2004

The Effects Pre-School Attendance has on Kindergarten Phonological Awareness Literacy Screening

Dennise M. Marcinko

Old Dominion University

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THE EFFECTS PRE-SCHOOL ATTENDANCE HAS ON KINDERGARTEN PHONOLOGICAL AWARENESS LITERACY SCREENING

A Research Project
Presented To
The Graduate Faculty Of The Department Of
Occupational And Technical Studies
Old Dominion University

In Partial Fulfillment
Of the Requirements for the
Master of Science Degree

By
Dennise M. Marcinko
December 2004
This research study was prepared by Dennise Marcinko under the direction of Dr. John M. Ritz in OTED 636, Problems in Occupation and Technical Studies. It was submitted to the Graduate Program Director as partial fulfillment of the requirements for the Master of Science Degree in Reading.

Approval By: ______________________________  ______________________________
Dr. John M. Ritz  
Advisor and Graduate Program Director  
Date
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CHAPTER I

Introduction

Preschool has become a norm in children’s early education. The increase in popularity of preschool has gained the attention of many parents and teachers. Pre-school is a program for children four years of age and is available in many public school districts for children at risk. Churches and day care environments also offer it. Preschool offers benefits that will carry children all the way through high school. These benefits include social skill development, pre-writing and early phonetics knowledge.

The social aspect of preschool enables the student to learn how to follow directions, share and learn to be independent. Another benefit of preschool is to teach students basic pre-reading and writing skills at an earlier age, which increases their readability.

All these skills are of great benefit to children and teachers. They enable teachers to focus more on instructional issues other than social, resulting in higher achievement on PALS testing.

Newport News School District has adopted a phonological test for all K-3 students called PALS (Phonological Awareness Literacy Screening). This test is a measure of student’s knowledge in phonological awareness, alphabet recognition, knowledge of letter sounds and spelling and rhyme awareness. This test is given twice a year, once in the fall and again in the spring. The test is then used to determine student’s instructional needs. In this study the researcher will analyze the benefits of attending preschool and its assistance in passing the PALS test in the fall kindergarten.
Statement of the Problem

The problem of this study was to determine if there is a relationship between students who do or do not attend pre-school and passing the fall kindergarten PALS test at Sedgefield Elementary.

Hypothesis

To solve this problem, the following hypothesis was developed:

$H_1$: Students who attend preschool will have higher rates of passing the fall kindergarten PALS test than students who do not attend preschool.

Background and Significance

Research has shown that preschool is becoming invaluable in early education. It develops the skills and traits to enable learners to work together and can result in higher IQ’s (Cline, 2002). The value of this study is effectual due to the overwhelming research that simply states the great benefits from early education. This study will also prove the importance of preschool by the success rate of passing fall Phonological Awareness Literacy Screening.

The skills achieved in preschool such as sharing, independence, learning to interact and communicate set a foundation for entering into kindergarten. Learning these skills, which are all pre-reading and writing skills, at an earlier age, enables students to get a start on literacy.

Preschoolers, age three to five, possess traits to make them absorb so much information at this age. The brain at this stage reinforces what the student needs and erases what it does
not need (D’Arcangelo, 2003). Preschoolers are very eager to learn and are excited to express their independence. During this period of growth, their language vocabulary grows 3,000 to 6,000 words (Cline, 2001, p. 1). The more stimulation, the more vocabulary development. What better time to fill the child with as much as we can. Formalized education can not ever begin too early. Knowledge is at a fresh stage at this point in a preschooler's life and the stage is set to begin developing reading skills. To correct a reading problem in 3rd or 4th grade is like remodeling an old house instead of building one from scratch.

The success in preschool also has a lot to do with parental involvement. The concerned parent enrolls their child in preschool and gives the child a head start. Some children that are less fortunate become at risk and may struggle all through their education. A study following students who attend preschool had a 71% success rate in graduating from high school, versus those that did not attend preschool (Cline, 2001).

Limitations

The findings in this research had two limitations. First, the data collected were dependent upon the accuracy of the information in each students file, whether or not they had attended pre-school. Secondly, the research was only limited to the population at Sedgefield Elementary and therefore the findings of this study may not be conclusive to all kindergarten students in Virginia.
Assumptions

The basic assumptions of this study were that all students who did not attend pre-school had received no type of education other than that exposed to in a home environment. Another assumption of this study was that students were administered the same kindergarten PALS test and presented in the same manner as to not distort the results. This was to ensure that the students do not receive any additional help or be presented with any difficulties in completing the test to the best of their ability. The final assumption was that the students, who did attend preschool, attended preschool the year previous to kindergarten.

Procedures

The variety of information needed to complete this study were the student’s academic records and their fall PALS scores. The academic records were used to determine whether or not the student attended preschool. These records were obtained from the school’s office. The PALS scores were needed to determine the individual scores of the students and were obtained from each kindergarten teacher.

Definition of Terms

The following definitions assist with the reading of this study:

PALS: Phonemic Awareness Literacy Screening.

EIRI: Early Intervention Reading Incentive.

Preschool: Formal education completed before entering kindergarten.
Overview of Chapters

In Chapter I, the problem was presented. This chapter also contained research goals and presented the framework for the research. Chapter II involved a review of literature to identify research that has already been done. Chapter III was comprised with methods and procedures of the study. It discussed the population used to conduct the research as well as an explanation of the instruments used and the process for data collection.

Chapter IV consisted of findings of the research and the entire research study will be concluded with Chapter V, encompassing a summary, conclusion and recommendations.
CHAPTER II

Review of Literature

Chapter II of this study is the Review of Literature. This chapter provides an overview of Phonological Awareness Literacy Screening (PALS) and Pre-school. Many studies have been conducted on the importance of early childhood education, however no studies have been conducted related to the outcomes of formal testing in kindergarten pertaining to PALS testing. This chapter will provide a synopsis of the history and importance of PALS testing and research studies pertaining to the benefits, long term effects and cost analysis of preschool.

Phonological Awareness Literacy Screening

In 1997 Virginia established an initiative to help schools identify children in kindergarten and first grade in need of additional instruction in reading. This initiative is the Early Intervention Reading Initiative (EIRI). Due to this need, the government provided funds to schools to provide students with additional help when needed. The EIRI also provided teachers with a screening tool to help them identify those students who were at or below grade level and who would benefit from the additional help. The University of Virginia created the PALS test and it was used voluntarily in grades K-3 by 98% of Virginia’s schools (PALS, 2000). The PALS test assessed phonological awareness, upper and lowercase alphabet recognition, concepts of word, knowledge of alphabet sounds and word recognition in isolation.
Phonological awareness is the ability to identify and manipulate speech sounds. Speech sounds being rhymes and beginning sounds. PALS tests these skills through having the child identify two pictures that rhyme through a choice of four. Assessing beginning sounds is accomplished in the same manner. The student is given one picture and will need to choose the picture of three that begin with the same beginning sound.

Recognition of upper and lowercase letters and their sounds is a crucial element to literacy success. PALS assesses these skills through finding their ability to produce letter sounds in isolation. The student is shown each letter of the alphabet and he/she is to say the sound individually. PALS also assesses letter recognition by showing the student each letter and the student stating the name of the letter. Another skill PALS assesses is the concept of word which is an understanding of words, letters and sentences (Tompkins, 2003). PALS evaluates this skill by the teacher pointing to a word and asking the child to say the word.

The concept of word is another important part of literacy. The students need to understand what a word, letter or sentence is when teachers are talking about it in reading. The final skill evaluated is spelling. Through the spelling assessment the child is given a word, such as fan and is asked to write the sounds they hear. This evaluates the stage the child is in with letter recognition, sounds and the ability to pull the sounds together. All of these skills are precursors to reading and are very important to master to be successful in reading.

Phonological awareness and alphabet recognition are the most important predictors of early reading achievement. Both are necessary for children who are learning to read in an alphabetic written-language system. PALS offers a tool for teachers to evaluate and
guide instruction concurrently to offer the additional help to those who are in need.

Closing the literacy gap starts in preschool and kindergarten. Diagnosing the area of need early helps to close the gap in later years. Research has shown that students at risk in first grade will continue to widen the gap each successive year, making the importance of preschool even more convincing as an important start in education (PALS, 2000).

Pre-School

Research has indicated that early learning has lasting results not only in skills and competencies but also as a cost saver. Several research studies support this concept. The High/Scope Perry Study, which began in 1962, Abecedarian Project beginning in 1972, and the Chicago Child-Parent Center Program conducted in 1988, have been conducted to prove the lasting effects and benefits of preschool. From this, pre-school has gained the attention of parents, teachers and government (Cline, 2002). Between 1965 and 1989, the percentage of three and four year olds attending preschool in the United States nearly quadrupled and the numbers have continued to soar (Ferrandino, 2001). Solid preparation in preschool can benefit not only in the early grades but also for many years to come. Pre-school is a program for students age three to four. The program gives the students social and academic readiness skills for kindergarten. Pre-school teaches children how to sit and listen to a story, share, follow directions and how to behave in a social setting. The level of maturity and independence gained in preschool significantly helps them adjust quickly in kindergarten (Audet, 2002). Academically students are taught how to write their names and recognize colors, shapes and the letters of the alphabet (Rose, 2002). Kindergarten teachers have noticed a difference between students that have
attended preschool from ones that have no exposure other than home. They are more prepared and excited to learn and know what a crayon is and how to sit and listen to a story (Rose, 2002). The transition to kindergarten is made with ease and the time spent teaching rules and routines can be spent teaching academics (Rose, 2002). Kindergarten transition is only a piece of the puzzle as to why preschool is important. Numerous research studies have been conducted to suggest the advantages of preschool (Audet 2002).

The High/Scope Perry Project selected students randomly and assignment was kept confidential. The program started in 1962 and is still following students. The aim of the project was to focus on ten categories: creative representation, language and literacy, social relations and personal initiative, movement, music, classification, serration, numbers, space and time (Kappan, 2003). Children participated in small and whole group activities and the instruction followed a constructivist and cognitive approach as developed by Piaget, stating that children are active learners (Rose, 2002). The study resulted in higher graduation rates, 71% as opposed to 54% of non-participants and lower arrest rates. The participants were more likely to own their own homes, have stable marriages and higher incomes (Kappan, 2003). The cost benefit of the study was a four to one ratio, meaning that society received four dollars to every dollar spent on the project.

The next study was the Abecedarian Project. This study provided children from birth to age five early education such as preschool and daycare to see if the early education made a difference through the age of twenty-one. The study resulted in the students having more years in school and more enrolled in four-year colleges. Forty-seven percent of the group worked in skilled jobs, compared to twenty-seven percent of the controlled group.
The cost of the program was $13,900 per child. However, the benefit ratio to society was seven to one (Kappan, 2003).

The final study conducted was the Chicago Child-Parent Center Program (CPC). The study was larger than the other two studies and the children were not randomly assigned to groups. High parental involvement was encouraged. The study focused on three categories: body images and gross motor skills, perceptual/motor and arithmetic skills and language. In 2000 the study followed up and found that the students had lower crime rates, higher school completion rates and fewer retentions (Rose, 2002). The cost/benefit of the CPC was seven to one.

Return on investment is a major concern to the government in deciding whether preschool programs should be mandated. In 1993, the Schweinhert et al. study concluded that the programs returned to taxpayers $88,433 per participant (Schweinhart, 1994). These sources came from savings in schools due to the lesser need for special education services, saving in welfare assistance and saving to the criminal justice system (Schweinhart, 1994).

Summary

The High/Scope Perry Study, the Abecedarian Project and the Chicago Child-Parent Center Program concluded that high quality programs for young children produce significant literacy benefits to children. The EIRI has given teachers a tool to assess the needs of children. Parents, teachers and the community need to become aware of the importance of early education to close the literacy gap. Research has proven over and over that preschool does increase education potential and produce quality citizens for our
future society. Although the costs of these programs are high, the return financially and educationally is well worth the investment. In the following chapter the researcher will discuss the population used to conduct the study, how the PALS test will be used and the procedures for administering the test and collecting data.
CHAPTER III

Methods and Procedures

This study consisted of an experimental research methodology. The purpose of experimental research is to investigate the cause and effect relationships by exposing one or more experimental groups to one or more treatment conditions and comparing the results to one or more control groups. The variables must be carefully manipulated in order to satisfy the research goals. This chapter discusses the population of the study, research variables, instrument use and classroom procedures. It will also include the methods for data collection and statistical analysis.

Population

The population of this study consisted of forty-seven kindergartners with a mean age of 5.4 years at Sedgefield Elementary in Newport News, Virginia. Seventy-six percent were males and twenty-four percent were females. The population came from various ethnic backgrounds resulting in ninety-five percent African American, three percent Caucasian and two percent Asian students. Forty-six percent of the population attended pre-school, while fifty-four percent had no formal pre-school experience. The population demographics were obtained from the school office after acquiring consent from the parents. All students performed the same test for the study.
Research Variables

Through experimental research the researcher should have rigorous management of the variables and conditions through the study. The independent research variable for this study was the actual attendance of preschool. Students either attended private, public or no pre-school. This variable may cause inaccurate data due to the lack of control the researcher has on the variable. The dependant variable was the passing scores on the PALS test. The researcher has control of collecting data and the source of data.

Instrument Use

The instrument used in this study was the PALS assessment. This test was created by the Curry School of Education at the University of Virginia. The test was given voluntary by ninety-eight percent of all Virginia schools. The purpose of PALS was to assess students in five different areas: letter recognition, letter sounds, rhyming words, spelling and concept of word. The assessment was given in small groups and individually by the classroom teacher. There was no time limit for the students to complete the test. Completion of the test gave teachers a tool to guide instruction.

Classroom Procedures

The fall kindergarten PALS test was taken in October after entering kindergarten. The assessment was given to every kindergartner by the classroom teacher within a two-week time frame. The children were assessed in five different areas: letter recognition, letter sounds, rhyming words, spelling and concept of word. The teacher gave the test one-on-one, except for spelling, which was given in a small group setting. The teacher
was given specific guidelines to follow in insuring proper administration of the test. The students had no timeframe for completion of each section.

Methods of Data Collection

Data were collected using scored data in all five areas of the PALS test. After completion of the test, the teacher scored each section individually and calculated a summed score for the entire test and also a score for each section of the test. Approval was obtained from the school administrator to use the data. After the approval was received, the teacher conducted conferences with each students’ parent about the results of the testing and obtained permission from the parents to use the data. The students’ names were kept confidential. Finally, the data were collected and compared one group to the other to determine if there was a cause and effect relationship.

Statistical Data

Chi-square was used for statistical analysis of the study. This method was chosen because nominal data were used in the study. Also, the researcher needed to determine whether the frequencies observed in the sample deviated from expected frequencies.

Summary

This chapter discussed the type of population used to complete the study. It also identified the attendance of preschool as a research variable and the possible effects of the variable. The instrument used for the research was the PALS test and methods for
data collection were discussed. Administrative permission was obtained from the school
district as well as the school principal to complete the study. Chi-square was used to
determine the statistical analysis of frequencies in the study. In the following chapter the
researcher will discuss the findings of the research study.
CHAPTER IV

Findings

This research study was conducted to determine if there was a relationship between students who do or do not attend pre-school and passing their fall kindergarten PALS test at Sedgefield Elementary. Data from forty-seven PALS assessments from Sedgefield Elementary were used to determine the outcome of the research. The statistical analysis and findings were presented in this chapter.

Data Analysis

The data for this research study were collected from three kindergarten classes at Sedgefield Elementary School. There were a total of forty-seven students assessed. The tests were administered in the same manner to each student by their individual teacher. The data were then collected and analyzed. These data were compared to a benchmark score predetermined by PALS and were an accumulation of the students’ rhyme, beginning sound, letter recognition, letter sound and concept of word scores. These scores were called sum scores.

The sum scores were compiled and compared to the benchmark in PALS tables to better analyze the data. The data in Table 1 consisted of the sum scores received for nineteen students who did not attend pre-school. The data in Tables 2 and 3 consisted of the sum scores of students that did attend preschool.
Table 1. Non-Attendee Scores

<table>
<thead>
<tr>
<th>Student No.</th>
<th>Student Sum Score</th>
<th>PALS Benchmark</th>
<th>Pass/Fail</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>60</td>
<td>28</td>
<td>Pass</td>
</tr>
<tr>
<td>2</td>
<td>72</td>
<td>28</td>
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<tr>
<td>3</td>
<td>58</td>
<td>28</td>
<td>Pass</td>
</tr>
<tr>
<td>4</td>
<td>45</td>
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<td>43</td>
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<td>6</td>
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<td>42</td>
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<td>Pass</td>
</tr>
<tr>
<td>8</td>
<td>37</td>
<td>28</td>
<td>Pass</td>
</tr>
<tr>
<td>9</td>
<td>12</td>
<td>28</td>
<td>Fail</td>
</tr>
<tr>
<td>10</td>
<td>25</td>
<td>28</td>
<td>Fail</td>
</tr>
<tr>
<td>11</td>
<td>9</td>
<td>28</td>
<td>Fail</td>
</tr>
<tr>
<td>12</td>
<td>43</td>
<td>28</td>
<td>Pass</td>
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<tr>
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<td>Pass</td>
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<td>17</td>
<td>24</td>
<td>28</td>
<td>Fail</td>
</tr>
<tr>
<td>18</td>
<td>18</td>
<td>28</td>
<td>Fail</td>
</tr>
<tr>
<td>19</td>
<td>36</td>
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<td>Pass</td>
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</table>
Table 2. Pre-School Attendee Scores

<table>
<thead>
<tr>
<th>Student No.</th>
<th>Student Sum Score</th>
<th>PALS Benchmark</th>
<th>Pass/Fail</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>11</td>
<td>28</td>
<td>Fail</td>
</tr>
<tr>
<td>2</td>
<td>68</td>
<td>28</td>
<td>Pass</td>
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<td>3</td>
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<td>5</td>
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<td>28</td>
<td>Pass</td>
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<tr>
<td>19</td>
<td>86</td>
<td>28</td>
<td>Pass</td>
</tr>
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Table 2. Pre-School Attendee Scores Continued

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<th>Student No.</th>
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<th>PALS Benchmark</th>
<th>Pass/Fail</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td>86</td>
<td>28</td>
<td>Pass</td>
</tr>
<tr>
<td>21</td>
<td>63</td>
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<td>Pass</td>
</tr>
<tr>
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<td>28</td>
<td>Fail</td>
</tr>
<tr>
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<td>12</td>
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</tr>
<tr>
<td>27</td>
<td>12</td>
<td>28</td>
<td>Fail</td>
</tr>
</tbody>
</table>

Statistical Analysis

The data were analyzed using the Chi-Square test to determine if there was a significant statistical difference between the scores of students who did not attend pre-school and of those who did attend pre-school. The Chi-Square data were represented in Table 3. Completion of the Chi-Square test concluded with a value of .5503. A degree of freedom of one was used. The level of significance was measured at the 0.05 level and 0.01 level. The value at the 0.05 level was 2.710 and the value at 0.01 level was 5.410.
Table 3. Chi-Square Matrix

<table>
<thead>
<tr>
<th></th>
<th>Pass</th>
<th>Fail</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attended Pre-School</td>
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<td>8</td>
</tr>
<tr>
<td>Non-Pre-School Attendance</td>
<td>12</td>
<td>8</td>
</tr>
</tbody>
</table>

Summary

The research study was conducted to determine if there was a relationship between students that attended pre-school or not and their achievement on the fall kindergarten PALS test. The data were collected from forty-seven kindergarten students attending Sedgefield Elementary. The data were then complied and analyzed using Chi-Square to determine if there was a statistical significance in the data. In the following chapter the researcher will summarize the study and make conclusions and recommendations for further studies.
CHAPTER V

Summary, Conclusions and Recommendations

Chapter V will summarize the research study. Conclusions of the study and recommendations for future studies will be included in this chapter as well. The hypothesis will be restated and determined whether it was accepted or rejected. Recommendations will be determined from the outcome of the analysis.

Summary

This research study compared the attendance of pre-school with the outcome of the PALS assessment for elementary students. Attending pre-school has become as important as attending kindergarten and has gained the attention of many parents and teachers. The purpose of this research study was to determine if there was a relationship between students who did or did not attend pre-school and passing of their fall kindergarten PALS test. To solve this problem the following hypothesis was developed:

\[ H_1: \text{Students who attend pre-school will have higher rates of passing the fall kindergarten PALS test than students who so not attend pre-school.} \]

The purpose of this study was invaluable due to the overwhelming amount of research that supports the attendance of pre-school. Learning literacy skills at an earlier age has enabled students to excel in their education. Studies have shown that students who attend pre-school have a 71% success rate in graduating from high school (Cline, 2001). The outcome of this research had two limitations. First, the data collected were dependent upon whether the student’s file contained accurate information in regard to pre-school
attendance. Secondly, the population was limited to only those students whom attended Sedgefield Elementary.

The population of this study consisted of forty-seven kindergartens with a mean age of 5.4 years. Seventy-six percent were females and twenty-four percent were males. The population in ethnic background was ninety-five percent African American, three percent Caucasian and two percent Asian.

The instrument used to measure the students’ skills was the PALS assessment. The PALS assesses students in areas of letter recognition, letter sounds, rhyming words, spelling and concept of word. The test was administered in small groups and individually by classroom teachers.

Data were collected using scored data in all five areas of the PALS assessment. These included rhyme, letter sounds, letter recognition, concepts of print and spelling. After completion of the test, the teacher scores each section of the test individually and calculated a summed score for the entire test. Approval was obtained from the school district and the school administrator. The student’s names were not used in the study, therefore no parental consent was needed.

Chi-Square was used to analyze the collected data. This method was chosen because nominal data was used in the study. The value computed through Chi-Square was .5503.

Conclusion

Preschool is becoming a crucial part of early childhood education. Due to the increase of curriculum in kindergarten, attending preschool gives students a head start to succeed in kindergarten. This research study was conducted to determine if there was a significance
in students who attended preschool and their fall PALS assessment scores. The following hypothesis was used to test the problem:

\[ H_1: \text{Students who attend pre-school will have higher rates of passing the fall kindergarten PALS test than students who do not attend pre-school.} \]

Data were complied and compared using the Chi-square statistical analysis. The result from that analysis was .5503. This meant that the difference between students who attended and who did not attend pre-school prior to kindergarten were not significant at the .05 (2.710) level, nor were they statistically significant at the .01 (.5410) level.

Through the data analysis it is concluded that the hypothesis be rejected. Since the data did not show a significant statistical difference, it is then significant in this study that students who attend pre-school do not have a higher rate of passing the fall kindergarten PALS assessment.

Recommendations

Future research studies should consider factors influencing this study. Those factors being the population of students being assessed, types of pre-schools and teacher knowledge. This study only assessed forty-seven students. Future research studies may want to assess a larger and varied population which may result in a more accurate analysis of the research. Students whom did not attend pre-school and passed the PALS test may have come from literature rich home environments which were higher than the pre-school environment. Consequently, other studies may want to investigate further as to the types of pre-schools the students attended. One pre-school may only offer social skills, while others offer academic skills as well.
Another factor influencing this study may have been the knowledge of the teacher. Although the PALS test was given in a specific manner, some teachers may not have an understanding of what they were assessing or been trained on administering the test. Therefore, the teachers years of teaching and experience with administering the assessment may be a consideration for further studies.

The results of this study were one instance of the assessment. To further evaluate student success on the test, researchers can look at the individual parts of the test to determine if a specific weakness or strength was developed in pre-school. Doing this will give teachers and parents a better understanding of their students literacy development and whether pre-school is an advantageous choice.
References

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