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**THE RELATIONSHIP BETWEEN PALS SCORES AND  
CLASSROOM PERFORMANCE**

A Research Report  
Presented to the Graduate Faculty  
of the Department of Education  
at Old Dominion University

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

By  
Robin Jordan  
August, 2004

APPROVAL PAGE

This research paper was prepared by Robin M. Jordan under the guidance and direction of Dr. John M. Ritz in OTED 636, Problems in Occupational and Technical Studies. It was submitted to the Graduate Program Director as partial fulfillment of the requirements for the Master of Science Degree.

APPROVAL BY: John M. Ritz 7-26-04  
Dr. John M. Ritz  
Advisor and  
Graduate Program Director  
Date

ABSTRACT

THE RELATIONSHIP BETWEEN PALS SCORES AND CLASSROOM  
PERFORMANCE

Robin Jordan

Old Dominion University, 2004

Advisor: Dr. John Ritz

The PALS assessment was developed by the University of Virginia to identify Kindergarten through third grade students that had weak reading skills. There are several subtests that make up the PALS assessment, but the portion used in this study was the phonics/spelling portion. Previous studies were conducted by University of Virginia researchers and did not analyze the subtests of the assessment.

The researcher in this study developed a phonics assessment and wanted to compare its results to the PALS phonics/spelling test. A local, suburban elementary school was chosen to participate and permission was obtained for 31 participants. Classroom teachers aided the researcher in the data collection of the two assessments. A Chi-Square analysis was completed on the data, which was found not to be significant. A majority of participants passed both assessments, though there were five that passed the PALS that did not pass the second assessment. Though not significant, there were participants that were not identified by the PALS assessment that were identified with the researcher-developed assessment. Future studies could compare the PALS with published phonics assessments and use alternate locations to find participants.

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## CHAPTER I

### Introduction

During the 1990s, there was a call among legislators, parents, and educators to increase student achievement. The Virginia legislators mandated many new initiatives to guide schools through this education reform. In 1997, the Virginia Acts of Assembly passed legislation called Virginia's Early Intervention Reading Initiative (EIRI), which would assist school divisions in identifying and remediating kindergarten and first graders across the Commonwealth. The University of Virginia developed the Phonological Awareness Literacy Screening (PALS) test to accomplish this goal. In 2000 the assessment was expanded to include all second and third graders. Since that time, elementary schools all across Virginia have been using this test to become better educated about individual student strengths and weaknesses (PALS Background, 2003, Retrieved September 14, 2003, from <http://pals.virginia.edu/Technical-Information/Background.asp>).

Across the Commonwealth of Virginia, 98% of public school districts voluntarily use the PALS test to screen all primary students (PALS Background, 2003, Retrieved September 14, 2003, from <http://pals.virginia.edu/Technical-Information/Background.asp>). The research and development of this assessment is funded by the Virginia Department of Education's (VDOE) EIRI. There are five essential components of literacy that are screened: phonemic awareness, phonics, fluency, vocabulary, and comprehension. Educators test students in these areas to obtain a better picture of a student's reading habits and weaknesses. Students are tested in the spring and fall of

each primary school year (PALS Homepage, 2003, Retrieved September 14, 2003, from <http://pals.virginia.edu/Technical-Information/Background.asp>).

School districts gain a vast amount of information about student ability by analyzing test data. The purpose of the PALS test is to identify students functioning below grade level in the five literacy areas. These students receive remedial reading instruction that is funded by the EIRI. The PALS test also serves as a tool for teachers to analyze students' reading strengths and weaknesses. Data are collected on each of the literacy categories that educators can use to find student weaknesses. Teachers are then able to provide instruction in the necessary areas.

#### Statement of the Problem

The purpose of this study was to determine the relationship between the PALS scores of elementary students and their classroom performance on spelling and phonics assessments.

#### Hypotheses

To guide this problem, the following hypotheses were established:

H<sub>1</sub>: Students who earn a superior score on the PALS test will perform better on phonics assessments.

H<sub>2</sub>: A majority of students who receive a failing grade on phonics assessments will meet or exceed the PALS benchmark score.



### Background and Significance

In 1997, the Virginia Early Intervention Reading Initiative (EIRI) legislation was passed with the purpose of identifying students in kindergarten through third grade who have reading difficulties. The PALS test was designed to assess student reading abilities as designated in the EIRI. Two and a half hours of intervention services each week were to be provided for each student failing to meet the benchmark score. The state and local school districts each paid for half of these intervention services. Incentives were also furnished to school divisions that provided the remedial services (Education Commission of the States, 2003).

The PALS test was first developed in 1997 and later revised in 2000 to include second and third grade students. Few studies had been conducted to determine if the PALS test is valid and accurately identifies all students in need of additional reading assistance. The PALS website listed published works related to the PALS test. There were fourteen listed and only four were not the work of faculty members at the University of Virginia (PALS research, 2003). Dissertations that incorporate the PALS test has also been found, but many were from University of Virginia students (Iverson, 2002; Martinez, 2002).

Classroom teachers have noticed that the PALS test does not identify some students who are in need of additional reading assistance. “The PALS test does show who my students with the poorest reading skills are. There have been several instances where students who are struggling readers and do need some sort of assistance barely meet the PALS benchmark and no services are available to them because they didn’t score low enough” (C. Rowe, personal communication, September 24, 2003). Students

who only score one or two points above the benchmark do not receive any additional instruction according to PALS and therefore are in danger of falling through the cracks.

There are several components to the PALS test used to identify students with reading difficulties. First through third grade students are given a spelling test. There is a checklist in the answer packet that teachers use to record the results of each subtest. If the student gets the identified sound spelled correctly, a check is given in the box. If the student spells the word correctly then another check is given. The phonics skills that are tested in this spelling test are beginning sounds, ending sounds, digraphs, blends, short vowels, nasals, and CVCe words. Second graders also are tested on long vowel sounds and third graders are tested on the previously mentioned skills plus r and l controlled words.

After the spelling test is administered, students read word lists to the teacher. When a score of 15 correct words out of 20 is reached, the teacher may stop and know where to begin the next task. The final portion of the PALS test is an oral reading section. The teacher uses the level of the word list to determine the passage to be read. The teacher makes a running record while the student reads. The student is timed to determine the extent to which he or she is a fluent reader. Comprehension questions are also asked to determine the student's understanding of the read material.

The portion of the PALS test that will be used in this study is the spelling/phonics portion. This is because it is used along with the word list score to determine the grade level benchmark. The spelling portion tests the student's ability to decode and use phonetic strategies to spell words correctly. The word list makes up the other part of the

score, but it is not included in this research, because to decode these words students must use the same phonetic strategies.

This study will differ from previous PALS research in a number of ways. First, a researcher not affiliated with the University of Virginia conducts the research. Second, this research will focus on only a portion of the test and focus on how it is used in Virginia schools. Finally, this study will seek to identify the students that are not identified by this test, but need help with their reading. This study is a significant undertaking because there have been very few studies conducted that have had similar goals.

#### Limitations

The limitations that guided this study include the following factors:

1. Scores of suburban elementary school students cannot be generalized across the entire state. Scores of urban and rural schools may be different than that of a middle class suburban school.
2. Parent permission was not obtained for all possible subjects. All students that participated in the PALS testing brought home a letter asking for parental permission to take part in the study. Some students did not return the permission form and other parents declined to have their child participate.
3. Spelling and phonics assessments can be modified to meet the needs of special education students, while the PALS test cannot. Special needs students can have modifications to their class work made while components of the PALS test are given to all students in the same manner.

4. Classroom assessments and the PALS test are not administered the same day and so external factors can affect students on specific testing days. Factors such as health, mood, and medication can differ for some students from day to day. The exact situation and environmental conditions cannot be identical for all testing days.

5. Phonics and spelling ability is only measured in testing situations using particular formats. Several testing formats are often used when educating and testing students. For this study, a more standard format was used. The assessments were in a format that some students may be unfamiliar with.

### Assumptions

This study is based on the following assumptions:

1. Students ability will be extremely varied. This assumption was based on the idea that public schools teach all learners, no matter their ability level. Some students will be on grade level, but many will be above or below grade level expectations.
2. Students have received phonics and spelling instruction daily since their formal education began. This assumption was based on the idea that all schools use phonics and spelling to educate students to read and decode words.
3. Identical classroom assessments and PALS tests were given to all students. This assumption was based on the idea that consistency is needed to ensure valid test results.

## Procedures

In the spring, kindergarten through third grade students in Virginia were given the PALS assessment. The portion used in this study was the spelling assessment. Upon completion of the spelling test, classroom teachers used the PALS score sheet to record student answers. Checks were placed in boxes to denote correct answers that were given for particular phonetic sounds. Students also took spelling and phonics assessments that measured the identical phonetic skills as the PALS test. These assessments also were teacher graded.

The data for each subject was inserted into a table where assessment scores were calculated. A Chi-Square test was performed because multiple factors related to the study and population variances that may skew the results were present. Chi-Square tests were conducted on both the phonics and PALS scores.

## Definition of Terms

The following terms are defined to clarify this study:

EIRI- This acronym for the Early Intervention Reading Initiative legislation that was established in 1997 to assist schools in identifying kindergarten and first grade children in need of additional reading assistance. In 2000, EIRI was expanded to include second and third grade students.

Intervention- In this study, the term intervention is used to describe additional reading instruction for students that have not reached the grade level benchmark on the PALS test.

PALS- This acronym for Phonological Awareness Literacy Screening was developed by the University of Virginia with EIRI grant money.

VDOE- This acronym stands for the Virginia Department of Education. This agency makes policies for all public school education in Virginia.

Reading First- A grant based reading initiative that is part of the No Child Left Behind 2001 federal legislation.

Phonological Awareness- This type of awareness is the ability to attend to the sounds and structure of language and understand that these sounds and structures have distinct meaning.

Spelling and Phonics Skills- Those skills that are tested by PALS: beginning and ending sounds, digraphs, blends, short vowels, nasals, CVCe, and long vowels.

Running Record- While a student reads, the test administrator records all errors and self-corrections the student makes. This information is used to determine the skills the student uses to decode words.

### Overview of Chapters

The PALS test was developed by the University of Virginia through legislation grant money. This assessment is used in most Virginia schools. There is a lack of objective research on the reliability and validity of the PALS test. Questions have been raised about PALS benchmark levels and the need to identify students who are in need of a reading intervention but are not identified with the current test.

In Chapter II, current literature on the PALS test shows that many students are identified as having reading difficulties. These tests, often conducted by University of

Virginia researchers, are often not objective. Research has been conducted on the various types of phonics skills and what importance they play in the development of a fluent reader.

The methods used by classroom teachers to collect data will be discussed in Chapter III. The PALS test will be conducted and scored by the classroom teacher. The classroom teacher will administer a phonics assessment developed by the researcher and which the researcher will score.

In Chapter IV, the Findings will show that students who scored high on the PALS test also received a passing score on the phonics assessment. Many students that scored near the PALS benchmark passed the additional spelling and phonics assessment, though there were several participants that did not.

The effectiveness of the PALS test to correctly identify students in need of additional interventions to assist in phonics and reading will be determined in Chapter V. Based on the findings, recommendations will be made on how to alter the PALS test or benchmark scores to identify the students with reading difficulties.

## CHAPTER II

### Literature Review

This chapter describes the available research relevant to the research goals of this study. This review is organized into four sections: (1) a description of phonological awareness and its importance, (2) a review of available research on the PALS assessment, (3) the relationship between spelling and phonics, and (4) literature that relates to phonetic interventions.

#### Phonological Awareness

The knowledge of the sound structure of language is known as phonological awareness. There is a sequence of levels of increasing difficulty that children move through their early years. A young child enters the most basic level of phonological awareness when he or she is able to distinguish between sound units. The knowledge of sound units eventually develops into the ability to segment words into phonemic components (Swank & Catts, 1994).

Phonics instruction takes place daily in many elementary schools across the country. Previously conducted research contends that children who receive phonics instruction in school have an advantage over those who do not. Phonics instruction equips children to become independent readers at an earlier age (Paulu, 1988). The level of phonetic skills can also serve as a predictor of future reading success (Arnold, 1996).

In 1999, Foes and Sloan studied the relationship between direct phonics instruction and improved reading scores in second and third grade classrooms. The students were all considered poor readers and it was determined that they were unable to



sound out words or read fluently. After the phonics component was implemented in the school reading curriculum, the test scores of students increased. It was shown that the phonics instruction gave students the necessary strategies to read independently.

The assessment of phonological abilities is an important tool in identifying children who have reading difficulties or are at risk for developing difficulties later in their educational career. The identification and intervention of phonological problems is crucial in preventing reading problems (Kaminski & Good, 1996). An intervention must be made early into their education so these children can be assisted and given reading instruction.

#### Phonological Awareness Literacy Screening

The PALS phonological awareness test was developed by the University of Virginia and was commissioned by the Virginia Department of Education. The purpose of this test was to screen and identify kindergarteners and first graders that were in need of additional reading instruction to supplement their education. PALS was later expanded to include second and third graders and is currently being used by elementary schools across Virginia. The research comparing the PALS test to other phonological screening assessments is extremely limited.

University of Virginia faculty members have compared the PALS to relevant Stanford 9 subtests for kindergarten and first grade, according to the Technical Manual and Report (Invernizzi, Meier, Swank, & Jeul, 1998). These subtests were similar to the PALS subtest used in the present research study. When compared to the first grade Stanford 9 subtests, about 50% of the correlations were significant. The kindergarten

Stanford 9 subtests had few positive correlations with PALS and some were even negatively correlated. The authors gave a possible explanation for the poor correlation between the PALS test and the Stanford 9. It was reported that the children had difficulty following some of the directions on the Stanford 9 test, which could have affected the results.

Matthews (2000) investigated the convergent validity of the PALS test to two phonological assessments that are widely used across the country. The PALS test, along with the TOPA (Test of Phonological Awareness), and the PAT (Phonological Awareness Test) was given to 28 kindergarten students. The researcher attempted to check for the validity of these tests by correlating the results of the different tests to determine if the results were consistent. The results found that the PALS and PAT tests were moderately correlated and the PAT and TOPA were moderately correlated on the beginning sound subtest. The PALS and TOPA were weakly correlated in all areas. It was suggested that correlation was not stronger because the assessment methods and tasks differ between the tests.

On the PALS website, which is monitored by UVA staff, there is a list of published works related to the PALS test (PALS Research, 2003). Listed are several newspaper articles that discuss the PALS test and research studies that have been conducted. There are fourteen sources referenced on the page. Ten of these studies were conducted by professors at UVA. Research studies and descriptive articles are not distinguished here. Many of the articles are descriptive, written to tell of the PALS test and its uses. No real research as to the validity and reliability of the PALS test is referenced.

The recently released Technical Reference for 2003 gives a great deal of information about the spelling portion of the PALS test and how it came into existence (Invernizzi, Meier, & Juel, 2003). Previous research indicated that phonics features were acquired in a sequence that included beginning consonants, ending consonants, consonant digraphs, medial short vowels in CVC words, consonant blends, pre-consonant nasals, silent-e long vowel words, other long vowel patterns, r- and l- controlled vowel patterns and finally ambiguous vowel diphthongs and digraphs. Specific words were selected to be included as test items because of the high frequency they were used in grade level books. Students received a point if they spelled the specific phonetic skill correctly, and another point was given if the students spelled the entire word correctly. This gave students credit for applying the phonics skill even though the word may be spelled incorrectly.

### Phonics and Spelling

Only a portion of the PALS test was used in this study. Task one is a spelling inventory that is designed to measure children's ability to use phonetic cues to spell a list of words. Phonics has long been linked to spelling ability. As early as 1989, Nelson researched the influence of phonics on spelling progress. The research concluded that there was a natural sequence to phonics instruction and that the influence of phonics on how children learn to read and spell is great. Decoding written English provides the appropriate background needed for students to become successful readers and writers (Fischner & Phyllis, 1993).

Once children have learned the phonetic cues that can be made with particular letters or combination of letters, their ability to spell greatly improves. Brunk, Teiman, Caravolas, Genesee and Cassar (1998) compared the spelling ability of students who had received phonics instruction to students that received whole language reading instruction. The results found that the phonics group proved to be more accurate spellers. The two groups were also given fictional words to spell. The group that received phonics instruction in the classroom was better able to spell the fictional words.

#### Intervention Recommendations

Once students have taken the PALS test, classroom teachers enter the results into the PALS website database. The spelling benchmark is a score of 20 for second graders. If the benchmark score was not reached, then it is recommended that two and a half hours of additional interventions be given to the child each week (PALS Background, 2003, Retrieved September 14, 2003, from <http://pals.virginia.edu/Technical-Information/Background.asp>).

Other sources have also recommended that if a certain level of phonics proficiency has not been attained then remediation should occur. Rack (1997) describes a Danish study where kindergarten students were given twenty minute training sessions that promoted phonetic awareness for the entire school year. Phonics games and exercises were the types of remediation that were used. At the end of the year the experimental group was compared to a control group through test scores. The experimental group out performed the control group on all of the post-test exercises, even though the control group had slightly higher scores on the pre-test exercises.

### Summary

Many studies have been conducted that stress the need for phonics instruction and assessment in primary aged students. Studies have also focused on the integral part phonics plays in the development of spelling skills. The PALS test is one assessment that is designed to identify students that have difficulties in their ability to decode words. The Technical Reference Guide states that 23% of students that participated in the PALS assessment during the Fall 2002 were identified as possibly having future reading difficulties and the use of an intervention was suggested (PALS Background, 2003, Retrieved September 14, 2003, from <http://pals.virginia.edu/Technical-Information/Background.asp>). There is a limited number of studies that have directly investigated the PALS test. The studies that have been done were conducted by University of Virginia faculty for use in the PALS Technical Reference Guide. It is hoped that this study will spark interest into this topic and other impartial researchers will explore this topic.

The data collected in this research problem will contribute to the limited number of studies that have been conducted concerning the validity of the PALS test. The data show that students with spelling and phonics weaknesses on the PALS test will also have weak classroom assessment scores, while students who earn passing scores on the PALS will also pass phonics assessments.

## CHAPTER III

### Methods and Procedures

The current research was of an experimental nature. The study consisted of two phonics assessments and the participant results for each test were analyzed. The first assessment to be given to participants was the PALS test; the second was an unpublished assessment developed by the researcher. A pass/fail grade was assigned to participant results. A Chi-Square test was performed on the data to determine the correlation of the two test scores. The subjects that participated in this research study were students from five homogeneous second grade classes in a suburban elementary school in Virginia. The research variables used as a focus for this study were the two phonics assessments previously described. All participants were administered these assessments on the same days and consistent testing conditions were employed.

#### Population

Participants were 31 second grade students ( $M = 7.4$  years) who attended a suburban elementary school in southeastern Virginia. A total of 83 second-graders were asked to participate in the study, but consent was only obtained from 37% of the students (Appendix A). Approximately 70% of the participants came from military families and 13 students were new to the school in the fall of 2003. Of the 31 students used in this study, 19 were females and 12 were males. Data concerning the ethnicity of the participants were available through the school office and showed the following: 12% African American, 4 % Latino, 5% Asian, 2% Other, and 77% White.

The school receives Title I educational funds because of the high number of families taking part in the free or reduced lunch program. Further information was not available on the socioeconomic status of students because of confidentiality laws.

### Research Variables

There were independent and dependent research variables in this study. There were two independent research variables. The first variable tested was the spelling/phonics portion of the PALS assessment. The second variable tested was an in-class, teacher developed spelling/phonics assessment. The dependent variable was whether the participants passed the PALS assessment and the teacher developed spelling/phonics assessment.

### Instrument Design

The ability of the students to use phonics skills was measured with the two instruments. Participants were first given the PALS assessment developed by the University of Virginia. The purpose of this test was to assess student knowledge of phonetic skills. It contained 20 words for students to spell. Phonics skills tested with this assessment that were correctly spelled were assigned a point. A total of six phonics skills were tested and the highest score possible was 40.

A phonics assessment designed by this researcher was also administered to students within a week of the PALS test administration (Appendix A). No phonics skills were directly taught in the second grade classrooms between the assessments. The unpublished assessment consisted of six subsections, each one focusing on the identical

skill tested by PALS. The test format varied between sections. Formats that were used included students being given a sentence and a portion of a word was omitted. Using context clues, the participants determined the word and wrote in the missing sounds. Another format used asked the participants to look at a word with a particular sound underlined. From four choices the participants picked the word that had the identical sound.

### Classroom Procedures

Informed consent was obtained from parents with a letter that was sent home giving permission to use the testing data collected for the PALS assessment and in-class phonics assessments. The purpose of the study was also stated followed by a guarantee that participant rights will be protected.

The PALS assessment was given to all second graders in the spring of 2004. The classroom teacher called out the words, which lasted approximately 15 minutes. Later that week, a teacher made phonics assessment was given to all participants, lasting about 20 minutes. Special needs students (total=6) received modifications and were read the assessment, but the majority of students completed the assessment individually.

### Methods of Data Collection

During the spring of 2004, second graders were given the PALS test by the classroom teacher. The phonics portion of the test was administered to the entire class at one time. Once the test was taken by students, they were analyzed using a scoring rubric. Later in the week the unpublished assessment was given and scored by the researcher.



Participants were randomly assigned an identification number and a pass/fail label was assigned to the scores. This ensured participant confidentiality and put the data in a form that could be tested using the Chi-Square significance test.

### Statistical Analysis

A Chi-Square test was used to determine the frequency that nominal data occurred. It was used for this research to note the frequency that the PALS and the researcher developed assessment produced similar results. The participants were from five classes and the methods of data collection were consistent in all classes. The Chi-Square was used to determine if there were relationships between the results of both assessments.

### Summary

The data for this study were collected in the spring of 2004 after consent was given to complete the research. Participants completed the assessments during the spring of 2004. The participants were a heterogeneous group of second graders at one elementary school. The PALS test was given first followed by an assessment developed by the researcher. The significance of the data and the frequency of correlation was measured by a Chi-Square analysis.

## CHAPTER IV

### Findings

This study was developed to determine the relationship between the PALS scores of local elementary students and their classroom performance on spelling and phonics assessments. A pair of assessments WERE used to attempt to measure this relationship. Once the data were collected they were put into a Chi-Square matrix and a statistical analysis was performed. The Chi-Square was used to determine if the frequency of the pass/fail rate of the two assessments were significantly different. The results were compared to a Critical Value of Chi-Square.

### Data Analysis

The data were analyzed for the participants once both assessments had been completed. The classroom teachers administered the assessments to the participants and returned them to the researcher. All second graders were given the PALS assessment, following the governing school system guidelines. Once the data were obtained the assessments were scored by the classroom teacher, then provided to the researcher. The researcher-developed assessment was also administered by the classroom teacher. The tests were forwarded to the researcher to score and analyze.

The researcher determined the raw score for each of the assessments. The PALS assessment assigned one point for every correctly spelled word, while the researcher developed assessment did not. There were 20 words on the PALS test that participants were asked to spell using the phonetic knowledge they possessed, some words testing multiple phonics skills at once. To assist the researcher in obtaining raw scores on

phonetic data only, these possible 20 points were deleted from the highest possible score. The highest possible score for the PALS phonics test was then determined to be 28, not including the points assigned to the correctly spelled words. The benchmark that the PALS deemed as a passing score was 20. A percentage was found using the ratio 20/28 and it was determined by the researcher that a passing percentage was 71 percent or higher on the PALS. That same pass/fail percentage was used on the researcher developed assessment for consistency. The highest possible raw score for the researcher made assessment was 24. A ratio equating to 71 percent on the researcher-developed assessment was 17/24. A pass/fail designation was also assigned to each score in order to perform further statistical analysis (Table 1).

Table 1: Participant Scores

<b>Participant Number</b>	<b>PALS Raw Score</b>	<b>PALS Percentage Correct</b>	<b>Pass/Fail</b>	<b>Researcher Developed Raw Score</b>	<b>Researcher Developed Percentage Correct</b>	<b>Pass/Fail</b>
1	25/28	89%	Pass	21/24	88%	Pass
2	28/28	100%	Pass	24/24	100%	Pass
3	23/28	82%	Pass	21/24	88%	Pass
4	26/28	93%	Pass	18/24	75%	Pass
5	28/28	100%	Pass	21/24	88%	Pass
6	23/28	82%	Pass	18/24	75%	Pass
7	28/28	100%	Pass	23/24	96%	Pass
8	23/28	82%	Pass	14/24	58%	Fail
9	22/28	79%	Pass	10/24	42%	Fail
10	28/28	100%	Pass	19/24	79%	Pass
11	28/28	100%	Pass	24/24	100%	Pass
12	25/28	89%	Pass	16/24	67%	Fail

<b>Participant Number</b>	<b>PALS Raw Score</b>	<b>PALS Percentage Correct</b>	<b>Pass/Fail</b>	<b>Researcher Developed Raw Score</b>	<b>Researcher Developed Percentage Correct</b>	<b>Pass/Fail</b>
13	28/28	100%	Pass	22/24	92%	Pass
14	28/28	100%	Pass	10/24	42%	Fail
15	25/28	89%	Pass	14/24	58%	Fail
16	27/28	96%	Pass	19/24	79%	Pass
17	27/28	96%	Pass	23/24	96%	Pass
18	28/28	100%	Pass	24/24	100%	Pass
19	27/28	96%	Pass	18/24	75%	Pass
20	28/28	100%	Pass	24/24	100%	Pass
21	27/28	96%	Pass	18/24	75%	Pass
22	25/28	89%	Pass	19/24	79%	Pass
23	23/28	82%	Pass	21/24	88%	Pass
24	28/28	100%	Pass	24/24	100%	Pass
25	27/28	96%	Pass	19/24	79%	Pass
26	28/28	100%	Pass	21/24	88%	Pass
27	28/28	100%	Pass	24/24	100%	Pass
28	17/28	61%	Fail	7/24	29%	Fail
29	27/28	96%	Pass	19/24	79%	Pass
30	28/28	100%	Pass	22/24	92%	Pass
31	25/28	89%	Pass	19/24	79%	Pass
mean		93%			80%	

The data were used to complete a Chi-Square statistical analysis for the nominal data. This statistic was used because the number of frequencies of each test was passed and failed were noted. The Chi-Square determined whether the frequencies of the pass/fail rates of the researcher developed test deviated significantly from the PALS pass/fail frequencies (Table 2).

Table 2: Chi-Square Matrix

	Pass	Fail
PALS Test	30	1
Researcher Made Test	25	6

Upon the completion of the Chi-Square statistical analysis a value of 2.012 was found to be the Chi-Square value. The degree of freedom was determined to be one. The hypotheses used to drive this research were directional, meaning that they stated an expected outcome. These directional hypotheses were known as one-tailed hypotheses and that designation should be used when analyzing numbers on the Chi-Square Critical Value Table. The value was found on the Chi-Square Critical Value table and at the 0.05 level of significance it was 2.710 and at the 0.01 level it was 5.410.

### Summary

The purpose of this research was to determine the relationship between the PALS scores of local second graders and their classroom performance on a phonics/spelling assessment. The data were collected and a statistical analysis was performed. Each participant was given a pass or fail designation on each of the two tests. The Chi-Square analysis was used on the data to determine if the difference in frequencies between the two assessments were significant. The data of 31 participants were analyzed and the Chi-Square was found to be 2.012.

## CHAPTER V

### Summaries, Conclusions, and Recommendations

The PALS test was developed by the University of Virginia in response to Virginia's Early Intervention Reading Initiative (EIRI). This legislation was passed to identify struggling readers in the early grades and provide remediation. Kindergarten through third grade students were assessed each spring and fall to obtain a better picture of students reading habits, strengths, and weaknesses and to identify students functioning below grade level. The purpose of the current study was to determine the relationship between the PALS scores of elementary students and their classroom performance on spelling and phonics assessments.

The researcher sought to find a relationship between the PALS test and classroom performance because it had been noted by some classroom teachers that there was a discrepancy between the two. Many students who were identified as below grade level passed the PALS and were not given additional assistance. The researcher developed a phonics test that tested the same skills as the PALS, but using a different format that was familiar to participants.

The current literature concerning the PALS test shows that many students who had reading difficulties were identified. The research, most often conducted by a researcher affiliated with the University of Virginia, serves as evidence that an extensive background of phonics greatly increases the likelihood a student will be able to read fluently at or above grade level.

Once obtaining permission from a parent of the second graders that were asked to participate, the researcher administered the unpublished assessment. A pass or fail designation was assigned to both assessments. A Chi-Square analysis was conducted on the data which determined the value to be 2.012.

### Summary

The PALS assessment was used in Virginia public schools to identify students in need of additional reading assistance. It was noted by classroom teachers that the PALS assessment did not identify all students in need of this additional assistance. Classroom performance did not match the score on the PALS assessment. This study was undertaken to determine the relationship between the PALS assessment and classroom performance. The researcher used two research goals to guide this study. These goals were:

H<sub>1</sub>: Students who earn a superior score on the PALS test will perform better on phonics assessments.

H<sub>2</sub>: A majority of students who receive a failing grade on phonics assessments will meet or exceed the PALS benchmark score.

This study differed from previous research in several ways. Previous research was often conducted by researchers affiliated with the University of Virginia, the PALS test creators. This study also focused on one subtest of the PALS assessment instead of the test as a whole, which few other studies have done. The research conducted also seeks to identify other students who need remediation that were not identified with the PALS assessment.

There were several limitations that guided this study. The school used in this study was a Virginia suburban elementary school. These findings cannot be generalized to all Virginia schools. Also, parent permission was obtained from only 37% of the possible subjects. Students with special needs may have received modifications or accommodations on the researcher made assessment in accordance with their Individualized Education Program (IEP). No students were given modifications or accommodations on the PALS assessment. The two assessments used in this study were administered on different days. External factors could have affected the participants. The two tests also used different formats. Students may not have been equally familiar with the various formats.

The population that participated in this study was second graders who attended a suburban elementary school in southeastern Virginia. There were a total of 83 possible participants, but parent permission was obtained from 31 students. Female participants made up 63% of the study, while males made up the remaining 37%. A majority of the participants were white (77%) and 23% were minority. The school population is predominantly enlisted military personnel living in base housing, several apartment complexes, and a few large single-family home neighborhoods. The school was designated as a Title I school due to the large number of free and reduced lunch students.

Two instruments were used to measure the phonics skills of participants. The first assessment given was the PALS test developed by the University of Virginia and used in all Virginia Public Schools. It contained 20 words that participants used the phonetic knowledge to spell. It drew upon their understanding of six phonetic skills. The second instrument was designed by the researcher and tested the identical phonics skills as the



PALS. This assessment varied in format from the PALS test. Participants were required to fill in the blank to complete the missing sound. In a second section participants needed to read the key word and pick from four choices of the word that had the same sound.

The two instruments were given by the classroom teacher during the same one week period. The PALS test was scored by the classroom teacher and the data were collected by the researcher. Once subjects completed the researcher developed phonics assessment the researcher scored those.

A Chi-Square analysis was performed on the data because test results were in the form of nominal data. This statistic measured the relationship between the two assessments and the frequency to which each was passed or failed by participants. The Chi-Square was compared to the Critical Value table at the 0.05 and 0.01 level for significance.

### Conclusions

There were two research goals that were used to guide this research. Based on the statistical analysis, conclusions can be drawn about these statements.

The first research goal stated: Students who earn a superior score on the PALS test will perform better on phonics assessments. According the Chi-Square results of test scores, this hypothesis was rejected at the 0.05 level of significance as it was 2.710. There was no significant difference between the scores of students on the two assessments. Those that scored high on the PALS often scored high on the researcher-developed test. Similar results can be found for those with medium and low scores.

The second research goal stated: A majority of students who receive a failing grade on phonics assessments will meet or exceed the PALS benchmark score. The Chi-Square statistical analysis determined there was no significant difference in the number of participants who failed the PALS and the researcher-developed test. According the Chi-Square results of test scores, this hypothesis was rejected at the 0.05 level of significance as it was 2.710. There was one student who failed the PALS and six that failed the researcher made assessment. There was not a significant difference in these numbers based on the population size used in the sample.

#### Recommendations

The results of this study can be used to provide future researchers in this field of study suggestions for further applications of this work and recommendations of future areas of study. These results should be used with other studies of the PALS and phonics assessments to further research and increase our understanding of student acquisition of phonics skills.

When comparing scores on the two assessments, there were small differences. These differences, though not significant according to the Chi-Square analysis, do show where a need for improvement of the PALS test can be made. Five participants passed the PALS test who failed the researcher's assessment. These results may show that a few students, though not a significant number, are incorrectly identified as possessing the appropriate phonics knowledge.

Future studies conducted could use this study and expand upon it in several ways. This research focused on the phonics portion of the PALS test. There are other

subtests for students and these subtests also differ between grade levels. The PALS for the second graders used in this research also have reading inventory and word list components to complete as part of the PALS assessment.

The PALS assessment could also be compared to other published phonics assessments. The alternate phonics assessment used in this research was developed by the researcher. Published assessments undergo a great deal of analysis by developers before they are published. Participants are used to determine the reliability and validity.

This study could be replicated with more expansive populations. The sample size in this study was small when compared to the number of Virginia second graders who take this assessment. A larger population from multiple schools in a variety of locations throughout Virginia is recommended. As the PALS test is adopted by other states research could spread to these locations.

REFERENCES

- Arnold, P.L. (1996). Is global similarity a confounding variable in phonemic awareness? (Doctoral dissertation, University of Colorado at Boulder, 1996).
- Bruck, M., Teiman, R., Caravolas, M., Genesee, F., & Cassar, M., (1998). Spelling skills of children in whole language and phonics classrooms. Applied Psycholinguistics, 19, 4. p. 669-684.
- Education Commission of the States (2003). Retrieved September 25, 2003, from [http://www.ecs.org/dbsearches/Search\\_Info/Literacy\\_ProgramProfile.asp?ProgID=109](http://www.ecs.org/dbsearches/Search_Info/Literacy_ProgramProfile.asp?ProgID=109) .
- Fischer, P. E. (1993). The sounds and spelling patterns of English: phonics for teachers and parents. (Eric\_No. ED423513).
- Fowes, K., & Sloan, M., (1999). Improving student independent reading skills through direct phonics instruction. (Eric\_No. ED437620).
- Invernizzi, M., Meier, J., & Juel, C. (2003). 1-3 Technical Reference, Charlottesville: University of Virginia.
- Invernizzi, M., Meier, M., Swank, L., & Juel, C., (1998). Phonological Awareness Literacy Screening. Charlottesville: University of Virginia.
- Kaminski, R.A. & Good, R.H. (1996). Towards a technology for assessing basic early literacy skills. School Psychology Review, 25. 215-227.
- Matthews, S. J. (2000). Convergent validity of the phonological awareness literacy screening tool (PALS). Harrisonburg: James Madison University.
- Nelson, Laurie (1998). The influence of phonics instruction on spelling progress. (Eric\_No. ED317953).

PALS Background (2003). Retrieved September 14, 2003, from <http://pals.virginia.edu/Technical-Information/Background.asp> .

PALS Research (2003). Retrieved September 14, 2003, from <http://pals.virginia.edu/Technical-Information/PALS-Research.asp> .

Paulu, N. (1998). What we know about phonics: research in brief (Eric\_No. ED297298).

Swank, L. K. & Catts, H. W. (1994). Phonological awareness and written word decoding. Language, Speech, and Hearing Services in Schools, 25. 9-14.

APPENDIX

## APPENDIX A

Name \_\_\_\_\_

Directions: Read each sentence and fill in letters missing from the word.

1. My family went to chur\_\_\_\_\_ on Sunday.
2. I sat on the bench to tie my \_\_\_\_\_oe.
3. We had to \_\_\_\_\_ive a long way on the trip.
4. The woman was \_\_\_\_\_irty years old.
5. The \_\_\_op was used to clean the floo\_\_\_\_\_.
6. The clown wears a \_\_\_\_\_ig.
7. A baby co\_\_\_\_\_ is called a calf.
8. Wash your hands in the sin\_\_\_\_\_.
9. The ball went in the \_\_\_\_\_et.
10. The bear cu\_\_\_\_\_ follows his mother.
11. There is a \_\_\_\_\_ide at the park.
12. A lion must hu\_\_\_\_\_ for food.
13. There is a bu\_\_\_\_\_ in the road.
14. The hunter set a \_\_\_\_\_ap in the woods to catch food.

Directions:

Read the word and find the word that has the same sound as the underline letters.

15. brave

day

bring

brad

boy

16. drop

drink

hot

drip

pep

17. boat

bat

cot

go

book

18. apple

hat

apron

talk

pale

19. hide

hippo

chief

bright

hid

20. sheep

better

bear

bean

ship

21. light

sick

loot

lick

while

22. bed

tea

eagle

seen

letter

23. hope

stood

score

open

school



APPENDIX B

May 17, 2004

Dear Parents,

We are conducting a study involving the PALS test results and classroom assessments. To conduct this study we need the participation of Tabb Elementary second graders. The attached "Permissions for Child's Participation" form describes the study and asks your permission for your child to participate.

Please carefully read the attached "Permission for Child's Participation" form. It provides important information for you and your child. If you have any questions pertaining to the attached form or to the research study, please feel free to contact Robin Jordan at the number below.

After reviewing the attached information, please return a signed copy of the "Permission for Child's Participation" form to your child's teacher if you are willing to allow your child to participate in the study. Keep the additional copy of the form for your records.

We thank you in advance for taking the time to consider your child's participation in this study.

Sincerely,

Robin Jordan  
898-0372  
Tabb Elementary School  
Room 18

## **PERMISSION FOR CHILD'S PARTICIPATION DOCUMENT**

The purposes of this form are to provide information that may affect decisions regarding your child's participation and to record the consent of those who are willing for their child to participate in this study.

**TITLE OF RESEARCH:** The Relationship Between PALS Scores and Classroom Performance

**RESEARCHERS:** Robin Jordan, second grade-Tabb Elementary School,  
ODU graduate student

**DESCRIPTION OF RESEARCH STUDY:** During the spring of 2004 your child took the PALS (Phonological Assessment Literacy Screening) assessment with his or her classroom teacher. A portion of this assessment is spelling inventory and is scored by phonics features. Points are awarded for the presence of these specific features. A phonics assessment was also administered by your child's classroom teacher. The scores of these assessments will be compared by the researcher. If you decide to allow your child to participate in this study, your child's PALS scores will be used as will a phonics assessment designed by the researcher.

**EXCLUSIONARY CRITERIA:** In order for your child to participate in this study, your child must be a second grader at Tabb Elementary School who took the PALS assessment during the spring of 2004.

**RISKS:** none

**BENEFITS:** Participation in this study will assist the researcher in determining the relationship between the PALS test and a classroom assessment. A summary of results will be made available to both teachers and parents.

**COSTS AND PAYMENTS:** none

**NEW INFORMATION:** You will be contacted if new information is discovered that would reasonably change your decision about your child's participation in this study

**CONFIDENTIALITY:** Participants will be assigned a code number so that your child's name will not be attached to his or her responses. Only researchers involved in the study or in a professional review of the study will have access to data sheets. All data and participant information will be kept in a locked and secure location.

**WITHDRAWAL PRIVILEGE:** Your child's participation in this study is completely voluntary. It is all right to refuse your child's participation. Even if you agree now, you may withdraw your child from the study at any time. In addition, your child will be given a chance to withdraw at any time if he/she so chooses.

**COMPENSATION FOR ILLNESS AND INJURY:** Agreeing to your child's participation does not waive any of your legal rights. However, in the event of harm arising from this study, neither Old Dominion University nor the researchers are able to give you any money, insurance coverage, free medical care, or any other compensation. In the event that your child suffers harm as a result of participation in this research project, you may contact Robin Jordan at 898-0372 or Dr. David Swain, Chair of the Institutional Review Board at (757) 683-6028.

**VOLUNTARY CONSENT:** By signing this form, you are saying 1) that you have read this form or have had it read to you, and 2) that you are satisfied you understand this form, the research study, and its risks and benefits. The researchers will be happy to answer any questions you have about the research. If you have any questions, please feel free to contact Robin Jordan at 898-0372.

If at any time you feel pressured to allow your child to participate, or if you have any questions about your rights or this form, please call Dr. David Swain, Chair of the Institutional Review Board Chair (683-6028) or the Old Dominion University Office of Research (683-3460).

Note: By signing below, you are telling the researchers YES, that you will allow your child to participate in this study. Please keep one copy of this form for your records.

**Your child's name (please print):** \_\_\_\_\_

**Your child's birth date:** \_\_\_\_\_

**Your name (please print):** \_\_\_\_\_

**Relationship to child (please check one):**

**Parent:** \_\_\_\_\_

**Guardian:** \_\_\_\_\_

**Your Signature:** \_\_\_\_\_

**Date:** \_\_\_\_\_

**INVESTIGATOR'S STATEMENT:** I certify that this form includes all information concerning the study relevant to the protection of the rights of the participants, including the nature and purpose of this research, benefits, risks, costs, and any experimental procedures.

I have described the rights and protections afforded to human research participants and have done nothing to pressure, coerce, or falsely entice the parent to allowing this child to participate. I am available to answer the parent's questions and have encouraged him/her to ask additional questions at any time during the course of the study.

**Experimenter's Signature:** \_\_\_\_\_

**Date:** \_\_\_\_\_