and dependent

variables, data collection procedures, data analysis plan, statistical tests, threats to validity, and ethical issues regarding the research study.

Design

This quantitative study used a cross-sectional, explanatory design to explore whether or to what extent providing children birth to age 5 with one free children's book in the mail every month and whether the reported frequency of read-aloud sessions with Imagination Library books impacts reading achievement among kindergarten students from three rural elementary schools in Sullivan County, Tennessee. The rationale for choosing a cross-sectional, explanatory design was because the focus of the study was to "evaluate mean differences" (Gravetter & Wallnau, 2005) between groups of kindergarten students based on Imagination Library participation, free and reduced-price school lunch, gender, reported frequency of Imagination Library read-aloud sessions, and the length of participation in the program. This study explored the reading performance of school-aged Imagination Library participants compared to nonparticipants. A quantitative method of analysis chosen was based on the lack of research conducted on the Imagination Library program and the need for concrete evidence using student achievement scores in determining the effectiveness of the program. This study could not use a repeated measures design because it would not be possible to give young children a standardized reading pretest before registering for the Imagination Library program during the ages of birth to 5 that could be compared to their kindergarten reading achievement baseline test. The null hypotheses were:

H_{o1}. There is no significant difference in the beginning of the year instructional reading levels between the control and treatment group.

H_{o2}. There is no significant difference in the beginning of the year instructional reading levels between the control and treatment group who qualify for free and reduced-price school lunch.

H_{o3}. There is no significant difference in the beginning of the year instructional reading levels between the control and treatment group by gender.

H_{o4}. There is no significant difference between beginning of the year instructional reading levels and reported frequency of book readings in the treatment group.

H_{o5}. There is no significant difference between beginning of the year instructional reading levels and length of participation in the treatment group.

The alternative hypotheses were:

A_{o1}. The alternative hypothesis for this study states providing children under the age of 5 with one free children's book in the mail every month will significantly impact the beginning of the year instructional reading levels among kindergarten students.

A_{o2}. Providing children under the age of 5 with one free children's book in the mail every month will significantly impact the beginning of the year instructional reading levels among kindergarten students who qualify for free and reduced-price school lunch.

A_{o3}. Providing children under the age of 5 with one free children's book in the mail every month will significantly impact the beginning of the year instructional reading levels by gender among kindergarten students.

A_{o4}. The reported frequency of reading the Imagination Library books to the children prior to kindergarten registration will significantly impact the beginning of the year instructional reading levels among kindergarten students.

A_{o5}. The length of participation in the Imagination Library program prior to kindergarten registration will significantly impact the beginning of the year instructional reading levels among kindergarten students.

Methodology

The group of interest was all kindergarten students from three rural elementary schools in Sullivan County, Tennessee, which included 187 children. The schools are from the same demographic area within 10 miles of each other, and have a similar population of students including gender, ethnicity, and socioeconomic status. The three schools reported school wide, standardized reading proficiency scores of 84.8%, 92.6%, and 94.7%, and have comparable student per teacher ratios (State Education Data Center, 2009). Ninety-eight boys and 89 girls comprised the total kindergarten class. The total population of kindergarteners who participated in the Imagination Library program was 97 students. The total population of kindergarteners who qualified for free and reduced-price school lunch included 88 students.

A random sample of 90 was obtained from the 187 students enrolled at the three schools in August 2009 (see Appendix A for a stratified summary). Random selection from three Sullivan County schools increased external validity, because this study could not employ random assignment of students as Imagination Library participants or nonparticipants. Forty-five students were randomly selected from the participant pool and

45 students were randomly selected from the nonparticipant pool. Students were stratified, using the populations of kindergarten participants, kindergarten nonparticipants, participants who qualified for free and reduced-price school lunch, participants who did not qualify for free and reduced-price school lunch, nonparticipants who qualified for free and reduced-price school lunch, nonparticipants who did not qualify for free and reduced-price school lunch, male participants, and female participants. Personal information was kept confidential. Each kindergarten teacher created an alphabetical list of students, including an assigned number rather than names. A random numbers table was used to obtain the 90 kindergarten students. A sample size of 90 was chosen because the alpha was set at .05 with a moderate effect size of .30 (Gravetter & Wallnau, 2005). The sample of 90 provided a power estimate of .80 (Gravetter & Wallnau, 2005). Or, stated differently, a sample size of 90 will give an 80% chance of rejecting the null hypotheses when they should be rejected. The goal was to obtain 30 or more kindergarten students and approximately equal numbers within each of the stratified groups, because of normality and equal variances (R. Richichi, personal communication, February 25, 2009).

The instrument used for determining the reading achievement of kindergarten students was the Scott Foresman Reading Street Baseline Test. The kindergarten reading baseline test results were used in this study because it is a standardized test required of all kindergarten students across the county. Validity was established for this baseline test through item quality, content alignment, and empirical field-testing (Scott Foresman, n.d.). Reliability was established for this baseline test because it was a selected-response

instrument including only multiple-choice test items (Scott Foresman, n.d.). The Scott Foresman Reading Street Kindergarten Baseline Test was comprised of several subtests and assessed kindergarten children's knowledge of readiness, letter recognition, phonological awareness, listening comprehension, and concepts of print (Scott Foresman, n.d., p. T4). The total baseline test score measured instructional reading levels and included a tiered reading placement. Kindergarten children were placed in reading groups based on their score on the total baseline test. Children who scored 90% or higher were placed in the advanced group, children who scored 60-89% were placed in the on-level group, and children who scored below 60% were placed in the strategic intervention group. Additionally, children who scored 25% or lower were pulled out of the regular classroom for support in a small-group setting for 30 minutes every day to receive intensive intervention. Archival data was gathered from a questionnaire administered in March of 2009 during kindergarten registration at the chosen elementary schools, and was needed to determine the reported frequency of read-aloud sessions with Imagination Library books and the length of participation in the program.

The dependent variable, reading achievement, is defined as performance based on a beginning of the year standardized baseline test that measures instructional reading levels and includes a tiered reading placement. The independent variable, participation in the Imagination Library program, is defined as registration during the preschool years and beginning anytime from birth to age 5 that provides children with one free children's book in the mail every month. Gender and lunch status are also independent variables in the study. The groups of Imagination Library participation and nonparticipation, male

and female, and free and reduced-price school lunch are categorical independent variables (R. Richichi, personal communication, February 25, 2009).

The baseline test was administered by the kindergarten teachers to all kindergarten students in each homeroom class by the third week of August 2009. Each kindergarten teacher recorded student baseline test scores on a list using assigned numbers rather than names. The list detailed gender, free and reduced-price school lunch status, Imagination Library participation, the reported frequency of read-aloud sessions with Imagination Library books, and the length of participation in the program. The researcher obtained the lists from all kindergarten teachers by September 16, 2009 via the school mail box and inter-county mail system.

A one-way between-groups ANOVA (Kirkpatrick & Feeney, 2007) was used to test the hypothesis that reading achievement for Imagination Library participants will be significantly different from nonparticipants. An ANOVA was also used to test the hypotheses that reading achievement for Imagination Library participants who qualify for free and reduced-price school lunch will be significantly different from kindergarten students that were not participants of the Imagination Library program who qualify for free and reduced-price school lunch. An ANOVA was further used to test the hypothesis of a relationship between reading achievement for male Imagination Library participants and female Imagination Library participants. The rationale for using an ANOVA test was the statistical test determined whether there was a difference between the groups. Further, an ANOVA was selected because reading achievement was a single continuous dependent variable and each independent variable was categorical (R. Richichi, personal

communication, February 25, 2009). A Spearman correlation (Gravetter & Wallnau, 2005) was used to test the hypothesis of a relationship between the reported frequency of read-aloud sessions with Imagination Library books and reading achievement among kindergarten students. A Spearman correlation was also used to test the hypothesis of a relationship between the length of participation in the program and reading achievement.

Exploring the reported frequency of read-aloud sessions with Imagination Library books is subject to social desirability bias because it is self-reported data and may be a threat to validity because the reported frequency could be the desired frequency rather than the actual frequency (R. Richichi, personal communication, February 25, 2009).

Prior to conducting the study, the researcher completed a Human Research Protection training course from the National Institutes of Health (NIH). The researcher obtained approval from the Institutional Review Board (IRB) to conduct this quantitative study (Walden University IRB approval # 06-11-09-0364561). The principals signed a letter of permission for the researcher to conduct the study at the chosen elementary schools and each kindergarten teacher completed a consent form. Parental consent forms were not necessary because students' personal identification remained confidential, and the researcher had no direct communication with kindergarten children. All research data kept in the researcher's home will be discarded after 5 years.

Summary

This cross-sectional explanatory study tested the theory of Imagination Library effectiveness that compared Imagination Library participation to reading achievement, for kindergarten students from three rural elementary schools in Sullivan County,

Tennessee. Reading achievement was defined by performance based on a kindergarten standardized reading baseline test that measured instructional reading levels and included a tiered reading placement. Data were gathered to explore whether or to what extent providing children birth to age 5 with one free children's book in the mail every month significantly impacted beginning of the year instructional reading levels. Also explored was the impact on free and reduced-price lunch status and any difference by gender. Finally, the relationships were explored between the length of participation and reported frequency of read-aloud sessions and beginning of the year instructional reading levels. A random sample of 90 was obtained from the 187 students enrolled at the three schools in August 2009. An ANOVA was used to test the hypotheses that reading achievement for Imagination Library participants was significantly different from nonparticipants. A Spearman correlation was used to test the hypothesis of a relationship between the reported frequency of read-aloud sessions and reading achievement among kindergarten students.

Chapter 4 contains a detailed analysis of research findings that determine whether Imagination Library participation impacted reading achievement for kindergarten students from three schools in northeastern Tennessee. Chapter 5 will include a discussion of study results and the implications for future research.

CHAPTER 4

RESULTS

Introduction

The purpose of this quantitative study was to determine the impact of Imagination Library participation on kindergarten reading achievement at three rural elementary schools in Sullivan County, Tennessee. The study used a cross-sectional explanatory design and defined reading achievement by performance based on a kindergarten standardized reading baseline test that measured instructional reading levels and included a tiered reading placement. The independent variable, participation in the Imagination Library program, was defined as registration during the preschool years and beginning anytime from birth to age 5 that provided children with one free children's book in the mail every month. This study explored the hypothesis that reading achievement for Imagination Library participants would be significantly different from nonparticipants. Also explored was the impact of the program on students eligible for free and reduced-price lunch status and any difference by gender. Finally, the relationships were explored between the length of participation and reported frequency of read-aloud sessions with Imagination Library books and reading achievement. This study addressed the following research questions:

1. What is the effect of providing children birth to age 5 with one free children's book in the mail every month on beginning of the year instructional reading levels of kindergarten participants of the Imagination Library compared to kindergarten students who were not participants of the Imagination Library program?

2. What is the effect of providing children birth to age 5 with one free children's book in the mail every month on beginning of the year instructional reading levels of kindergarten participants of the Imagination Library who qualify for free and reduced-price school lunch compared to kindergarten students that were not participants of the Imagination Library program who qualify for free and reduced-price school lunch?

3. What is the difference in the beginning of the year instructional reading levels of kindergarten male participants of the Imagination Library and beginning of the year instructional reading levels of kindergarten female participants of the Imagination Library?

4. What is the difference in the beginning of the year instructional reading levels of kindergarten male participants of the Imagination Library and beginning of the year instructional reading levels of kindergarten males that were not participants of the Imagination Library?

5. What is the difference in the beginning of the year instructional reading levels of kindergarten female participants of the Imagination Library and beginning of the year instructional reading levels of kindergarten females that were not participants of the Imagination Library?

6. What is the relationship between the reported frequency at which the Imagination Library books were read to the children prior to kindergarten registration and beginning of the year instructional reading levels among kindergarten students who were participants of the Imagination Library?

7. What is the relationship between the length of participation in the Imagination Library program prior to kindergarten registration and beginning of the year instructional reading levels among kindergarten students?

The null hypotheses included:

H_{o1}. There is no significant difference in the beginning of the year instructional reading levels between the control and treatment group.

H_{o2}. There is no significant difference in the beginning of the year instructional reading levels between the control and treatment group who qualify for free and reduced-price school lunch.

H_{o3}. There is no significant difference in the beginning of the year instructional reading levels between the control and treatment group by gender.

H_{o4}. There is no significant difference between beginning of the year instructional reading levels and reported frequency of book readings in the treatment group.

H_{o5}. There is no significant difference between beginning of the year instructional reading levels and length of participation in the treatment group.

The alternative hypotheses included:

A_{o1}. The alternative hypothesis for this study states providing children under the age of 5 with one free children's book in the mail every month will significantly impact the beginning of the year instructional reading levels among kindergarten students.

A_{o2}. Providing children under the age of 5 with one free children's book in the mail every month will significantly impact the beginning of the year instructional reading

levels among kindergarten students who qualify for free and reduced-price school lunch.

A_{o3}. Providing children under the age of 5 with one free children's book in the mail every month will significantly impact the beginning of the year instructional reading levels by gender among kindergarten students.

A_{o4}. The reported frequency of reading the Imagination Library books to the children prior to kindergarten registration will significantly impact the beginning of the year instructional reading levels among kindergarten students.

A_{o5}. The length of participation in the Imagination Library program prior to kindergarten registration will significantly impact the beginning of the year instructional reading levels among kindergarten students.

This chapter contains a description of the research tools and a detailed analysis of the research findings consistent with the research questions and hypotheses.

Data Collection

The instrument used in this study for determining the reading achievement of kindergarteners was the Scott Foresman Reading Street Baseline Test. The Scott Foresman Reading Street Kindergarten Baseline Test was comprised of several subtests and assessed kindergarten children's knowledge of readiness, letter recognition, phonological awareness, listening comprehension, and concepts of print (Scott Foresman, n.d., p. T4). The kindergarten reading baseline test results were used in this study because it was a standardized test required of all kindergarten students across the county. Validity was established through item quality, content alignment, and empirical field-testing (Scott Foresman, n.d.). Reliability was established because it was a selected-response

instrument including only multiple-choice test items (Scott Foresman, n.d.). The total baseline test score measured instructional reading levels and included a tiered reading placement. Kindergarten children were placed in reading groups based on their score on the total baseline test. Children who scored 90% or higher were placed in the advanced group; children who scored 60-89% were placed in the on-level group; and children who scored below 60% were placed in the strategic intervention group. Children who scored 25% or lower were pulled out of the regular classroom for support in a small-group setting for 30 minutes every day to receive intensive intervention.

Archival data was gathered from a questionnaire administered in March of 2009 during kindergarten registration at the chosen elementary schools, and was needed to determine the reported frequency of read-aloud sessions with Imagination Library books and the length of participation in the program. Incomplete questionnaires were returned and data was missing for both the number of years in the program and the reported frequency of read-aloud sessions with Imagination Library books prior to kindergarten registration.

Data Analysis

Data were gathered to explore whether or to what extent providing children birth to age 5 with one free children's book in the mail every month significantly impacted beginning of the year instructional reading levels among kindergarten students at three rural elementary schools in Sullivan County, Tennessee. A random sample of 90 was obtained from the 187 students enrolled at the three schools in August 2009 (see Appendix A for a stratified summary). A one-way between-groups ANOVA (Kirkpatrick

& Feeney, 2007) was used to test the hypothesis that reading achievement for Imagination Library participants was significantly different from nonparticipants. An ANOVA was also used to test the hypotheses of a relationship between reading achievement for male Imagination Library participants and female Imagination Library participants and of a relationship between students eligible for free or reduced-price school lunch and students not eligible for free or reduced-price lunch. The rationale for using an ANOVA was the statistical test determined whether there was a difference between the groups. An ANOVA was appropriate because reading achievement was a single continuous dependent variable; and group, lunch status, and gender were single categorical independent variables (R. Richichi, personal communication, October 2, 2009). An ANOVA analysis uses an *F*-ratio to measure statistical significance (Gravetter & Wallnau, 2005). With an alpha level set at .05, the results of this study are statistically significant if findings are less than .05. Further, a Levene's test was used to evaluate whether the variance of scores within each group was approximately equal. A Spearman correlation (Gravetter & Wallnau, 2005) was used to test the hypotheses of a relationship between the reported frequency of read-aloud sessions and reading achievement among kindergarten students as well as a relationship between the length of time in the program and achievement. A Spearman correlation was an appropriate measure of association between rank orders because years in the program is distributed following an interval level of measurement.

A one-way between-groups ANOVA was used to address the research question on the effect of providing children birth to age 5 with one free children's book in the mail

every month on beginning of the year instructional reading levels of kindergarten participants of the Imagination Library compared to kindergarten students who were not participants of the Imagination Library program. Table 1 provides descriptive statistics of the reading achievement for Imagination Library participants compared to nonparticipants.

Table 1

Descriptive statistics for reading achievement by group

Group	*M*	*s*	*N*
No Imagination Library	66.11	18.87	45
Imagination Library	72.80	15.31	45
Total	69.46	17.42	90

The results from Table 1 indicate that the mean for the Imagination Library group (M = 72.80) was higher than the mean for the no Imagination Library group (M = 66.11). Or, the mean reading achievement score of participants was higher than the mean reading achievement score of nonparticipants. The mean score from both the participant group and the nonparticipant group corresponded to on-level placement based on the Scott Foresman Scoring Guide (p. T19, n.d.). The results from a Levene's test evaluating the homogeneity of variances for reading achievement scores by group was .269, indicating the variance of scores within each group was not statistically different. Table 2 provides a summary of ANOVA results of the reading achievement for Imagination Library

participants compared to nonparticipants.

Table 2

ANOVA for reading achievement by group

	SS	*df*	*MS*	*F*	*p*
Between Groups	1006.678	1	1006.678	3.409	.068
Within Groups	25985.644	88	295.291		
Total	26992.322	89			

The results from Table 2 indicate that the significance value ($p = .068$) was nonsignificant because the value was higher than .05 ($\alpha = .05$). Or, the reading achievement for Imagination Library participants compared to nonparticipants was not statistically significant. Therefore, the findings of this study fail to support the alternative hypothesis that providing children under the age of 5 with one free children's book in the mail every month will significantly impact the beginning of the year instructional reading levels among kindergarten students. Or, the research failed to reject the null hypothesis and the conclusion is that there is no significant difference in the beginning of the year instructional reading levels between the Imagination Library group and no Imagination Library group.

A one-way between-groups ANOVA was used to address the effect of an achievement gap by social class. Table 3 provides descriptive statistics of the reading achievement for students who qualified for free and reduced-price school lunch compared

to students who did not qualify for free and reduced-price lunch.

Table 3

Descriptive statistics for reading achievement by lunch status

Group	*M*	*s*	*N*
Free/Reduced Lunch	64.47	16.94	43
No Free/Reduced Lunch	74.02	16.74	47
Total	69.46	17.42	90

The results from Table 3 indicate that the mean for students not eligible for free or reduced lunch (M = 74.02) was higher than the mean for students eligible for free or reduced lunch (M = 64.47). Or, the mean reading achievement score of students who did not receive free or reduced-price school lunch was higher than the mean reading achievement score of students who received a free or reduced-price school lunch. The mean score from both the students eligible for and not eligible for free and reduced-price school lunch corresponded to on-level placement based on the Scott Foresman Scoring Guide (p. T19, n.d.). The results from a Levene's test evaluating the homogeneity of variances for reading achievement scores by social class was .860, indicating the variance of scores within each group was not statistically different. Table 4 provides a summary of ANOVA results of the reading achievement for students who qualified for free and reduced-price school lunch compared to students who did not qualify for free and reduced-price lunch.

Table 4

ANOVA for reading achievement by lunch status

	SS	*df*	*MS*	*F*	*p*
Between Groups	2050.646	1	2050.646	7.235	.009
Within Groups	24941.676	88	283.428		
Total	26992.322	89			

The results from Table 4 indicate that the significance value ($p = .009$) was significant because the value was lower than .05 ($\alpha = .05$). Or, the reading achievement for students who did not qualify for free and reduced-price school lunch compared to students who did qualify for free and reduced-price lunch was statistically different. Specifically, the findings indicate that students who received a free or reduced-price school lunch scored statistically lower than students who did not receive a free or reduced-price lunch. Therefore, the findings of this study support an achievement gap by social class, with lower socioeconomic students scoring well below their higher socioeconomic peers, as reported in the research literature.

A one-way between-groups ANOVA was used to address the research question on the effect of providing children birth to age 5 with one free children's book in the mail every month on beginning of the year instructional reading levels of kindergarten participants of the Imagination Library who qualified for free and reduced-price school lunch compared to kindergarten students that were not participants of the Imagination

Library program who qualified for free and reduced-price school lunch. Table 5 provides descriptive statistics of the reading achievement for students eligible for free or reduced lunch in regards to participants compared to nonparticipants.

Table 5

Descriptive statistics for reading achievement by group and lunch status

Group	Lunch Status	*M*	*s*	*N*
No IL	Free/ Reduced	61.97	17.66	29
	No Free/ Reduced	73.63	19.21	16
	Total	66.11	18.87	45
IL	Free/ Reduced	69.64	14.58	14
	No Free/ Reduced	74.23	15.65	31
	Total	72.80	15.31	45
Total	Free/ Reduced	64.47	16.94	43
	No Free/ Reduced	74.02	16.74	47
	Total	69.46	17.42	90

The results from Table 5 indicate that the means for the no free and reduced-price school lunch students (M = 73.63; M = 74.23) were higher than the means for the students eligible for free and reduced-price lunch (M = 61.97; M = 69.64) for both the participant

group and the nonparticipant group. Further, the mean scores for the Imagination Library participants (M = 69.64; M = 74.23) were higher than the mean scores for the nonparticipants (M = 61.97; M = 73.63) for both the students who qualified for free and reduced-price school lunch and the students who did not qualify for free and reduced-price lunch. The results from a Levene's test evaluating the homogeneity of variances for reading achievement scores by group and lunch status was .897, indicating the variance of scores within each group was not statistically different. Figure 1 illustrates an interaction display plot of the means of reading achievement by group and lunch status.

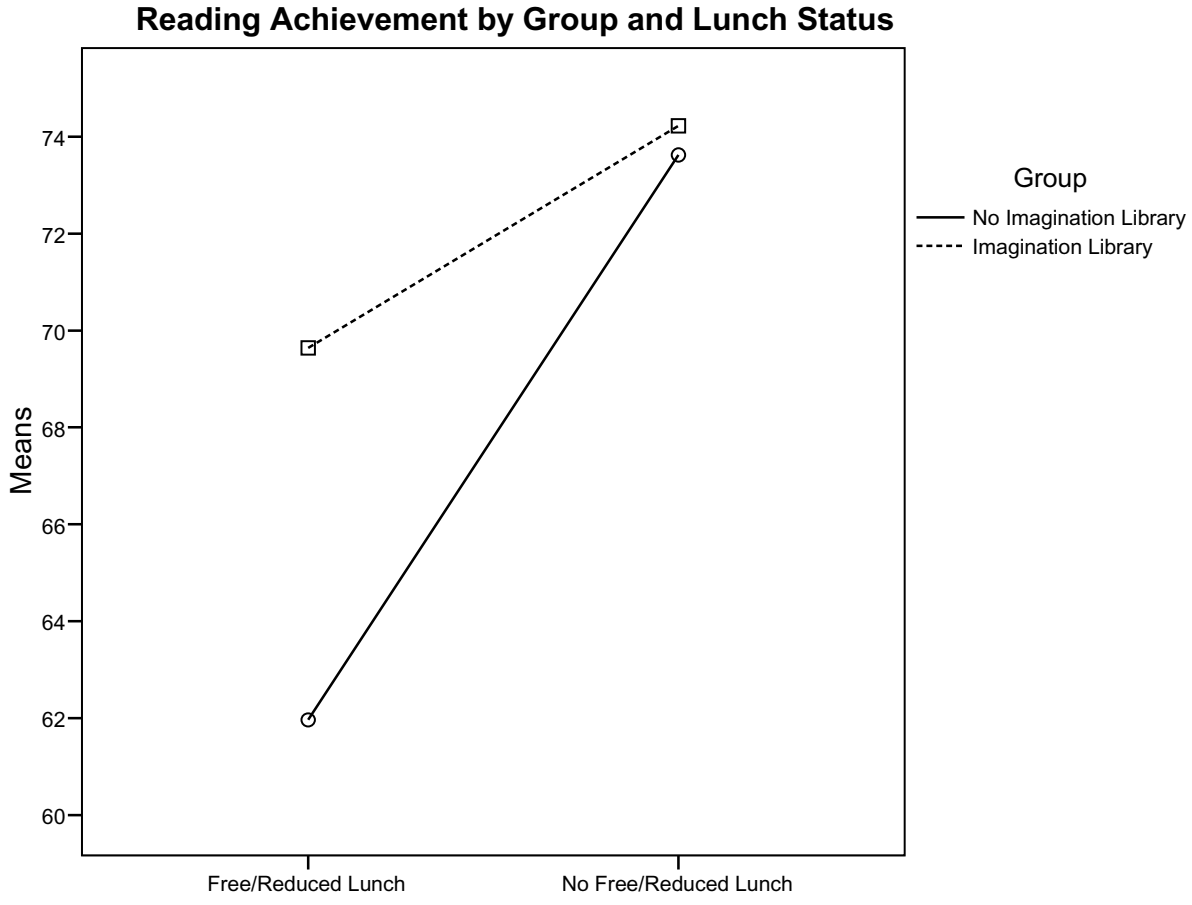

Figure 1. Reading achievement by group and lunch status

The display plot of means indicates there was more of a mean difference between the Imagination Library participants who qualified for free and reduced lunch (*M* = 69.64) compared to students that were not participants who qualified for free and reduced lunch (*M* = 61.97) than there was between the mean difference between the Imagination Library participants who did not qualify for free or reduced lunch (M = 74.23) compared to students that were not participants who did not qualify for free or reduced lunch (*M* = 73.63). Or, findings based on the mean reading score differences indicate the Imagination Library program affected the mean reading achievement scores of the lower socioeconomic students more than it did the higher socioeconomic students. Further, there was more of a mean difference between the students who qualified for free and reduced lunch (*M* = 61.97) and the students who did not qualify for a free and reduced lunch (*M* = 73.63) among the no Imagination Library group compared to students who qualified for free and reduced lunch (*M* = 69.64) and the students who did not qualify for a free and reduced lunch (*M* = 74.23) among the Imagination Library participants. Table 6 provides a summary of ANOVA results of the reading achievement for students eligible for free or reduced lunch in regards to participants compared to nonparticipants.

Table 6

Between groups comparisons for reading achievement by group and lunch status

Source	*SS*	*df*	*MS*	*F*	*p*
Group	341.496	1	341.496	1.205	.275
Lunch Status	1314.683	1	1314.683	4.637	.034
Group * Lunch Status	249.551	1	249.551	.880	.351
Error	24381.349	86	283.504		

The results from Table 6 indicate that the significance value ($p = .034$) was significant for lunch status because the value was lower than .05 ($\alpha = .05$). Although, the results indicate the significance values ($p = .275$; $p = .351$) were nonsignificant for group or group and lunch status because the values were higher than .05 ($\alpha = .05$). Or, overall there was a statistically significant difference between the free and reduced lunch group and no free and reduced lunch group. However, the interaction term for group and lunch status was nonsignificant. Therefore, the findings of this study fail to support the alternative hypothesis that providing children under the age of 5 with one free children's book in the mail every month would significantly impact the beginning of the year instructional reading levels among kindergarten students who qualified for free and reduced-price school lunch. Or, fail to reject the null hypothesis and conclude there is no significant difference in the beginning of the year instructional reading levels between the Imagination Library group and no Imagination Library group who qualified for free and

reduced-price school lunch. Table 7 provides simple effects comparisons between the groups within lunch status and Table 8 examines the interaction term between lunch status groups within Imagination Library groups. The purpose of including tables 7 and 8 is to support the findings depicted in Table 6 by further examining the interaction terms with individual ANOVA tests.

Table 7

Individual comparisons between groups within lunch status

Lunch Status	Group	Group	*p*
Free / Reduced	No IL	IL	.165
No Free/ Reduced	No IL	IL	.908

The results from Table 7 indicate there was no significant difference between Imagination Library and no Imagination Library for those who had a free and reduced lunch. There was no significant difference between Imagination Library and no Imagination Library for those who did not have a free and reduced lunch.

Table 8

Individual comparisons between lunch status within groups

Group	Lunch Status	Lunch Status	*p*
No IL	No Free/ Reduced	Free/ Reduced	.029
IL	No Free/ Reduced	Free/ Reduced	.400

The results from Table 8 indicate the difference between no free and reduced lunch and free and reduced lunch was statistically significant among those who were in the no Imagination Library group. The difference between the free and reduced lunch and the no free and reduced lunch was nonsignificant among the Imagination Library group. Or, individually, there was a significant test between the no free and reduced-price school lunch and free and reduced-price lunch among students that were not participants of the Imagination Library program. Therefore, findings based on an individual ANOVA test indicates that students not participating in the Imagination Library program considered economically disadvantaged were most affected.

A one-way between-groups ANOVA was used to address the effect of an achievement gap by gender. Table 9 provides descriptive statistics of the reading achievement for males compared to females.

Table 9

Descriptive statistics for reading achievement by gender

Group	*M*	*s*	*N*
Male	68.33	16.08	51
Female	70.92	19.13	39
Total	69.46	17.42	90

The results from Table 9 indicate that the mean for females (M = 70.92) was higher than the mean for males (M = 68.33). The mean score from both the males and the females corresponded to on-level placement based on the Scott Foresman Scoring Guide (p. T19, n.d.). The results from a Levene's test evaluating the homogeneity of variances for reading achievement scores by gender was .411, indicating the variance of scores within each group was not statistically different. Table 10 provides a summary of ANOVA results of the reading achievement for males compared to females.

Table 10

ANOVA for reading achievement by gender

	SS	*df*	*MS*	*F*	*p*
Between Groups	148.220	1	148.220	.486	.488
Within Groups	26844.103	88	305.047		
Total	26992.322	89			

The results from Table 10 indicate that the significance value ($p = .488$) was nonsignificant because the value was higher than .05 ($\alpha = .05$). Or, the reading achievement for males compared to females was not statistically different. Therefore, the findings of this study fail to support an achievement gap by gender as reported in the research literature.

A one-way between-groups ANOVA was used to address the research questions concerning the difference in the beginning of the year instructional reading levels of kindergarten male participants of the Imagination Library and beginning of the year instructional reading levels of kindergarten female participants of the Imagination Library; and the difference in the beginning of the year instructional reading levels of kindergarten male participants of the Imagination Library and beginning of the year instructional reading levels of kindergarten males that were not participants of the Imagination Library; and the difference in the beginning of the year instructional reading levels of kindergarten female participants of the Imagination Library and beginning of the

year instructional reading levels of kindergarten females that were not participants of the Imagination Library. Table 11 provides descriptive statistics of the reading achievement for males versus females in regards to participants compared to nonparticipants.

Table 11

Descriptive statistics for reading achievement by group and gender

Group	Gender	*M*	*s*	*N*
No IL	Male	66.96	16.44	27
	Female	64.83	22.49	18
	Total	66.11	18.87	45
IL	Male	69.88	15.88	24
	Female	76.14	14.27	21
	Total	72.80	15.31	45
Total	Male	68.33	16.08	51
	Female	70.92	19.13	39
	Total	69.46	17.42	90

The results from Table 11 indicate that, within the no Imagination Library group, the mean for the males ($M = 66.96$) was higher than the mean for the females ($M = 64.83$). However, within the Imagination Library group, the mean for the females ($M = 76.14$)

was higher than the mean for the males (M = 69.88). Further, the means for both the male and female participants (M = 69.88; M = 76.14) were higher than the means for both the male and female nonparticipants (M = 66.96; M = 64.83). The results from a Levene's test evaluating the homogeneity of variances for reading achievement scores by group and gender was .273, indicating the variance of scores within each group was not statistically different. Figure 2 illustrates an interaction display plot of the means of reading achievement by group and gender.

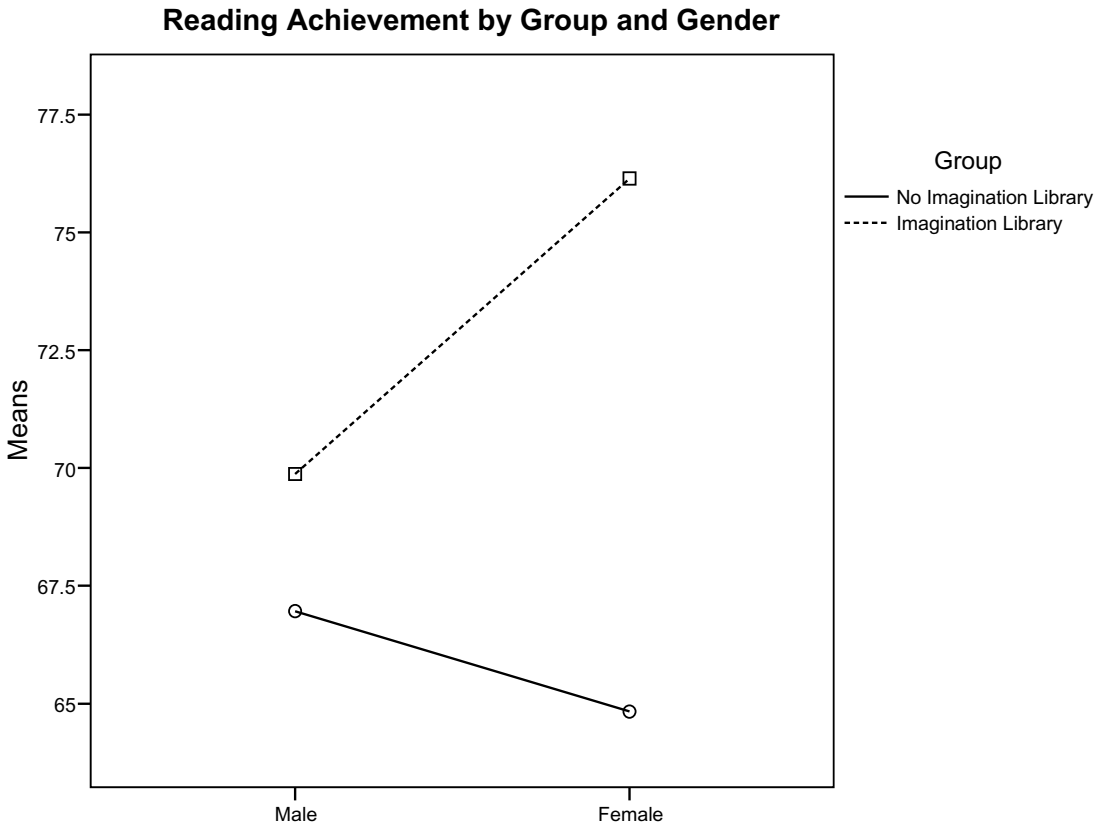

Figure 2. Reading achievement by group and gender

The display plot of means indicates there was more of a mean difference between the female participants (M = 76.14) and female nonparticipants (M = 64.83) compared to the

male participants (M = 69.88) and male nonparticipants (M = 66.96). Or, findings based on the mean reading score differences indicate the Imagination Library program affected the mean reading achievement scores of the female participants more than it did the male participants of the program. Among the no Imagination Library group, the findings do not support a gender achievement gap that iterates females outperform males on standardized reading achievement tests (Ashby, 2005; Brozo, 2006; Gates, 1961; Grigg, Daane, Ying, & Campell, 2003; Louie & Ehrlich, 2008; NCES, 2004). However, among the Imagination Library group, the findings do support the gender achievement gap that females outperform males on reading achievement. Table 12 provides a summary of ANOVA results of the reading achievement for males versus females in regards to participants compared to nonparticipants.

Table 12

Between groups comparisons for reading achievement by group and gender

Source	*SS*	*df*	*MS*	*F*	*p*
Group	1112.023	1	1112.023	3.751	.056
Gender	94.156	1	94.156	.318	.575
Group * Gender	387.720	1	387.720	1.308	.256
Error	25496.659	86	296.473		

The results from Table 12 indicate the significance values (p = .056; p = .575; p = .256) were nonsignificant for group; gender; and, group and gender because all values were

higher than .05 ($\alpha = .05$). Therefore, the findings of this study fail to support the alternative hypothesis that providing children under the age of 5 with one free children's book in the mail every month will significantly impact the beginning of the year instructional reading levels by gender among kindergarten students. Or, fail to reject the null hypothesis and conclude there is no significant difference in the beginning of the year instructional reading levels by gender. Table 13 provides individual comparisons for group within gender and Table 14 examines the interaction term between gender within groups. The purpose of including tables 13 and 14 is to support the findings depicted in Table 12 by further examining the interaction terms with individual ANOVA tests.

Table 13

Individual comparisons between groups within gender

Gender	Group	Group	*p*
Male	No IL	IL	.548
Female	No IL	IL	.044

The results from Table 13 indicate there was no significant difference between Imagination Library and no Imagination Library among males. However, the individual test between Imagination Library and no Imagination Library was significant for females. Or, individually, there was a significant test between female participants of the Imagination Library and female nonparticipants of the program. Therefore, findings from

an individual ANOVA test indicate that female participants of the Imagination Library program were most affected.

Table 14

Individual comparisons between gender within groups

Group	Gender	Gender	*p*
No IL	Male	Female	.685
IL	Male	Female	.226

The results from Table 14 indicate there was no significant difference between males and females among the no Imagination Library group. Likewise, there was no significant difference between males and females among the Imagination Library group.

A Spearman correlation was used to address the research question regarding the relationship between the reported frequency at which the Imagination Library books were read to the children prior to kindergarten registration and beginning of the year instructional reading levels among kindergarten students who were participants of the Imagination Library. A Spearman correlation was also used to address the research question regarding the relationship between the length of participation in the Imagination Library program prior to kindergarten registration and beginning of the year instructional reading levels among kindergarten students. The sample size for both correlations was less than 90 due to missing data. Table 15 provides a matrix of Spearman correlations.

Table 15

Spearman correlations among reading achievement, years in program, and frequency

		Score	Years	Frequency
Reading Score	Correlation	1.000	-.129	.166
	Significance		.433	.277
	N	90	39	45
Years in Program	Correlation	-.129	1.000	.005
	Significance	.433		.974
	N	39	39	39
Frequency	Correlation	.166	.005	1.000
	Significance	.277	.974	
	N	45	39	45

The results from Table 15 indicate that the Spearman correlation for years in the program by reading achievement was weak. Further, the correlation between frequency of read-aloud sessions and reading achievement was also weak. Therefore, both Spearman correlations for length of time in the program and frequency of read-aloud sessions with Imagination Library books were nonsignificant because the significance values were greater than .05. Specifically, both were closer to zero than 1 or -1. The findings of this

study fail to support the alternative hypothesis that the frequency of reading the Imagination Library books to the children prior to kindergarten registration will significantly impact the beginning of the year instructional reading levels among kindergarten students. Or, fail to reject the null hypothesis and conclude there is no significant difference between beginning of the year instructional reading levels and reported frequency of book readings in the Imagination Library group. Finally, the findings of this study fail to support the alternative hypothesis that the length of participation in the Imagination Library program prior to kindergarten registration will significantly impact the beginning of the year instructional reading levels among kindergarten students. Or, fail to reject the null hypothesis and conclude there is no significant difference between beginning of the year instructional reading levels and length of participation in the Imagination Library group.

Interpretation of the Data

Table 1 depicted a consistent trend in the overall data results that the mean reading achievement score of Imagination Library participants was higher than the mean reading achievement score of nonparticipants. However, based on the results provided in Table 2, the reading achievement for Imagination Library participants compared to nonparticipants was not statistically different as determined by an ANOVA analysis.

Table 3 indicated the mean reading achievement score of students who did not receive free or reduced-price school lunch was higher than the mean reading achievement score of students who received a free or reduced-price school lunch. Importantly, the results from Table 4 indicated the reading achievement for students who did not qualify

for free and reduced-price school lunch compared to students who did qualify for free and reduced-price lunch was statistically different as determined by an ANOVA analysis. Table 4 and Table 6 indicated that overall there was a statistically significant difference between the free and reduced lunch group and no free and reduced lunch group. Specifically, the findings indicated that students who received a free or reduced-price school lunch scored statistically lower than students who did not receive a free or reduced-price lunch. Table 5 indicated the mean difference between the no free and reduced students and students receiving free and reduced lunch were higher for both the participant group and the nonparticipant group. Further, the mean scores for the Imagination Library participants were higher than the mean scores for the nonparticipants for both the students who qualified for free and reduced-price school lunch and the students who did not qualify for free and reduced-price lunch. Upon further examination of the interaction terms with individual ANOVA tests, the analysis for group and lunch status was nonsignificant. Or, Table 7 indicated there was no significant difference between Imagination Library and no Imagination Library for those who had a free and reduced lunch. Likewise, there was no significant difference between Imagination Library and no Imagination Library for those who did not have a free and reduced lunch. Furthermore, Table 8 indicated the difference between no free and reduced lunch and free and reduced lunch was statistically significant among those who were in the no Imagination Library group. The difference between the free and reduced lunch and the no free and reduced lunch was nonsignificant among the Imagination Library group. Or, individually, there was a significant test between the no free and reduced-price school

lunch and free and reduced-price lunch among students that were not participants of the Imagination Library program. Therefore, findings based on an individual ANOVA test indicated that students not participating in the Imagination Library program considered economically disadvantaged were most affected. Additionally, Figure 1 illustrated findings based on the mean reading score differences that the Imagination Library program affected the mean reading achievement scores of the lower socioeconomic students more than it did the higher socioeconomic students.

Table 9 indicated the mean for females was higher than the mean for males. However, based on findings provided in Tables 10 and 12, the reading achievement for males compared to females was not statistically different as determined by an ANOVA analysis. Table 14 indicated there was no significant difference between males and females among the no Imagination Library group. Likewise, there was no significant difference between males and females among the Imagination Library group. Although, upon further examination of the interaction terms with individual ANOVA tests, Table 11 indicated that, within the no Imagination Library group, the mean for the males was slightly higher than the mean for the females; yet, within the Imagination Library group, the mean for the females was substantially higher than the mean for the males. Further, the means for both the male and female participants were higher than the means for both the male and female nonparticipants. Specifically, Table 13 indicated there was no significant difference between Imagination Library and no Imagination Library among males. However, the individual test between Imagination Library and no Imagination Library was significant for females. Additionally, Figure 2 displayed more of a mean

difference between the female participants and female nonparticipants compared to the male participants and male nonparticipants. Findings based on the mean reading score differences indicated the Imagination Library program affected the mean reading achievement scores of the female participants more than it did the male participants of the program. Individually, there was a significant test between female participants of the Imagination Library and female nonparticipants of the program. Therefore, findings from an individual ANOVA test indicated that female participants of the Imagination Library program were most affected.

The results did not support that the frequency of reading the Imagination Library books to the children prior to kindergarten registration significantly impacted the beginning of the year instructional reading levels among kindergarten students. Likewise, the results did not support that the length of participation in the Imagination Library program prior to kindergarten registration significantly impacted the beginning of the year instructional reading levels among kindergarten students.

Caution should be taken when interpreting the results from the additional analyses on the independent variables at the same time because of the limited sample size within each stratified group (R. Richichi, personal communication, October 2, 2009). Specifically, tables 7, 8, 13, and 14 examine the interaction terms with individual ANOVA tests and possible alternate interpretations could be derived when comparing the interactions because thirty per group would have been ideal. The interaction terms with individual ANOVA tests comparing group and lunch status and group and gender should be reviewed with skepticism because the overall interaction term was not statistically

significant (R. Richichi, personal communication, October 2, 2009). Or, caution should be taken when interpreting significant simple tests in the presence of a nonsignificant interaction term due to a type 1 error (Gravetter & Wallnau, 2005). For the purpose of this study, individual comparisons were evaluated to determine trends and patterns within the data. Table 16 provides a summary of analyses with conclusions for the purpose of depicting the overall statistical tests separate from the individual simple tests evaluated.

Table 16

Summary of analyses with conclusions

Overall Interaction Term	Simple Tests	Conclusions
IL and no IL		Nonsignificant
Free/ Reduced and no Free/ Reduced		Significant
Lunch * IL Group		Nonsignificant
	IL and no IL Free/ Reduced	nonsignificant
	IL and no IL no Free/ Reduced	nonsignificant
	Fr/Red and no Fr/Red no IL	significant
	Fr/Red and no Fr/Red IL	nonsignificant
Males and Females		Nonsignificant
Gender * IL Group		Nonsignificant
	M and F no IL	nonsignificant
	M and F in IL	nonsignificant
	IL and no IL Males	nonsignificant
	IL and no IL Females	significant
Frequency		Nonsignificant
Years		Nonsignificant

The summary of results provided in Table 16 is further addressed in the conclusion of this chapter and throughout chapter 5.

Alternate interpretations of the findings of the Spearman correlations are possible and caution should be taken when interpreting the results. First, exploring the reported frequency of read-aloud sessions with Imagination Library books was subject to social desirability bias because it was self-reported data and a possible threat to validity because the reported frequency may have been the desired frequency rather than the actual frequency. Further, the sample size for both correlations was less than 90 due to missing data. Incomplete questionnaires were returned, and data was missing for both the number of years in the program and the reported frequency of read-aloud sessions with Imagination Library books prior to kindergarten registration.

Conclusion

The purpose of this quantitative study was to determine the impact of Imagination Library participation on kindergarten reading achievement at three rural elementary schools in Sullivan County, Tennessee. A random sample of 90 was obtained from the 187 students enrolled at the 3 schools in August 2009 (see Appendix A for a stratified summary). A one-way between-groups ANOVA (Kirkpatrick & Feeney, 2007) was used to test the hypothesis that reading achievement for Imagination Library participants was significantly different from nonparticipants and was also used to test the hypotheses of a relationship between reading achievement by gender and lunch status. A Spearman correlation (Gravetter & Wallnau, 2005) was used to test the hypotheses of a relationship between the reported frequency of read-aloud sessions with Imagination Library books

and reading achievement among kindergarten students as well as a relationship between the length of time in the program and reading achievement. In conclusion, (a) the hypothesis that there would be a statistically significant difference between Imagination Library groups on reading achievement was not supported by the findings of this study, (b) the hypothesis that there would be a statistically significant difference between lunch status groups on reading achievement was supported by the findings of this study, (c) the hypothesis that there would be a statistically significant difference between gender groups on reading achievement was not supported by the findings of this study, (d) the hypothesis that frequency of read-aloud sessions with Imagination Library books was related to reading achievement was not supported by the findings of this study, and (e) the hypothesis that years in the program prior to kindergarten registration was related to reading achievement was not supported by the findings of this study. Furthermore, simple effects comparisons between the Imagination Library groups within and between lunch status and gender were examined using individual ANOVA analyses. These additional interaction terms with individual ANOVA tests comparing group and lunch status and group and gender were evaluated to determine trends and patterns within the data. However, the interaction terms with individual ANOVA tests comparing group and lunch status and group and gender should be reviewed with skepticism because the overall interaction term was not statistically significant (R. Richichi, personal communication, February 25, 2009). Therefore, caution should be taken when interpreting any significant simple tests results in the presence of a non-significant interaction term due to a type 1 error (Gravetter & Wallnau, 2005). In conclusion of the individual ANOVA analyses, (a)

there was a significant test between the no free and reduced-price lunch group and the free and reduced-price lunch group among those in the no Imagination Library group with nonparticipants receiving a free and reduced-price lunch scoring lower, and (b) there was a significant test between the no Imagination Library and the Imagination Library group among females with female participants scoring higher than female nonparticipants.

Chapter 5 will contain a brief overview of why and how the study was done. Conclusions will address all research questions and relate the findings to the research literature. Implications for social change, recommendations for action and further study will also be explored.

CHAPTER 5

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Introduction

The Imagination Library is an early intervention book-distribution program that provides registered children from birth to age 5 with a new book every month in the mail at no cost to the family. Only a limited amount of research has been conducted in Tennessee on the Imagination Library. This study was needed because the state department of Tennessee, the Governor's Books from Birth Foundation, and county Imagination Library sponsors across the state are operating without supporting reading achievement scores determining the effectiveness of the program and the reading performance of school-aged Imagination Library participants compared to nonparticipants.

Data was gathered to explore whether or to what extent providing children birth to age 5 with one free children's book in the mail every month significantly impacted beginning of the year instructional reading levels. Also explored was the impact on free and reduced-price lunch status and any difference by gender. Finally, the relationships were explored between the length of participation and reported frequency of read-aloud sessions with Imagination Library books and beginning of the year instructional reading levels. A random sample of 90 was obtained from the 187 students enrolled at the three schools in August 2009 (see Appendix A for a stratified summary). A one-way between-Groups ANOVA (Kirkpatrick & Feeney, 2007) was used to test the hypothesis that reading achievement for Imagination Library participants was significantly different from

nonparticipants and was also used to test the hypotheses of a relationship between reading achievement by gender and lunch status. A Spearman correlation (Gravetter & Wallnau, 2005) was used to test the hypotheses of a relationship between the reported frequency of read-aloud sessions with Imagination Library books and beginning of the year instructional reading levels among kindergarten students as well as a relationship between the length of time in the program and instructional reading levels. This study addressed the following research questions:

1. What is the effect of providing children birth to age 5 with one free children's book in the mail every month on beginning of the year instructional reading levels of kindergarten participants of the Imagination Library compared to kindergarten students who were not participants of the Imagination Library program?

2. What is the effect of providing children birth to age 5 with one free children's book in the mail every month on beginning of the year instructional reading levels of kindergarten participants of the Imagination Library who qualify for free and reduced-price school lunch compared to kindergarten students that were not participants of the Imagination Library program who qualify for free and reduced-price school lunch?

3. What is the difference in the beginning of the year instructional reading levels of kindergarten male participants of the Imagination Library and beginning of the year instructional reading levels of kindergarten female participants of the Imagination Library?

4. What is the difference in the beginning of the year instructional reading levels of kindergarten male participants of the Imagination Library and beginning of the year

instructional reading levels of kindergarten males that were not participants of the Imagination Library?

5. What is the difference in the beginning of the year instructional reading levels of kindergarten female participants of the Imagination Library and beginning of the year instructional reading levels of kindergarten females that were not participants of the Imagination Library?

6. What is the relationship between the reported frequency at which the Imagination Library books were read to the children prior to kindergarten registration and beginning of the year instructional reading levels among kindergarten students who were participants of the Imagination Library?

7. What is the relationship between the length of participation in the Imagination Library program prior to kindergarten registration and beginning of the year instructional reading levels among kindergarten students?

In summary, one ANOVA analysis result was statistically significant and two individual ANOVA tests were significant. Although, caution should be taken when interpreting these two significant simple tests results in the presence of a nonsignificant interaction term due to a type 1 error (Gravetter & Wallnau, 2005). First, the findings of this study failed to support the alternative hypothesis that providing children under the age of 5 with one free children's book in the mail every month would significantly impact the beginning of the year instructional reading levels among kindergarten students. The research failed to reject the null hypothesis and concluded there was no significant difference in the beginning of the year instructional reading levels between the

Imagination Library group and no Imagination Library group. Secondly, there was an overall statistically significant difference between the free and reduced-price school lunch group and the no free and reduced-price lunch group. However, the interaction term for group and lunch status was nonsignificant. Therefore, the findings of this study failed to support the alternative hypothesis that providing children under the age of 5 with one free children's book in the mail every month would significantly impact the beginning of the year instructional reading levels among kindergarten students who qualified for free and reduced-price school lunch. The research failed to reject the null hypothesis and concluded there was no significant difference in the beginning of the year instructional reading levels between the Imagination Library group and no Imagination Library group who qualified for free and reduced-price school lunch. Third, the findings of this study failed to support the alternative hypothesis that providing children under the age of 5 with one free children's book in the mail every month would significantly impact the beginning of the year instructional reading levels by gender among kindergarten students. The research failed to reject the null hypothesis and concluded there was no significant difference in the beginning of the year instructional reading levels by gender. However, the individual test between Imagination Library and no Imagination Library was significant for females. Fourth, the findings of this study failed to support the alternative hypothesis that the frequency of reading the Imagination Library books to the children prior to kindergarten registration would significantly impact the beginning of the year instructional reading levels among kindergarten students. The research failed to reject the null hypothesis and concluded there was no significant difference between beginning of

the year instructional reading levels and reported frequency of book readings in the Imagination Library group. Finally, the findings of this study failed to support the alternative hypothesis that the length of participation in the Imagination Library program prior to kindergarten registration would significantly impact the beginning of the year instructional reading levels among kindergarten students. Therefore, the research failed to reject the null hypothesis and concluded there was no significant difference between beginning of the year instructional reading levels and length of participation in the Imagination Library group. However, it is possible that missing data from the parent questionnaires could have altered the study findings.

Interpretation of Findings

As reported in chapter 4, reading achievement for Imagination Library participants compared to nonparticipants was not statistically different. However, a consistent trend in the overall sample data from this study reported that the mean reading achievement score of Imagination Library participants was higher than the mean reading achievement score of nonparticipants. Therefore, results supported research literature that iterates the value of book ownership and a literate home environment. Research indicates a significant relationship exists between early home literacy experiences, such as the availability of books and frequency of read-aloud sessions, and reading achievement (Rashid, Morris & Sevcik, 2005). However, the results of this study did not prove to indicate a statistically significant difference between the Imagination Library group of students and the students who did not participate in the program. Further, the findings of this study failed to support a relationship between the frequency of reading the

Imagination Library books to the children and reading achievement. Additionally, the findings of this study failed to support a relationship between years in the program prior to starting school and reading achievement. Such study findings are in opposition to research that iterates a literate home environment (Rashid, Morris & Sevcik, 2005) is directly linked to school readiness (ALA, 2007; Nord, Lennon, Liu, & Chandler, 1999). Researchers state home factors prior to school entrance, such as being read to everyday and having access to books, positively affect children's reading performances (Book Trust, 2006; Chall & Snow, 1982; Dickenson & Neuman, 2006; Feitelson & Goldstein, 1986; Healy, 2001; Nord, Lennon, Liu, & Chandler, 1999; PISA, 2000; Trelease, 2001). The theoretical basis for this study was Vygotsky's (1978) sociocultural theory and the process of scaffolding (Bruner, 1966; Cambourne, 1988; Danahy & Olson, 2003; Gagne, 1965; Huey, 1908; Oser & Baeriswyl, 2001; Piaget & Inhelder, 1969; Russell, 1990; Vygotsky, 1962). Critical to Vygotsky's (1978) theory are the social aspect of learning and the interactions, such as between parent and child. It was expected prior to this study that Imagination Library participation during the preschool years would effect reading achievement for kindergarten students because parents would have modeled the reading process for their children by reading aloud the books provided by the program. Although the results were not statistically significant based on ANOVA analyses, the tendency was for the participants of the program to score higher than the nonparticipants. Further, the trend that participants of the program scored higher on average than nonparticipants supported a 2007 study that reported 48% of kindergarten teachers stated that Imagination Library participants performed better than expected than nonparticipants

(TBR, 2008a).

The findings of this study supported research that suggests socioeconomic status is related to performance in school. The reading achievement for students who did not qualify for free and reduced-price school lunch compared to students who did qualify for free and reduced-price lunch was statistically different. Researchers report a relationship between socioeconomic level and reading achievement (Chall & Snow, 1982; PISA, 2006; PISA, 2000). Eamon (2005) and the National Center for Education Statistics (NCES, 2008), report on the effect of poverty on reading achievement. The results of this study supported an achievement gap even though the interaction term for group and lunch status was nonsignificant. Further, findings revealed that receiving the Imagination Library books assisted students on free and reduced-price lunch outperform students on free and reduced-price lunch who did not receive the books. Specifically, findings based on the mean reading score differences indicate the Imagination Library program affected the mean reading achievement scores of the lower socioeconomic students more than it did the higher socioeconomic students. As reported in chapter 4, the mean scores from both the students eligible for and not eligible for free and reduced-price school lunch corresponded to an on-level reading group placement based on the Scott Foresman Scoring Guide (p. T19, n.d.). However, among the students eligible for free and reduced-price lunch who were not participants of the Imagination Library program, there were nine students placed in the strategic intervention group and one student placed in the early reading intervention program (see Appendix B for a summary of scores). Yet, among the participants who qualified for free and reduced-price lunch there were three

students placed in the strategic intervention program and no students placed in the early reading intervention program (see Appendix B for a summary of scores). Therefore, these findings as well as the study findings from the ANOVA analyses reported in chapter 4 indicated that students not participating in the Imagination Library program considered economically disadvantaged were most affected. Furthermore, evidence from the study supported that lower income families had less access to the program because 64% of the nonparticipants qualified for free or reduced lunch as compared to 31% of free and reduced participants (see Appendix A for a stratified summary). These study results support recommendations from a 2003 study regarding the Imagination Library program for the need to recruit and maintain contact with lower income households (High/Scope Educational Research Foundation, 2003).

A gender achievement gap in reading and beginning literacy acquisition between boys and girls is evident in the research literature, particularly in the early years, as indicated by performance on beginning school assessments (NEA, 2009). This was supported by study findings that reported in chapter 4 the mean reading achievement score for females was higher than the mean for males. However, as reported in chapter 4 the reading achievement for males compared to females was not statistically different. In nonparticipants, the mean score between males and females was very similar, with males scoring slightly higher than females. However, within the Imagination Library group, female participants significantly outscored male participants. Therefore, findings based on the mean reading score differences based on gender supported the research literature

and indicated the Imagination Library program affected the mean reading achievement scores of the female participants more than it did the male participants of the program.

Practical application of these study results include ensuring that the lower income families in the community become more represented in the registration for the Imagination Library program. Increased registration of lower income families implies the need to better inform the community of the opportunity for free registration into the program. Also, parental education opportunities in creating a literate home environment may be necessary to support parents in understanding how to best take advantage of the free books. Further, parental education may be essential in creating awareness of the importance of reading to young boys prior to kindergarten (Trelease, 2001).

Implications for Social Change

It was not known in Sullivan County, Tennessee whether providing children birth to age 5 with one free children's book in the mail every month might impact instructional reading levels among kindergarten students. Study findings indicated there was no statistically significant difference in the beginning of the year instructional reading levels between the Imagination Library group and no Imagination Library group. However, the data revealed a consistent trend for the mean reading achievement score of Imagination Library participants to be higher than the mean reading achievement score of nonparticipants. Additionally, it was not known to what degree participating families used the free books and whether the length of participation or reported frequency of read-aloud sessions with Imagination Library books impacted beginning of the year instructional reading levels among kindergarten students at three rural elementary schools

in Sullivan County, Tennessee. Study findings indicated there was no significant difference between beginning of the year instructional reading levels and reported frequency of book readings or length of participation in the Imagination Library group. Social change was addressed by exploring the role an early intervention book-distribution program played on beginning of the year instructional reading levels among kindergarten students. Further implications for social change can be addressed by continuing the exploration into the role an effective Imagination Library program could play on the home environment, learning preparedness, emergent literacy skills, reading achievement, and future academic success.

A consistent trend in the overall sample data results from this study indicated Imagination Library participants had a higher mean reading achievement score than nonparticipants. Thus, a successful Imagination Library program has the potential to lessen achievement gaps by gender and social class. Specifically, increased registration in the program has the potential to change the school performance of rural students. In addition, increased efforts to supplement the Imagination Library program with parental education, has not only the potential to impact a rural community in Tennessee, but to potentially raise the performance of schools across the state of Tennessee.

Recommendations for Action

The results of the achievement gap by social class supported in this study are of particular interest to Tennessee legislators and state department leaders because the percentage of students in Tennessee recognized as economically disadvantaged is higher than the national average (SEDC, 2008; U. S. DOE, 2008a). Tennessee students score

below the national average percentage for reading proficiency (SEDC, 2008). The tendency that the participants of the Imagination Library program outperformed their nonparticipant counterparts is important when deciding funding and parent education opportunities across the state of Tennessee. The results indicating that the mean difference was higher for the free or reduced-price lunch participants compared to free or reduced-price nonparticipants than it was for the students not eligible for free or reduced-price lunch is important due to the achievement gap in Tennessee. The findings from this study indicate a possible trend for Tennessee students in grades 4 and 8 eligible for free or reduced-price school lunch to continue to score lower than students who are not eligible for free or reduced-price lunch (NCES, 2007).

Study findings can serve to inform educators of the role of the family in regards to emergent literacy acquisition, reading achievement, and future academic performance. The principals from the three participating elementary schools in Sullivan County, Tennessee were provided a photocopy of the results from this study. Findings can also inform legislators and state department leaders of the role of early reading programs in regards to school readiness. The Communications Director of the Governor's Books From Birth Foundation was emailed the results from this study. Finally, the study results can inform the Sullivan County Imagination Library Council of the effectiveness of the program on the reading achievement of kindergarten students graduated from the program. The local Imagination Library was mailed a photocopy of the results from this study.

Recommendations for Further Study

Providing children under the age of 5 with one free children's book in the mail every month did not statistically impact the beginning of the year instructional reading levels among kindergarten students. However, the data results revealed a consistent trend for the mean reading achievement score of Imagination Library participants to be higher than the mean reading achievement score of nonparticipants. Therefore, study findings and trends raise new research questions and design implications.

Study findings revealed that participants on free and reduced-price lunch outperformed nonparticipants on free and reduced-price lunch. However, when a lower income student had access to the program there was still an achievement gap. Even with participation in the program, lower income students were outperformed by the higher socioeconomic participants. Therefore, findings indicated participation lessened the achievement gap but did not completely account for the difference in achievement. This raises the question, Why was access to the program not enough to close the achievement gap? Study findings reveal several research areas in need of closer examination and a strong implication for future research is qualitative in nature. Qualitative parent interviews and observations of home read-aloud sessions may provide tentative conclusions about the differences in the home environment by social class and gender. A mixed methods study may also be appropriate to include a larger sample size for further statistical analysis. In addition, study findings uncovered new research questions, such as: Why did females who received the books show more growth than males who received the same books; What are the barriers to the Imagination Library registration process for

lower income families; and, How can we get the books in more lower income households?

Finally, the research literature iterates success in the early grades is indicative of later school success (AFT, 2009a). Research suggests students who start school at a disadvantage generally continue to perform at a lower reading level throughout high school (ALA, 2007; Kelly & Campbell, 2008; Strickland, 2002). Longitudinal research could be conducted to determine if the Imagination Library participants continue to outscore their nonparticipant counterparts and whether a statistically significant result ever occurs later in their school careers.

Conclusion

The purpose of this quantitative study was to determine the impact of Imagination Library participation on kindergarten reading achievement at three rural elementary schools in Sullivan County, Tennessee. A random sample of 90 was obtained from the 187 students enrolled at the three schools in August 2009. A one-way between-groups ANOVA (Kirkpatrick & Feeney, 2007) was used to test the hypothesis that reading achievement for Imagination Library participants was significantly different from nonparticipants and was also used to test the hypotheses of a relationship between reading achievement by gender and lunch status. A Spearman correlation (Gravetter & Wallnau, 2005) was used to test the hypotheses of a relationship between the reported frequency of read-aloud sessions with Imagination Library books and reading achievement among kindergarten students as well as a relationship between the length of time in the program and reading achievement.

Findings from this study failed to support that (a) providing children under the age of 5 with one free children's book in the mail every month significantly impacted the beginning of the year instructional reading levels among kindergarten students, (b) a gender achievement gap, or (c) that either the length of participation in the Imagination Library program or the reported frequency of reading the Imagination Library books to the children prior to kindergarten registration significantly impacted the beginning of the year instructional reading levels among kindergarten students. However, the findings from this study supported an achievement gap by social class. This supported research literature that iterates socioeconomic status is related to performance in school because data indicated the reading achievement for students who did not qualify for free and reduced-price school lunch compared to students who did qualify for free and reduced-price lunch was statistically different.

Further study into the achievement of Imagination Library graduates in Tennessee has valuable implications for social change. It would be important to research whether the Imagination Library program lessened the achievement gap by social class, and a mixed methods study that included a larger sample size for further statistical analysis may be appropriate. Qualitative parent interviews and observations of home read-aloud sessions could provide tentative conclusions about the differences in the home environment by social class and gender.

In conclusion, a consistent trend in the overall sample data from this study reported that the mean reading achievement score of Imagination Library participants was higher than the mean reading achievement score of nonparticipants. Although the

results were not statistically significant based on ANOVA analyses, the tendency was for the participants of the program to score higher than the nonparticipants. Importantly, study findings indicated that students not participating in the Imagination Library program considered economically disadvantaged were most affected. Evidence from the study supported previous research that lower income families had less access to the Imagination Library program. Study findings reveal that the Sullivan County Imagination Library program needs to better recruit and maintain contact with lower income households. Parental education opportunities in creating a literate home environment may be necessary to support rural families understand how to best take advantage of the free books.

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APPENDIX A: STRATIFIED SUMMARY

Population

98 boys, 89 girls

97 IL participants, 90 Nonparticipants

88 Free/reduced lunch, 99 Not free/reduced

Sample

45 Participants, 45 Nonparticipants

51 Boys, 39 Girls

43 Free/reduced lunch, 47 Not free/reduced

14 Free/reduced participants, 29 Free/reduced nonparticipants

24 Boy Participants, 27 Boy Nonparticipants

21 Girl Participants, 18 Girl Nonparticipants

7 Free/reduced boy participants, 7 Free/reduced girl participants

14 Free/reduced boy nonparticipants, 15 Free/reduced girl nonparticipants

31% of participants are free/reduced, 64% of nonparticipants are free/reduced

APPENDIX B: FREE AND REDUCED STUDENT SCORES

Free and Reduced Participant Reading Scores

Student ID Number	Reading Score
2	42
20	64
87	94
79	54
63	64
176	74
96	67
52	64
49	74
47	64
80	82
164	80
114	94
71	58

Free and Reduced Nonparticipant Reading Scores

73	72
17	42
24	56
65	72

98	81
75	40
78	68
85	62
61	32
132	72
76	70
34	72
5	82
81	68
50	15
141	62
109	39
82	46
86	44
41	78
22	66
3	62
157	94
7	82
64	54
46	84

15	66
31	60
39	56

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