

PHONEMIC AWARENESS AS IT RELATES TO
EARLY READING LITERACY

A Special Project

Presented to

Dr. Jack McPherson

Heritage University

In Partial Fulfillment

of the Requirements for the Degree of

Master of Education

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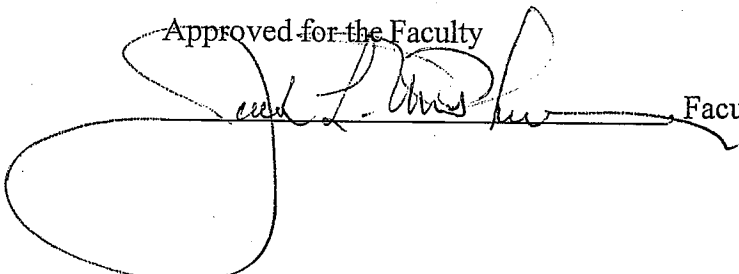
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FACULTY APPROVAL

Phonemic Awareness As It Relates to Early Reading Literacy

Approved for the Faculty

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ABSTRACT

The purpose of this quantitative experimental research project was to determine to what extent adoption of the Read Well literacy program increased reading scores of participating kindergarten students, as measured by the DIBELS reading assessment. To accomplish this purpose, a review of selected literature was conducted, essential baseline data were obtained and analyzed, and related conclusions and recommendations were formulated. As a final result, reading scores of kindergarten students who received literacy instruction utilizing the Read Well reading program increased as measured by the DIBELS reading assessment.

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CHAPTER 1

Introduction

Background for the Project

In our society, education, in particular the literacy issue, has become essential to future employment, increased earning power, and even social status. Simply put society rewarded those who can read, write and do math computations and penalized those who cannot. Literacy even affected social, cultural and citizenship participation in society. Literacy was important to nations competing in a changing global market and in improving the human condition (Government of Canada, from a report on Adult Literacy, 2007).

President George W. Bush realized the importance of national literacy when he signed into law the bill No Child Left Behind (NCLB) on January 8, 2002. This law sought to close the achievement gap for all students regardless of race, ethnicity, socio-economic status, disability or English language proficiency. The NCLB held public education to higher standards and put the pressure on schools to meet or exceed state standards in reading, language arts and mathematics. The act caused states to insure that teachers were highly qualified and trained in culturally responsive teaching techniques, which would help close the achievement gap.

As a veteran certificated teacher, the researcher (Maureen Scott) had witnessed the effect of illiteracy first hand, when observing primary-level students

entering school each year. For example, the majority of kindergarteners entering school had never been to pre-school nor did they have books to read at home. Often their parents were unable to help their children with homework or even read teacher's notes that were sent home. Kay (2007) alluded to the importance of mastering phonemic awareness (PA) in learning to read. Said Kay:

Students who do not "learn to read" during the first three years of school experience enormous difficulty when they are subsequently asked to "read to learn"... In addition, a strong body of evidence shows that most students who fall behind in reading skills never catch up to their peers to become fluent readers. They fall farther and farther behind in school, become frustrated , and drop out at much higher rates than their classmates. They find it difficult to obtain rewarding employment and are effectively prevented from drawing on the power of education to improve and enrich their lives. Researchers speak of this syndrome as the Matthew Effect—the rich get richer and the poor get poorer (pp. 3-4).

Over the past 30-40 years there has been much research linking progress in reading literacy with PA. Children with good phonological awareness skills (individual sounds) and letter naming tend to do better in literacy skills such as reading and spelling. In addition, PA was one of the best indicators for identifying at risk readers.

The Yakima School District (YSD) was faced with a rapidly growing Hispanic student population in need of special support in mastering literacy skills. Accordingly, during 2003-2004 YSD had implemented the Houghton Mifflin (HM) Reading Program, which had corresponding Spanish and English components. This program was supplemented with the phonics-based Read Well (RW) program and the Spanish component was supplemented with Estrellitas Reading Program. The RW program incorporated song, rhyme and rhythm patterns to teach kindergarteners letter sounds and letter names. The RW program also provided students with the skills needed to become better readers in later grades.

Statement of the Problem

The YSD needed to change the kindergarten curriculum to include a phonics-based program such as RW. Students were entering kindergarten with limited phonemic awareness and were below grade level as indicated by the Dynamic Indicators of Basic Early Literacy Test (DIBELS). Students were not able to identify upper or lower case letters of the alphabet nor were they able to identify letter sounds in words. The RW program would provide a curriculum intervention strategy to address these essential student-reading skills.

Phrased as a question, the problem, which represented the focus of the present study, may be stated as follows: To what extent did the adoption of

the RW literacy program increase reading scores of participating kindergarten students, as measured by the DIBELS reading assessment?

Purpose of the Project

The purpose of this quantitative experimental research project was to determine to what extent adoption of the RW literacy program increased reading scores of participating kindergarten students, as measured by the DIBELS reading assessment. To accomplish this purpose, a review of selected literature was conducted, essential baseline data were obtained and analyzed, and related conclusions and recommendations were formulated.

Delimitations

The study was conducted during the 2006-2007 school year in the YSD at Adams Elementary School (AES). This was a high poverty area and 100% of the students qualified for the federal free and reduced lunch program. The student population included in the study was sixteen kindergarten students comprised of: seven males and nine females; twelve Hispanics; two African-Americans; one Caucasian; and one Native American.

At the beginning of the school year, students were administered the Language Acquisition Skills (LAS) test as well as an inventory test designed to place them at their appropriate level in Read Well. During the Fall, Winter, and Spring students were also administered the DIBELS reading assessment. Others

participating in the study included the classroom teacher (i.e. the researcher), the reading coach, and three classroom paraprofessionals.

Assumptions

The researcher assumed all participating kindergarteners entered school with little or no phonemic awareness. A further assumption was made that the RW program would provide daily instruction in phonemic awareness intended to develop early literacy skills in Kindergarten. Finally, the assumption was made that, having received specialized RW training, the researcher and the three classroom paraprofessionals were fully qualified to instruct participating students using this reading program.

Hypothesis

Reading scores of kindergarten students who received literacy instruction using the RW reading program would increase as measured by the DIBELS reading assessment.

Null Hypothesis

There was no significant increase in reading scores of kindergarteners who received instruction using the RW reading program as measured by the DIBELS reading assessment. Significance was determined for $p \leq$ at .05, .01, and .001 levels.

Significance of the Project

When the YSD found that many primary students entered school unable to decode with fluency, the RW reading program was implemented. The program was intended to provide phonemic awareness and previously lacking phonics instruction. The RW program was incorporated in Kindergarten and first grade with daily lessons in phonics instruction to assure students would become fluent readers. The present study could provide research data needed to justify the YSD decision to adopt the RW program.

Procedure

In the Fall of 2006, the investigator (Maureen Scott), requested and obtained permission from the AES Principal, Mr. Mike Koulentes, to undertake the present study. During this time, Kindergarten students were administered the LAS when they entered school to determine a baseline for their language skills. The RW inventory test was also administered to determine reading levels at which the Kindergarten students would be placed when they entered school. All students, who participated in the study, were placed in the prelude A section due to low letter naming and letter sound skills. Diagnostic tests were administered at the end of each RW instructional unit to determine letter naming and sound skills acquired. The DIBELS reading assessment was also administered during the Fall, Winter and Spring of the 2006-2007 school year.

Definition of Terms

Significant terms used in the context of the present study have been defined as follows:

Estrellitas reading program. A Spanish supplemental phonics reading program.

Grapheme. The smallest part of written language that represented a phoneme in the spelling of a word.

Phoneme. The smallest part of spoken language that made a difference in the meaning of the word.

Phonics. The understanding that there was a predictable relationship between phonemes (the sounds of spoken language) and graphemes (the letters and spellings that represented those sounds).

Phonemic awareness. The ability to hear, to identify, and to manipulate the individual sounds (phonemes) in the spoken language.

Quantitative research. The collection of numerical data needed to explain, predict and/or control phenomena of interest.

Research. The formal systematic application of the scientific method to the study of problems.

t test. An inferential statistics technique used to determine whether the means of two groups are significantly different at a given probability level.

t test for non-independent samples. A parametric test of significance used to determine whether, at a selected probability level, a significant difference exists between two matched, or nonindependent, samples or between the means for one sample at two different times.

Acronyms

AES. Adams Elementary School

DIBELS. Dynamic Indicators of Basic Early Literacy Skills

ESEA. Elementary and Secondary Education Act

ESL. English As A Second Language

ELL. English Language Learners

HM. Houghton Mifflin

LAS. Language Acquisition Skills

NICHHD. National Institute of Health and Human Development.

NCLB. No Child Left Behind

NRP. National Reading Panel

PA. Phonemic Awareness

RW. Read Well

YSD. Yakima School District

CHAPTER 2

Review of Selected Literature

Introduction

The review of selected literature presented in Chapter 2 has been organized to address the following research topics:

1. No Child Left Behind (NCLB).
2. The Reading First Early Literacy Program and ELL Phonics Instruction.
3. The National Reading Panel (NRP) and Phonemic Awareness.
4. The Read Well (RW) Program and ELL Instructional Strategies for Phonemic Awareness.
5. Summary.

The preponderance of research cited in Chapter 2 was current within the last five years. Key resources utilized included Education Resources Information Center (ERIC), the Internet, and Pro Quest. Information obtained from hand-search of selected materials was also incorporated.

No Child Left Behind (NCLB)

On January 8, 2002, President George W. Bush realized the importance of national literacy when he signed into law the No Child Left Behind (NCLB) Act. This federal legislation mandated an educational reform plan which contained changes to the Elementary and Secondary Education Act of 1965 (ESEA). This law contained the basic educational reforms for more accountability to higher standards in reading, language arts and mathematics, accountability to the closing of achievement gap between minority and non-minority students, and provided training in research-based teaching practices for schools in school improvement and allowed parents opportunities for choice in their children's education. Title I of the ESEA was amended to read as follows:

Title I—Improving the Academic Achievement of the Disadvantaged:

The purpose of this title was to ensure that all children have a fair, equal, and significant opportunity to obtain a high-quality education and reach, at a minimum, proficiency on challenging state academic achievement standards and state academic assessments. This purpose was to be accomplished by meeting the educational needs of low-achieving children in our Nation's highest-poverty schools, limited English proficient children, migratory children, children with disabilities, Native American children, children with disabilities, neglected or delinquent children, and young children in need of reading assistance.

This described the then existing situation at AES.

The purpose of Title I was also to be accomplished by closing the achievement gap between high- and low-performing children, especially the achievement gap between minority and non-minority students, and between disadvantaged children and their advantaged peers. This caused the AES, YSD, and the state of Washington to be held accountable for improving academic achievement of all students.

The purpose of Title I was also to be accomplished by improving and strengthening accountability, teaching, and learning by using state assessment systems as did the Washington Assessment of Student Learning (WASL).

Title I also hoped to accomplish its purpose by providing children an enriched and accelerated educational program with scientifically-based instructional strategies and challenging academic content. The purpose of Title I was also accomplished by providing instructors with any necessary professional development to elevate the quality of education for all students (NCLB, 2002, pp.1-2).

The Reading First Early Literacy Program and ELL Phonics Instruction

To ensure that every student was able to read, the Reading First Early Literacy Program was implemented to provide assistance to state and local educational agencies for students in kindergarten through third grade.

One purpose of the Reading First Early Literacy Program was to demonstrate language and literacy activities based on scientifically-based reading research that supported age appropriate development. Literacy activities included:

1. letter recognition;
2. knowledge of letter sounds, the blending of these sounds, and the use of increasingly complex vocabulary;
3. an understanding that written language was composed of phonemes and letters which represent spoken sounds in words;
4. spoken language, including vocabulary and oral comprehension, and
5. understanding concepts of printed materials. (NCLB, 2002)

According to Snow et al. (1998), a strong correlation existed between literacy in one's native language and learning English as a second language. These authorities found the degree of children's native language proficiency was a strong indicator of their English language development. Collier & Thomas (1992) explained that literacy in a child's native language established a knowledge, concept, and a skill-base that transfers from native language reading to reading in a second language.

According to Antunez (2002), as paraphrased below, the following considerations were made when instructing ELL's in Phonemic Awareness:

1. Some phonemes may not exist in the ELL's native language

and might be difficult for students to pronounce or distinguish auditorily. In order to establish meaning of vocabulary words, teachers had to teach vocabulary words, their meanings and their pronunciations to ELL's as well as teaching phonemic awareness.

2. Students had a tendency to categorize phonemes in their first language, which may conflict with English phonemes (i.e. substituting the phoneme *ch* for *sh* from Spanish to English). To establish phonemic awareness in English for ELL's, teachers had to be aware of students' linguistic characteristics that include differences of various phonemes.

3. Scientifically-based research suggested that ELL's learned sounds and letters when presented in song or poem form because of their rhythm and repetition, which were easily memorized and taught phonemic awareness.

Antunez alluded further to the following considerations when instructing ELL's in phonics:

1. Students who have not been exposed to print or who have no printed language needed to be taught about the functions of print.

2. Students may have been taught to write in a language where the characters used to represent sounds differ from those of English.

3. In Spanish the consonants b, c, d, f, l, m, n, p, q, s, and t represent similar sounds to English. However, the vowels, although written the same represent very different sounds.

The National Reading Panel (NRP) and Phonemic Awareness

In 1997, the United States Congress asked the Director of the National Institute of Child Health and Human Development (NICHD), in consultation with the Secretary of Education, to convene a national panel to assess the status of research-based knowledge, including the effectiveness of various approaches to teaching children to read. Accordingly, the National Reading Panel (NRP) was commissioned. The NRP was composed of 14 individuals, including scientists in reading research, representatives of colleges of education, reading teachers, and parents. The NRP was divided into various subgroups which debated, discussed and considered various topics for study. One of these topics was alphabets, which included phonemic awareness instruction and phonics instruction. Two questions were formulated by the panel to guide their efforts in meeting the congressional charge of identifying effective instructional reading approaches and determining their readiness for application in the classroom. These were:

1. Did instruction in phonemic awareness improve reading and if so, how was this instruction best provided?
2. Did phonics instruction improve reading achievement and if so, how was this instruction best provided?

According to the NRP, phonemic awareness referred to the ability to focus on and manipulate phonemes in spoken words. Phonemes were the smallest units of

spoken language. The following tasks were then used to assess and improve children's phonemic awareness (PA) through instruction and practice:

1. Phoneme isolation required recognizing individual sounds (e.g., "tell me the first sound in paste;" answer /p/).
2. Phoneme identification required recognizing the common sound in different words (e.g., "tell me the sound that is the same in bike, boy, and bell"; answer /b/).
3. Phoneme categorization required recognizing the word with the odd sound in a sequence of three or four words (e.g., "Which word does not belong? bus, bun, rug"; answer *rug*).
4. Phoneme blending required listening to a sequence of separate spoken sounds and combining them to form a recognizable word (e.g., "What word is /s/ /k/ /u/ /l/?" ; answer *school*).
5. Phoneme segmentation, which requires breaking a word into its sounds (e.g., "How many phonemes are there in ship?" ; answer three: /s/ /l/ /p/)
6. Phoneme deletion required recognizing what word remains when a specified phoneme is removed (e.g. "What is smile without the /s/? ; answer *mile*) (NRP, 2000, p.2-2).

Phonemic awareness was not synonymous with phonics instruction that entailed teaching students how to use grapheme-phoneme correspondence to

decode or spell words. Phonemic awareness instruction qualified as phonics instruction when it taught children to segment or blend phonemes with letters. The NRP found that phonemic awareness can be taught and that teaching children to manipulate sounds in language helped them to read (NRP, 2000).

The Read Well Program and ELL Instructional Strategies for Phonemic Awareness

According to Diamond et al.(2002), reading had not evolved naturally and decoding skills must be taught directly and systematically. The Read Well program had been designed to provide teachers with the necessary training to teach phonemic awareness and phonics instruction.

By the end of kindergarten, it was necessary for students to be able to name all the upper and lower case letters, and to match all the letters with their single consonants and short vowel sounds. In general, because the names of most letters were closely associated with their sounds, children who learned to name letters also began to learn their sounds. (Adams, 1990) Familiarity with the letters of the alphabet was a powerful predictor of early reading skills (Ehri & McCormick, 1992).

According to the CORE teaching reading sourcebook, phonemic awareness was also a precursor to and a predictor of early reading skills. Phonemic awareness was important to phonics instruction and learning to read because it helped students to understand the alphabetic principle, to notice the

connection between sound and the letters, to blend sounds to make words, and to segment words to help them spell them (Diamond, Gutlohn, & Honig, 2000).

Read Well provided scientifically researched-based instruction. Letter naming and phonemic awareness were taught through age and developmentally appropriate activities. Phonemic awareness skills were taught in games, songs, art activities, bookmaking, white boards, and smooth and bumpy blending activities. There were also activities that taught rhyming, sound substitution, segmenting, and blending. The ELL's were spending much of their time attuning their ears to the sounds of their new language. Read Well proved to be invaluable among learning strategies used to teach ELL's phonemic awareness and letter naming. Through the use of various games, ELLs were allowed to hear the English sounds and respond to them. Read Well also involved the children in poems, rhymes, and songs with daily repetition until the sounds became firmly grasped. Letter names and sounds were taught through alphabet cheers. Reading materials were scaffold so prior sounds taught were incorporated into the next books. Realia in the form of pictures were used to give meaning to new vocabulary. Phoneme segmentation was used to isolate separate sounds in words and to help with spelling and sounding out the word for reading (Dunn et al., 2004)

Summary

The review of selected literature presented in Chapter 2 supported the following research themes;

1. The No Child Left Behind Act signed into law in 2002 mandated higher standards in nationwide.
2. To ensure that every student was able to read, the Reading First Early Literacy Program was implemented to provide assistance to state and local agencies for students in kindergarten through third grade.
3. The National Reading Panel found that phonemic awareness can be taught and that teaching children to manipulate sounds in language helped them to read (NRP, 2000).
4. The Read Well program proved to be invaluable among learning strategies used to teach phonemic awareness and letter naming.

CHAPTER 3

The Methodology and Treatment of the Data

Introduction

The purpose of this quantitative experimental research project was to determine what extent adoption of the Read Well literacy program increased the reading scores of participating kindergarten students, as measured by the DIBELS reading assessment. To accomplish this purpose, a review of selected literature was conducted, essential baseline data were obtained and analyzed, and related conclusions and recommendations were formulated.

Chapter 3 contains a description of the methodology used in the study. Additionally, the writer (Maureen Scott) included details concerning participants, instruments, design, procedure, treatment of the data, and a summary.

Methodology

The researcher utilized a *t*-test for nonindependent samples to determine whether providing specific phonics instruction for ELL kindergarteners would increase their reading scores from September, 2006 to May, 2007. This parametric test allowed the researcher to determine whether, at a selected probability level, a significant difference in reading scores existed after participating students received instruction using the Read Well program.

Participants

Participants included in the experiment were sixteen kindergarten students enrolled in the 2006-2007 Read Well program instructed by the researcher. All students were also enrolled in the dual-language program at Adams Elementary School (AES) and at least twelve of them were bilingual as indicated on the registration papers completed by parents at the beginning of the school year. The experimental group included: Sixteen students; seven males and nine females; twelve Hispanics; two African-Americans; one Caucasian; and one Native American. Others participating in the study included the classroom teacher (i.e. the researcher), the reading coach, and three classroom paraprofessionals.

Instruments

The Language Acquisition Skills (LAS) test was administered to incoming kindergarteners to determine the students' dominant language. A Read Well Inventory test was then administered to determine placement in the appropriate Read Well level. Phonemic awareness and letter naming growth was measured by the DIBELS assessment during the 2006-2007 school year in the Fall, Winter and Spring. Points for the DIBELS reading assessment are divided into three groups: Intensive (i.e. at risk readers needing substantial interventions); Strategic (i.e. some risk to readers and needing additional interventions); Benchmark (i.e. Low-risk readers performing at grade level).

Design

A *t*-test for nonindependent samples was utilized to determine whether daily instruction in phonics using the Read Well program made a significant difference in the reading scores of kindergarteners from Fall, 2006 to Spring, 2007. The DIBELS assessment provided reading scores used for the *t*-test analysis. The test utilized one group of kindergarten students who were tested during Fall, 2006, with no former instruction in phonics or letter naming. The same group was then tested again during Spring, 2007, after receiving Read Well instruction.

Procedure

Procedures employed in the present study evolved in several stages as follows:

1. During September, 2006, the researcher sought and obtained permission for the experiment from the building principal at AES (Mr. Mike Koulentes).
2. The researcher was then directed to the building's reading coach (Mrs. Linda Fjeld), to obtain data from the DIBELS reading assessments.
3. Throughout 2006-2007, the researcher conducted a review of selected literature focused on educational reform concerned with the acquisition of reading skills, (e.g. phonemic awareness, phonics instruction, and teaching techniques for use with ELL's). The literature research was acquired

through Education Resources Information Center (ERIC), the Internet, and Pro Quest. Information obtained from a hand-search of selected materials was also incorporated.

4. During Summer, 2007, the researcher analyzed the DIBELS assessment scores, while completing studies for the Master of Education Degree at Heritage University.

Treatment of the Data

A *t*-test for nonindependent samples was used in conjunction with STATPAK statistical software that accompanied the text book Educational Research: Competencies for Analysis and Applications by (Gay, Mills, & Airasian, 2003), which allowed the researcher to compare the DIBELS Fall and Spring reading scores needed to determine any significant difference in growth in phonemic awareness. Significance was determined for $p \leq$ at .05, .01, .and 001 levels. The following formula was used to calculate the *t*-test for nonindependent samples:

$$t = \frac{\bar{D}}{\sqrt{\frac{\sum D^2 - \frac{(\sum D)^2}{N}}{N(N - 1)}}$$

Summary

Chapter 3 provided a description of research methodology employed in the study, participants, instruments used, research design, and procedure utilized. Details concerning treatment of data obtained and analyzed were also presented.

CHAPTER 4

Analysis of the Data

Introduction

The present study sought to determine to what extent, if any, the adoption of the Read Well reading program increased reading scores of participating kindergarten students, as measured by the DIBELS reading assessment. Chapter 4 was organized to include the following: a description of the environment; hypothesis; results of the study; findings; and a summary.

Description of the Environment

The study was conducted during the 2006-2007 school year in Yakima School District (YSD) at Adams Elementary School (AES). The AES was a high poverty area as 100 percent of the students qualified for the federally funded lunch program. The researcher assumed the participants in the study had never received any previous phonics instruction as evidenced by the lack of literature in the home. The RW inventory test was administered and students were placed in the prelude A unit of RW, indicating that all participants needed the intensive phonics instruction. During the Fall, Winter, and Spring, the students were also administered the DIBELS reading assessment.

The demographics of the sample population were similar to the YSD population which included 74% Hispanic students. Student participants included sixteen kindergarteners comprised of: Seven males and nine females; twelve Hispanics; two African-Americans; one Caucasian; and one Native American. Other participants included the classroom teacher (i.e. the researcher), the reading coach, and three classroom paraprofessionals.

Hypothesis/Research Question

Accordingly, the following research question was examined: Would reading scores of kindergarten students, who received literacy instruction using the RW reading program, increase as measured by the DIBELS assessment?

Null Hypothesis

The null hypothesis, (i.e., There was no significant increase in reading scores of kindergarteners who received instruction using the RW reading program as measured by the DIBELS), was rejected at all levels of probability (i.e., 0.05, 0.01, and 0.001).

Results of the Study

Students participating in this study were administered the DIBELS reading assessment during Fall, 2006, and Spring, 2007. Table 1 showed the participating kindergarteners' DIBELS scores:

Table 1
Kindergarten 2006-2007 DIBELS Reading Scores

Student	ISF=8 Initial Sound Fluency	LNF=8 Letter Naming Fluency	FALL		PSF=35 Phoneme Segmentation Fluency	NWF=25 Nonsense Word Fluency	SPR.
			ISR	LNF=40 Letter Naming Fluency			ISR Reading Level
A	12	0	S	20	56	29	S
B	0	0	I	12	51	6	I
C	0	0	I	28	55	27	S
D	33	5	S	50	54	52	B
E	6	0	S	27	59	31	S
F	10	22	B	52	56	52	B
G	8	0	S	40	59	64	B
H	0	7	I	35	65	36	B
I	7	11	S	48	68	37	B
J	0	0	I	61	70	53	B
K	0	9	S	64	51	62	B
L	11	4	S	31	48	52	B
M	0	0	I	12	16	32	S
N	0	2	I	26	25	34	S
O	13	4	S	18	12	30	S
P	11	0	S	29	53	31	B

symbol key: I=Intensive; S=Strategic; B=Benchmark

In Table 2, the numeric levels of 1, 2, and 3 were substituted for symbols I, S, and B, for the analysis of *t* test data for non-independent samples (refer to Tables 2 & 3).

Table 2 also showed a positive difference of 12 points from Fall, 2006 to Spring, 2007. Table 3 (STATPAK interactive software) showed the t value of 5.20 used to determine acceptance of the hypothesis.

Table 2

DIBELS levels for Read Well Students for Fall and Spring

<u>Fall</u> <u>Level</u>		<u>Spring</u> <u>Level</u>	
Student	Level	Student	Level
A1	2	A2	2
B1	1	B2	1
C1	1	C2	2
D1	2	D2	3
E1	2	E2	2
F1	3	F2	3
G1	2	G2	3
H1	1	H2	3
I1	2	I2	3
J1	1	J2	3
K1	2	K2	3
L1	2	L2	3
M1	1	M2	2
N1	1	N2	2
O1	2	O2	2
P1	2	P2	3

Table 3

t -Test for Non-independent Samples

<u>Statistic</u>	<u>Value</u>
Number of Pairs	16
Sum of D's	12.00
Mean of D's	0.75
Sum of D's Squared	14.00
t -value	5.20
Degrees of Freedom	15.00

Table 4

Distribution of t (Gay et al., p.571)

Df	p		
	0.05	0.01	0.001
16	2.120	2.921	4.015

Findings

One group of sixteen kindergarten students' test scores were compared at two different dates using a t test for non-independent samples. Table 1 clearly showed an increase in the number of students reaching the benchmark after RW instruction. Table 2 and 3 displayed the statistical data. Table 4 showed the distribution of t . When compared with the threshold values of the distribution of the t -value with 16 degrees of freedom, the t -score of 5.20, thereby supported the hypothesis and rejected the null hypothesis at all levels of probability (i.e., 0.05, 0.01, and 0.001).

Discussion

As indicated by the analysis detailed above, the hypothesis was supported (i.e. reading scores of kindergarten students who received literacy instruction using the RW reading program increased as measured by the DIBELS reading assessment). Accordingly, the basic research question, which represented the focus of this present study, was answered in the affirmative (i.e., the adoption of

the Read Well reading program increased reading scores of participating kindergarten students, as measured by the DIBELS reading assessment).

Summary

Chapter 4 was organized to include the following: A description of the environment; hypothesis and research question; the results of the study; findings; *discussion*, and a summary. Significant evidence supported the acceptance of the hypothesis (i.e., adoption of the RW reading program increased reading scores of participating kindergarten students as measured by the DIBELS reading assessment).

CHAPTER 5

Summary, Conclusions, and Recommendations

Summary

The purpose of this quantitative experimental research project was to determine to what extent adoption of the RW reading program increased reading scores of participating kindergarten students, as measured by the DIBELS reading assessment. To accomplish this purpose, a review of selected literature was conducted, essential baseline data was obtained and analyzed, and related conclusions and recommendations were formulated.

Conclusions

Based on the review of selected research in Chapter 2 and the analysis of the data in Chapter 4, the following conclusions were reached:

1. The No Child Left Behind Act, signed into law in 2002, mandated higher standards in reading nationwide.
2. To ensure that every student was able to read, the Reading First Early Literacy Program was implemented to provide assistance to state and local agencies for students in kindergarten to third grade.
3. The National Reading Panel found that phonemic awareness can be taught to primary age children and that teaching children to manipulate sounds helped them to read.

4. The Read Well Program proved to be invaluable among learning strategies used to teach ELL's phonemic awareness and letter naming.
5. The hypothesis was supported (i.e. reading scores of kindergarten students who received literacy instruction using the RW reading program increased as measured by the DIBELS reading assessment).
6. The answer to the fundamental research question on which this study focused indicated that those kindergarteners instructed in RW literacy program increased their reading scores as measured by the DIBELS.

Recommendations

Based on the conclusions cited above, the following recommendations have been suggested:

1. To ensure that all students receive quality reading instruction, school districts should comply with the mandates of the NLCB Act.
2. To provide ongoing assistance to state and local agencies for kindergarten through third grade, the YSD should continue to implement the Reading First Early Literacy Program.
3. To teach children to manipulate sounds essential for learning to read, the YSD should continue the Read Well Program as part of daily instruction.
4. To provide for special language needs of ELL's , the implementation of the RW early reading literacy program should be ongoing.

5. Educators seeking information related to the improvement of early reading literacy of ELL's may wish to utilize information in this study or, they may wish to conduct further research better suited to their unique needs.

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