

Read Well Intervention
Will It Actually Improve DIBELS Results?

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FACULTY APPROVAL

Read Well Intervention

Will It Actually Improve DIBELS Results?

Approved for the Faculty

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ABSTRACT

This experimental study looked at the effects of how a reading intervention impacted the reading performance of first graders at McDermoth Elementary in Aberdeen, Washington. The researcher used DIBELS results from 2005/2006 and compared them with those from 2006/2007. The students in the treatment group, which was the first graders from 2006/2007, received 45 minutes of extra reading instruction four to five times a week if they tested below grade level on the DIBELS test.

The researcher used the STATPAK program to run a t-test to determine if the Read Well intervention positively impacted student achievement on the DIBELS test. The t-test gave a t-value of 1.32, which was below the threshold of 2.000 for probability at .05. These results allowed the author to determine that the intervention did not significantly improve student performance. However, there were signs that the intervention might have helped students maintain their performance, rather than drop to the intensive level.

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CHAPTER 1

Introduction

Background for the Project

Upon entering office in January 2001, President George W. Bush declared that No Child Left Behind (NCLB) was the cornerstone of his Administration. At that time, President Bush's great concern was that "too many of our neediest children are being left behind (U.S. Department of Education, 2004)". The NCLB Act forced public schools to restructure and improve their operations since the level of accountability increased. Schools were obligated to take actions that improved the reading scores of the student population.

In 2005/2006, 81.2% of Washington's fourth graders passed the state's test known as the Washington Assessment of Student Learning (WASL), which is up from 79.5% the previous year (Office of Superintendent of Public Instruction, 2007a). More directly, Aberdeen didn't fare so well, with only 74.6% of the 2005/2006 fourth graders passing the WASL, which declined slightly from the 2004/2005 year

in which 78% of fourth graders passed (Office of Superintendent of Public Instruction, 2007a).

As research has indicated, students who read below grade level at the end of third grade continue to struggle with reading all the way through graduation (Education Commission of the States, 2007). With that being announced, as of June 2006, Aberdeen had 42.3% of that year's third graders who theoretically continued to struggle academically because they weren't reading at grade level (Office of Superintendent of Public Instruction, 2007a). After taking into account the WASL scores, DIBELS scores, and teacher input, Aberdeen School District decided that a reading intervention program needed to be adopted and implemented in order to improve reading scores and help students become successful learners. As a district, the adoption committee decided on the Read Well program for use in kindergarten through second grade, and Read Naturally in third through sixth grade.

Statement of the Problem

Aberdeen School District needed to provide supplemental reading instruction because there were a large number of students throughout the district who tested below grade level on reading performance assessments. Consequently, a reading intervention program needed to be implemented so students could improve their reading abilities and tests scores and wouldn't continue to struggle throughout school. The intervention also needed to happen so parents wouldn't lose faith in the district's instructional practice, which could cause tension and harsh relationships.

Purpose of the Project

The author's objective was to find out if the Read Well intervention had a significant impact on reading skills of students who had tested below grade level at the beginning of first grade. The results were to then be shared with the staff at McDermoth so they could determine if their efforts were worthwhile or unnecessary.

Delimitations

This study examining the effects of a Read Well intervention program unfolded during the 2006/2007 school year. The participants used in this study were first grade students from general education classrooms at McDermoth Elementary in Aberdeen, Washington.

First graders from the 2005/2006 school year represented the control group since they received only typical reading instruction using Open Court curriculum. The treatment group was composed of the first grade students from the 2006/2007 school year because those students who were considered to be below grade level, based on the DIBELS results and/or teacher recommendation, received extra reading instruction using the Read Well program. The treatment group received 40-45 minutes of Read Well instruction four to five times a week in a location outside of the general classroom between 1:00 and 1:45 p.m. Read Well instruction was provided by McDermoth's Para educators that had been given limited informal training with the Read Well curriculum during the first week of school.

Assumptions

Setting up this study, the researcher assumed that all the participants were similar in that they all attended first grade at McDermoth. The students all came to school ready to learn based upon the fact that students were provided the opportunity to eat breakfast each day prior to the school day beginning.

In addition, all the teachers and Para educators were capable of teaching the subject matter successfully and the classrooms were such that they could contribute to students learning the required material. Instructional materials being used were appropriate for the students and the grade level. Also, the DIBELS results were valid and reliable.

Hypothesis

The performance growth changed on the 2006/2007 DIBELS test for first graders who received 40 minutes of daily Read Well intervention compared to those who did not receive reading intervention the previous year. Reading intervention had the power to help students make great strides in their abilities.

Null Hypothesis

There was not a significant difference in performance growth on the 2006/2007 DIBELS between first graders who received Read Well intervention and those who did not in 2005/2006. Significance was determined at the probability thresholds of .05, .01, and .001 as provided in Gay's book, Educational Research (2006).

Significance of the Project

Aberdeen School District was not pleased with the number of students reading below grade level. In attempt to reach those students and improve overall reading scores, the district reviewed different research-based programs and decided to implement Read Well as the reading intervention program for kindergarten through second grade. Aberdeen's goal was for all students up through second grade to be reading at grade level by the end of the 2007 school year. With the current students reading at grade level, that allowed Aberdeen to focus their attention on students who entered the district below grade level standards.

Procedure

To begin, the author decided to use the first graders at McDermoth Elementary because it was convenient. All these students were given the DIBELS test three times a year. The author easily obtained these assessment results online at the DIBELS website and used the raw scores for each child in September to determine that the two groups of first graders were similar based on the t-value given after performing a t-test for independent samples. Then in May of 2007, the researcher used the raw DIBELS scores and another t-test for comparison between the two groups of students to determine the effectiveness of the Read Well intervention program.

Acronyms

CISL. Center for the Improvement of Student Learning

DIBELS. Dynamic Indicators of Basic Early Literacy Skills

EALRs. Essential Academic Learning Requirements

ELL. English Language Learner

GLEs. Grade Level Expectations

NAEYC. National Association for the Education of
Young Children

NCLB. No Child Left Behind

NICHHD. National Institute of Child Health and
Human Development

NRP. National Reading Panel

OSPI. Office of Superintendent of Public
Instruction

PA. Phonemic Awareness

WASL. Washington Assessment of Student Learning

CHAPTER 2

Review of Selected Literature

Introduction

One of life's most important and powerful achievements has always been learning to read. In the past, our society benefited from literate citizens, however as years elapsed that became even truer. Society began to expect virtually all its citizens to function beyond the minimum literary standards. Years ago, the majority of work place communications were done verbally, however, as time went on, people were forced to communicate in other ways, including printed documents, electronic mail, and over the Internet. Because life relied so heavily on being a competent, fluent, and successful reader, it was very important that the issue of our reading deficit be addressed.

The author reviewed many pieces of literature for background knowledge during this project. Literature topics included the components of an effective reading program, developmentally appropriate instruction, interventions, and motivating struggling readers.

Components of an Effective Reading Program

Much research has been done concerning the components of effective reading programs. Authors of numerous studies, including that done by the National Reading Panel (NRP), narrowed these components down to five essentials, which included instruction in the areas of phonemic awareness, phonics, vocabulary, fluency, and comprehension (NICHD, 2000).

Children haven't typically acquired phonemic awareness spontaneously; rather, acquiring phonemic awareness has been difficult for most children. Correlation studies have indicated that phonemic awareness (PA) has been one of two best early-school predictors for how well children will learn to read during their first two years of instruction (NICHD, 2000). Experts have defined PA as one's "ability to hear, identify, and manipulate the individual sounds, or phonemes, in spoken words (Houser, 2007)." The term PA "refers to a child's understanding and conscious awareness that speech is composed of identifiable

units, such as spoken words, syllables, and sounds (NAEYC, 1998)."

Based on the key findings of the NRP and reported in the publication by Access Center, it was noted that PA instruction could be taught and learned and produced better results when taught to small groups of children (Houser, 2007). Based on conclusions drawn from the 2000 report of the NRP, the authors of *Put Reading First: The Research Building Blocks for Teaching Children to Read*, the panel claimed that PA instruction was most effective when it focused on only one or two types of phoneme manipulation at a time (Armbruster, Lehr, & Osborne, 2001). The NRP also found that PA instruction was highly effective with a wide variety of learners, it significantly improved reading scores compared to instruction that omitted PA, and it also helped children improve their spelling scores (NICHD, 2000).

Phonics was the second key component to a highly effective reading program. Phonics instruction aimed at helping beginning readers understand that letters

(graphemes) were linked to sounds (phonemes) to form words, ideas, and sentences (NICHD, 2000).

When the NRP performed the analysis on all the collected data, the Panel concluded that early systematic phonics instruction produced significant and substantial effects in Kindergarten and first grade (NICHD, 2000). Researchers suggested that phonics instruction be taught systematically and explicitly, each skill should be taught to mastery before moving on, blending and segmentation of sounds should be directly modeled, and ample opportunities for practice should be provided (Houser, 2007).

The next essential component was vocabulary. A child's vocabulary was typically learned indirectly, probably through normal conversation, listening to other people speak, and possibly when one was read to. Vocabulary was defined as one's ability to understand and use words to acquire and convey meaning (Houser, 2007). The significance of a sufficient, working vocabulary not only played an important role in reading, but also one's verbal skills. If a child

cannot understand spoken language they would most likely have difficulty reading written language. Thus, the data allowed authors to suggest that vocabulary was an important prerequisite for effectively using oral and written expression and also for developing reading comprehension (NICHD, 2000).

The authors of the publication Components of an Effective Reading Program (2007) noted some consistent trends in vocabulary research. These trends, based upon the 2000 report from the NRP, included the ideas that vocabulary should be part of reading instruction, items for a particular text should be directly taught, and strategies should be taught for when students encounter unfamiliar words (Houser, 2007). It was also found that repetition and multiple exposures to vocabulary items enhanced the acquisition of the terms (NICHD, 2000).

Fluency was the fourth element of an effective reading program. A fluent reader could read orally with speed, accuracy, and proper expression (NICHD, 2000). Fluency was only one of several factors that

were necessary for reading comprehension. Obviously, as struggling readers tried to blend each word sound by sound, reading became laborious and inefficient, which in turn negatively affected the reader's comprehension and retention of information.

Fluency instruction has often been overlooked and omitted from reading programs, consequently reducing the overall value and impact of reading instruction (NICHD, 2000). Thus, teachers needed to implement strategies and approaches daily that fostered fluency in young readers, such as independent silent reading, listening to books on tape, and guided repeated oral reading. Based upon the correlation data collected, the NRP suggested that the more children read, the stronger their word recognition, fluency, vocabulary, and comprehension became (NICHD, 2000).

The fifth and final component of an effective reading program was comprehension, which was simply one's ability to understand. Comprehension was the overall goal for every child as they progressed through the school system and through life. Without

comprehension, one probably struggled daily in school and most likely continued to struggle out of school.

Comprehension was described as an active, complex cognitive process that required thoughtful and intentional interaction between the reader and the text (NICHD, 2000). The NRP claimed that student achievement was intimately linked with teachers who assisted students with developing and applying reading comprehension strategies (NICHD, 2000). Some of these essential metacognitive strategies that had been easily implemented included comprehension monitoring, the use of graphic and semantic organizers, question answering, question generation, story structure, and summarization. Evidence from the collected data, indicated that comprehension instruction was most effective when a combination of metacognitive strategies were taught together (NICHD, 2000).

From much of the data collected from years of research, reading was described as a complex, multi-faceted process that needed to be taught explicitly and systematically using a variety of instructional

strategies (NAEYC, 1998). By incorporating a wide assortment of instruction in the areas of phonemic awareness, phonics, vocabulary, fluency, and comprehension, children were provided with the majority of tools they needed to become proficient readers that enjoyed reading and learning.

Developmentally Appropriate Instruction

Children have entered the formal school system with such open, moldable minds ready to soak up buckets of knowledge. School districts have adopted different curricula that were suppose to teach all students how to read, write, perform mathematical operations, and be knowledgeable in the areas of science, history, physical education, music, and art. What has happened? Well, over the years, researchers have found that students learn at different rates, in different methods, and that they learn more according to their interests, background knowledge, and/or past personal experiences. The growing process for children has been somewhat orderly, however, as children have gained a vague understanding of the world, their brain

development during the first years of life has varied due to differences in both biological and experiential influences (Snow, Burns, & Griffin, 2007). Given this information, school districts' curriculum that they adopted doesn't seem to fit and fulfill the needs of every student within the given year. That was where schools and teachers needed to get creative. They needed to find a way to make learning fun, interesting, relevant, and related to the students' experiences, yet still find time to teach all the necessary components that were required for each student at the particular grade level.

Learning starts at a very young age as children have so much to take in. During the first couple years of life, children learn loads of information both formally and informally. Learning that the alphabet was a symbol system for sounds fits into this stream of development. The ability to use symbols was gradually acquired during the first years of life as children interpreted and created first iconic and then graphic representations (Snow et al., 2007). Many

children exhibited a sharp increase in the size of their working vocabularies during the second year of life (Snow et al., 2007). Between the ages of 3 and 4, children have shown rapid growth in literacy skills as they experimented and attempted to write using scribbles, random markings, and invented spelling with odd combinations of letters and letter-like forms (Snow et al., 2007). During this time, young children also began to learn how symbols work. Children began noting differences between numerals and letters, comparing the way letters work in written names, and understanding that letters symbolize sound segments within words (Snow et al., 2007). Throughout the preschool and school years, vocabulary growth was rapid and was highly variable among individual children (Snow et al., 2007).

As children began to enter preschool and the early grades, researchers were trying to find out what lead to later academic challenges for students. Six academic issues that researchers came up with that could lead to future academic problems included letter

names and shapes, phonological awareness, interest in literacy, number concepts, counting, and cooperation with peers (Snow et al., 2007). Knowing some of the early downfalls, schools needed to take this research and other data that was available and make sure that their instruction was appropriately teaching the necessary elements for students to succeed. If teachers were not able to eliminate these struggling areas, the gap between the children who comprehended and successfully learned the curriculum and those who struggled would continue to grow larger, which would be detrimental to our system. Research repeatedly demonstrated that, when steps were taken to ensure an adequate awareness of phonemes, the reading and spelling growth of the group as a whole was accelerated and the incidence of reading failure was diminished (Snow et al., 2007).

Knowing the different types of learning styles and teaching strategies has been significant for successful teachers. Teachers knew what material and information they had to teach because the state set

those requirements. However, the state hasn't set specific strategies that teachers must use or certain styles they must include in the instruction process within the classrooms. Because there has been so many students falling behind their peers academically, teachers could take into account the different learning styles that have been acknowledged and researched and put them into action within their classrooms.

Some of the learning style methods that need to be considered and referred to when planning instructional activities include the work by Dr. Anthony F. Gregorc, Rita and Kenneth Dunn, Walter Barbe and Raymond Swassing, Herman Witkin, and Howard Gardner. Gregorc's work focused on recognizing how the mind works and included four learning styles based on humans' perceptual and ordering abilities (Tobias, 2000). Rita and Kenneth Dunn studied environmental preferences in regards to individual's study habits (Tobias, 2000). Together, Barbe and Swassing have worked with modalities that focused on different

learning strategies for remembering information (Tobias, 2000). Witkin has researched learning styles in regards to how individuals take in and communicate information, either analytically or globally (Tobias, 2000). Gardner created the Multiple Intelligence Theory, which was originally developed as an explanation for how the mind works and to describe cognitive ability in terms of "several relatively independent but interacting cognitive capacities" (Moran, Kornhaber, & Gardner, 2006). Taking these different models into account could help teachers understand that each person had a complex and unique combination of natural strengths and learning preferences. Implementing different views from this wide variety of learning models when dealing with student instruction has positively impacted students' knowledge and skills (Tobias, 2000).

Many publishers have created developmentally appropriate curriculum across the United States. In Washington, the OSPI has compiled a large list of learning standards, known as the Essential Academic

Learning Requirements (EALRs) and Grade Level Expectations (GLEs), for kindergarten through 10th grade. With these GLEs in place, schools have had to adopt new curriculum with tremendous caution, consideration, and deliberation to make sure that the curriculum was appropriate for the student age level but also that the GLEs were being taught in the correct grade. The OSPI stated, "students learn best when the instruction they receive and the assessments used align with state standards" (OSPI, 2007b). Curriculum alignment, both horizontal and vertical, along with the EALRs could provide more appropriate instruction for students than when teachers teach what they want, whenever they want. Even though some teachers may not have liked this idea or method, they needed to remember what was best for the students.

Intervention for Struggling Readers

According to the website of the Office of Superintendent of Public Instruction (OSPI), 20.5% of fourth graders and 27.1% of high school sophomores tested below grade level in reading on the Washington

Assessment of Student Learning (WASL) exam in 2005. The following year, in 2006, the number of students who tested below benchmark declined slightly to 18.8% and 18% respectively (OSPI, 2007a). Also in 2006, 31.7% of the third graders did not pass the reading portion of the WASL for their grade level (OSPI, 2007a). These numbers were alarming if one thought about the number of students who would enter the working society not being able to read at a tenth grade level. These WASL scores have only shown one type of low performance by students but there have been other assessments and many classroom experiences that have identified numerous students below benchmark for the respective grade levels.

Several problems have been listed as reasons for the large number of students performing below grade level. Some of these have included the lack of student motivation, instruction and/or assessment material that was too easy or too difficult, student test anxiety, lack of student ownership in the WASL therefore students haven't tried their hardest, and

that teachers haven't taught students the right material. This list could have gone on and on, but the real issue has been that school personnel had to find some way to improve the test scores and increase the number of students performing at grade level.

Implementing curriculum intervention programs was one attempt by school districts to reduce the gap between low student performance and that of their typically achieving peers in reading. There has been numerous intervention programs introduced to schools in attempt to assist schools at decreasing the number of at-risk students. Some intervention programs have proven more beneficial than others based on the components of instruction that were implemented with the program.

The state of Washington has required that learning to read take place within the first couple years of formal schooling. The state also claimed that students needed to be reading at grade level by the end of third grade so they could transition from learning to read to reading to learn. These goals

sounded attainable and realistic, however there have been an alarming number of students that haven't learned to read and weren't reading at grade level by the end of third grade.

Several reasons have been listed as to why so many students weren't getting off to a great start in reading and weren't reading at grade level. Some of these probable causes included lack of appropriate instruction, students read text at the frustration level, students had difficulty with phonological awareness, including the inability to segment phonemes, and ineffective phonemic synthesis (Smith, Walker, & Yellin, 2004).

It was important for schools to implement intervention programs that were research-based and proven effective at improving student performance. Much research has been completed regarding the effectiveness of different interventions that has allowed researchers to identify certain instructional components that need to be included in an effective intervention program. Researchers identified these

necessary components to include instruction in phonemic awareness, phonics, vocabulary, fluency, and comprehension.

Dozens of subsequent studies have confirmed that there was a close relationship between phonemic awareness and reading ability, not just in the early grades (Snow et al., 2007). Therefore, intervention programs should contain instructional materials and methods aimed at improving phonemic awareness for struggling readers.

Kai Yung Tam, William L. Heward, and Mary Anne Heng, researchers from the National Institute of Education, Nanyang Technological University, and Ohio State University, completed a study of English Language Learners (ELL) and identified a significant element of interventions for ELL students was the provision for teacher feedback on student errors during oral reading tasks (Tam, Heward, & Heng, 2006). Considering that little research has been conducted regarding the effective instructional practices for ELL students, the same authors also identified three

other teaching strategies that have been shown to improve students' word recognition skills and reading fluency. These three strategies included explicit vocabulary instruction, error correction, and repeated readings for ELL student interventions (Tam et al., 2006).

Researchers have emphasized the importance of vocabulary in comprehension and stressed that vocabulary development was important, unfortunately it has been ignored in many studies and instructional programs (Joshi, 2005). Researchers have identified a close relationship between vocabulary and comprehension. Therefore, individuals with poor vocabulary have had difficulty understanding a large portion of written text. Consequently, students with poor vocabulary knowledge were reading less and acquiring fewer new words, while students with better vocabulary knowledge were reading more and improving their comprehension, which has been known as the Matthew Effect (Joshi, 2005).

Many reading programs and intervention programs have been created in attempt to improve student reading performance across all grades. With so many different programs available, each district must select the program that included the instructional components that would suit the district's needs. In 1996, the Legislature requested that the Center for the Improvement of Student Learning (CISL) compile a list of effective reading programs. In early 1997, the CISL distributed this list that included 18 effective reading programs. Of these 18, three were specifically identified as early intervention reading programs; Reading Recovery, Read Right, and Waterford Early Reading Program: Level One (Superintendent of Public Instruction, 1996). Since 1997, other programs have been identified as effective by the CISL, which has given school districts more choices in choosing an effective program for their schools.

Motivating Readers

With such a large number of students not performing at grade level, schools needed to find

different innovative ways to motivate readers. Student lack of motivation could be linked to a number of reasons, but the important issue was finding appropriate tools to motivate students and increase their reading skills. Without the spur of motivation, struggling students stood less chance of becoming engaged readers.

Reading has been a delightful and enjoyable pastime for many years, however, not all people have found this to be true. Many individuals never learned to read for enjoyment purposes, perhaps because reading was laborious and challenging for them. Another option was that children lost motivation to read due to their repeated failure to acquire requisite skills. The emotional and cognitive demands placed on a reader varied according to the subject matter that the reader was tackling. Whether or not a reader felt confident that he or she had the skills to handle a given reading situation made a difference in one's approach to reading. If students believed they had a good chance of successfully understanding what

they were reading, then they were likely to be more motivated to engage in reading and to persevere (Vacca, 2006). Educators needed to give struggling readers a boost of confidence by increasing their motivation to comprehend texts and introduce students to a variety of comprehension strategies. Effective research-based comprehension strategies included question generation, question-answering routines, comprehension monitoring, cooperative learning, summarization, graphic organizers, and familiarity with different text structures (Vacca, 2006). Students also needed to be engaged in text and feel a sense of purpose for reading the text that somehow related to their lives before they could use those strategies or become motivated to read (Vacca, 2006).

Authors Guthrie and Humenick, based on their study in 2004, reported evidence that several classroom practices improved reading motivation. These classroom practices included allowing students to choose books or tasks during reading instruction, providing opportunities for student collaboration,

supplying interesting texts for instructional activities, and incorporating hands-on activities or real-world interactions connected to specific book-reading activities (Guthrie, Hoa, Wigfield, Tonks, & Perencevich, 2006). Researchers also suggested that building personal relationships with teachers or tutors who encouraged reading books and effectively scaffolded the reading process could also be responsible for increased interest and intrinsic motivation in reading (Guthrie et al., 2006).

A veteran professor and advocate for literacy, Dr. Abha Gupta suggested incorporating innovative ideas into reading instruction that would engage and motivate students. One of Dr. Gupta's ideas was to incorporate music by using karaoke as a motivational tool. Karaoke referred to singing songs to a musical background while reading the lyrics printed on the screen or monitor. Gupta reviewed research that included a large body of evidence that stated that arts instruction could significantly strengthen students' academic performance (Gupta, 2006). Several

studies have been conducted by researchers regarding the inclusion of music and the arts within reading programs. Researchers, including Hansen, Bernstorf, Butzlaff, Lamb, and Gregory, have found relationships between music and reading achievement, and some have claimed that including music and the arts within the reading programs resulted in a dramatic rise in reading test scores (Gupta, 2006). The use of music in the classroom could make the entire learning process more enjoyable and could stimulate learning. Dr. Gupta performed a brief quasi-experimental study using karaoke at a short summer camp. After this study, Dr. Gupta discovered that children's reading rate was not affected by the karaoke strategy, but motivation towards reading went up (Gupta, 2006).

Student motivation often depended on the individual children and his/her interests, struggles, experiences, and other motivation factors. Teachers and researchers have been able to incorporate games such as "Stop and Go Reading" into the reading instruction, which has motivated students (Allor,

Gansle, & Denny, 2006). These games have been designed to work as an intervention strategy aimed to improve student skill in a particular area, such as phonemic awareness or fluency rates. After children experienced success through the games, they were more motivated to read and to try harder at other reading activities (Allor et al., 2006).

Using partners and student collaboration has also improved motivation perhaps due to the children experiencing a scaffold of support as they learn. Peer tutoring and peer activities allowed children to learn from each other and help each other on a more personal level, rather than as a whole group. Children involved in partnerships, did not have to experience failure in front of all their classmates, rather if there was a moment of trouble or failure, it was brief and then the partnership moved on. One study conducted in 2007 used peer partnership in the classroom to improve reading fluency. The authors of this study found that children significantly improved their reading fluency compared to those students who did not experience the

fluency partnership activities (Allor et al., 2006). The teachers involved in this study noted that the children in the partnership who were the lower readers being tutored, also gained more confidence, began reading books of their choice during free time, and also looked forward to and tried hard to become the tutor in the partnership activities (Allor et al., 2006).

Motivation has taken many roads for different children. Some students have been easily motivated, while others were reluctant to enjoy reading. It was and always will be vital to the success of our society that teachers and parents find innovative ways to motivate students so they can become successful, productive members in our society.

Summary

The literature reviewed described the importance of incorporating effective reading programs to ensure that all students learn to read. Effective programs must include instruction in phonemic awareness, phonics, vocabulary, fluency, and comprehension.

Teachers needed to find innovative and efficient methods of motivating students so they learn to read and also learn to enjoy literature. One must also take into consideration that each child was made of individualized complex systems that vary from child to child so one way does not work for all children.

CHAPTER 3

Methodology and Treatment of Data

Introduction

Administration and staff within the Aberdeen School District felt that there were too many students performing below grade level in reading. As a result of these numbers, the district adopted the Read Well program to be used as a reading intervention for Kindergarten through second grade students who tested below grade level. Aberdeen School District implemented this Read Well intervention with the hope that more students would perform at or above grade level, then the staff could focus more intervention attention and techniques on those students who enter the district performing below grade level.

Methodology

The researcher used a quasi-experimental design because it just was not possible to randomly assign individual participants to the control and treatment groups. The particular quasi-experimental design the researcher used was the nonequivalent control group

design, again with the exception that the intact groups were not randomly assigned. Basically this nonequivalent control group design included a pretest, the treatment group received a treatment (Read Well intervention as needed), and then a posttest was administered. Then using the t-test for independent samples, these raw scores were compared to the raw scores of the control group who also received a pretest (DIBELS) in September 2005 and a posttest in May 2006.

A t-test for independent samples was used at the beginning of this study to determine that the students in the control group were similar to that in the treatment group. This t-test was important to prove that the groups were in fact similar so the test scores could be compared.

Participants

First grade students enrolled at McDermoth Elementary in Aberdeen, Washington between September 2005 and June 2007 were the participants of this experimental study. During the 2005/2006 school year,

there were three reading classes for first grade; Mrs. H, Mrs. Y, and Mrs. D. The total number of students enrolled in those three classes was 42; 20 girls and 22 boys. Of these 42 students, 21 met the benchmark to be considered at grade level in September, 11 were below grade level but only needed some additional intervention according to the DIBELS benchmarks, and 10 scored even further below grade level and needed substantial intervention before they would reach grade level. Those numbers broke down into 21 kids considered to be performing at grade level and 21 kids below grade level.

During the 2006/2007 school year, there were also three classes of first graders. Two of the classes, Mrs. R and Miss W, were typical first grade classrooms but the third room, Mrs. O, was a kindergarten/first grade combination class with only seven first graders. The first graders in Mrs. O's class were chosen based on their very low DIBELS results, teacher recommendation, and their poor kindergarten experiences. The principal and first grade teachers

put those seven students into the combination class in hope that they would benefit from the language experience and review of kindergarten curriculum.

There were only two more students tested in September of 2006 than the year prior. Of those 44 students, 19 were females and 25 were males, 24 were at grade level, 11 needed some additional intervention, and 9 needed intensive intervention to reach grade level by the end of the school year. For the treatment group, the total numbers break down into 24 students at grade level, and 20 below grade level.

During the 2005/2006 school year, the control group only received reading instruction from their assigned reading teacher. However, during the following year, Mrs. D or one of her classified staff taught the students who attended the Read Well intervention. Thus, the students in 2006/2007 received the normal reading instruction from their first grade teacher, but someone outside the classroom setting also instructed those students who received Read Well intervention.

The majority of the participants in this study are six and seven years old, however, there are a handful of students who turned eight by the end of their first grade year. There were a variety of racial differences that included Native American, Caucasian, Pakistanian, Mexican, Chinese, and Philippino. Both the control group and the treatment group had a number of bilingual students, with the majority of them speaking both English and Spanish.

Instruments

The instrument used to compare the growth of performance for this experimental study was the DIBELS (Dynamic Indicators of Basic Early Literacy Skills) test that was given to both groups of first graders in September, January, and May of each school year. This standardized test was individually administered to measure early literacy development in each first grader. Each piece of the DIBELS test measures the fluency of pre-reading and early reading skills.

The subsets of tests assess students' phonological awareness, alphabetic understanding, and

automaticity. Each piece of the DIBELS test has been thoroughly researched and labeled as reliable and valid indicators of early literacy development.

Design

The researcher used a quasi-experimental design, more specifically focusing on a nonequivalent control group design. With this format, both the control group and the treatment group were given a pretest at the beginning of the year and a posttest at the end of the school year. The treatment group received the reading intervention during the time between the pretest and the posttest. The one piece that didn't follow the nonequivalent group design was that the groups were not randomly formed. In this regard, this experimental study resembles the static-group comparison.

Some factors that were negatively associated with this experimental study that could affect the validity include regression, mortality, and selection-treatment interaction. Regression could have played a part simply due to the fact that statistically participants who score high on a pretest tend to score lower on a

posttest and participants who score lower on a pretest tend to score better on the posttest. The researcher had an issue with mortality because there were several participants that couldn't be used in the final data analysis due to the fact that they moved out of the district before the final posttest. Most of these students were from lower socioeconomic standing and their families had to move due to employment reasons or because they were from families that moved quite frequently. There were other students who enrolled at McDermoth part way through the school year but couldn't be used because they weren't there for the entire experimental period. Selection-treatment interaction was an issue just because the two experimental groups were not randomly assigned; therefore they might not have been completely representative of typical Aberdeen first graders, or of the general population of first graders in our education system. Because the groups are not selected randomly, the researcher cannot easily generalize the results of the study.

Procedure

The researcher began gathering data for this experimental study in September 2006. The researcher collected the DIBELS results for the control group using the DIBELS online website. The control group included the first grade students in 2005/2006 who just receive normal reading instruction using the Open Court curriculum.

In September 2006, the treatment group was tested with the DIBELS assessment. Those results were used to determine the students performing below grade level, which in turn were the students who received the Read Well intervention. During the same testing window, Mrs. D and her classified staff assessed each first grader using the Read Well assessment to find out if they tested out of Read Well or to determine which unit and lesson the children would start at.

Also in September and the months to follow, the researcher began organizing and analyzing the data from 2005/2006. As soon as the September DIBELS results were available for the 2006/2007 year, the

researcher found each student's raw scores for the September pretest and used those numbers to run a t-test for independent samples to determine if the two experimental groups were similar in make up.

Every day, the students who were selected to receive extra reading instruction left the classroom at 1:00 pm and went into Mrs. D's room. In Mrs. D's room, students were grouped according to how they tested on the Read Well assessment. Students returned to the general classroom around 1:45 pm. During the year, Mrs. D and her classified staff met weekly to move students or rearrange groups according to student progress and performance. Remember, this extra reading instruction with Mrs. D was in addition to the normal classroom reading instruction based on Open Court curriculum. Students were doing Open Court reading in their homeroom class from 9:00-10:15 am each day.

In June 2007, when the DIBELS results of the treatment group came available, the researcher began to compile the raw posttest scores for each student. Then used these raw scores and the control group's raw

scores from the May DIBELS assessment to run another t-test. This t-test was used to determine whether or not the reading intervention made a significant difference in student performance. The calculated t-value was then compared to Gay's probability thresholds provided in Experimental Research to determine significance.

Treatment of Data

The two groups involved in this experimental study were selected as a convenient sample. All of the first graders at McDermoth Elementary were used because they were available to the researcher. Altogether there were 86 students involved; 42 in the control group and 44 in the treatment group. Of these students, 39 were girls and 47 were boys.

The DIBELS, Dynamic Indicators of Basic Early Literacy Skills, assessment was used for the pretest and posttest of both the control group and the treatment group. The AmeriCore workers at McDermoth Elementary administered the DIBELS tests for both groups involved in this experimental study. The

results from DIBELS tests were posted online, which gave the researcher easy access to the results at anytime throughout the study.

The researcher used the STATPAK program to run the t-test for independent samples. The t-test gave a calculated t-value that the researcher used to determine if the Read Well intervention significantly improved student reading performance. The STATPAK program calculated the statistical information that the researcher needed during this experimental study.

For the sake of personal choice, the researcher also used Microsoft Excel to organize the different scores and numbers that were used during this study. Excel allowed the researcher to organize the tests scores in a user-friendly manner.

Summary

Even though the control group used the 2005/2006 students at McDermoth Elementary and the treatment group used the students from the 2006/2007 year, this experimental study only took one school year to complete. These groups were formed out of convenience

to the researcher because they were in a usable setting that the researcher had access too.

The researcher used the DIBELS assessment because it was convenient, and also valid and reliable. Aberdeen School District already used the DIBELS assessment throughout the schools so the results from years prior were easily available to the researcher.

This experimental study allowed the researcher to compare scores of student performance before and after a reading intervention program was implemented at McDermoth Elementary. These scores were valuable to the researcher and could be shared with the staff and administration at McDermoth to support their efforts at improving the number of students performing at grade level.

CHAPTER 4

Analysis of the Data

Introduction

The number of students reading below grade level concerned the staff and administration within the Aberdeen School District. Their attempt at improving student reading performance included the implementation of a reading intervention program for students who tested below grade level. Based on the DIBELS results, teacher recommendation, and/or classroom performance, students were placed into the intervention classes in hope to improve performance. The Aberdeen School District adopted the Read Well curriculum for the Kindergarten through second grade intervention program and Read Naturally as the intervention curriculum for third through sixth grade.

The researcher compared the DIBELS results of the first graders from 2005/2006 and 2006/2007 school years. The researcher tried to determine if student performance significantly increased after receiving the Read Well intervention in 2006/2007.

Description of the Environment

This experimental study used the first graders from McDermoth Elementary in Aberdeen, Washington over the duration of the 2005/2006 and 2006/2007 school years. These students ranged in age from six to eight years old upon completion of the study. There were a total of 86 students involved; 42 in the control group (20 girls, 22 boys), and 44 in the treatment group (19 girls, 25 boys).

During the 2005/2006 school year, there were three general classroom teachers that taught reading using the Open Court curriculum. The following year, the treatment group also had three general education teachers that used Open Court curriculum. However, the reading intervention was taught by a reading teacher and classified staff outside of the general classroom using Read Well curriculum. Sometimes these small groups met in the reading classroom, while other times they met in whatever empty place could be found, such as the conference room in the main office, on the empty platform at the top of the stairs, in the tiny

study room that doubles as a closet, or in the lunchroom. One of the other delimitations to be considered was that the classified staff received limited instruction on how to use and teach with the Read Well Curriculum and that they were not certified teachers that had years of instructional training.

The time frame for the intervention class for first graders was from 1:00-1:45 pm, four to five days per week. It's important to note that this time was 30 minutes after their lunch and lunch recess, it meant that the involved students also missed their afternoon recess at 1:15, and perhaps more importantly it was in the afternoon, which teachers know most students have shut down their learning mind frame by this time.

Hypothesis

The performance growth changed on the 2006/2007 DIBELS test for first graders who received 40 minutes of daily Read Well intervention compared to those who did not receive reading intervention the previous year. Reading intervention had the power to help students make great strides in their abilities.

Null Hypothesis

There was not a significant difference in performance growth on the 2006/2007 DIBELS between first graders who received Read Well intervention and those who did not in 2005/2006. Significance was determined at the probability thresholds of .05, .01, and .001 as provided in Gay's book, Educational Research (2006).

Results of the Study

The 44 first graders in the treatment group were given the DIBELS pretest in September and the posttest in May. The subtests on the pretest included Letter Naming Fluency, Phoneme Segmentation Fluency, Nonsense Word Fluency, and Word Use Fluency. The posttest reassessed the areas of Phoneme Segmentation Fluency, Nonsense Word Fluency, and Word Use Fluency, however, it also tested Oral Reading Fluency. The raw score was the sum of the pretest and posttest scores. A complete table of student scores was illustrated in Appendix A.

Table 1

DIBELS Raw Scores for Treatment Group

Student	September	May	Raw Scores
X ₁	41	264	305
X ₂	125	241	366
X ₃	109	254	363
•	•	•	•
•	•	•	•
•	•	•	•
X ₄₂	18	92	110
X ₄₃	74	136	210
X ₄₄	81	155	236

Note. Mean of September = 126.43
Mean of May = 235.73
Mean of Raw Scores = 362.16

The control group only included 42 first graders. These students were assessed using the same DIBELS tests as the treatment group. Table 2 also shows the student scores on the September DIBELS, May DIBELS, and then the raw score, which was the sum of the September and May scores. The complete table of the control group's scores was displayed in Appendix A.

Table 2

DIBELS Raw Scores for Control Group

Student	September	May	Raw Scores
X ₁	45	58	103
X ₂	49	128	177
X ₃	91	262	353
•	•	•	•
•	•	•	•
•	•	•	•
X ₄₀	158	279	437
X ₄₁	177	226	403
X ₄₂	227	387	614

Note. Mean of September = 107.33
 Mean of May = 218.81
 Mean of Raw Scores = 326.14

The researcher used a t-test for independent samples to determine if the reading intervention made significant difference in improving reading scores. The t-test was calculated using the STATPAK Statistical Software. The STATPAK program calculated all of the scores and produced the necessary statistical numbers that were needed to carry out this statistical analysis, which was compiled into Table 3.

Table 3

Comparison of t-test Values for the Raw DIBELS Scores

<u>Statistic</u>	<u>Value</u>
No. of Scores in Group X	44
Sum of Scores in Group X	15935.00
Mean of Group X	362.16
Sum of Squared Scores in Group X	6490719.00
SS of Group X	719713.89
No. of Scores in Group Y	42
Sum of Scores in Group Y	13698.00
Mean of Group Y	326.14
Sum of Squared Scores in Group Y	5089362.00
SS of Group Y	621857.14
t-Value	1.32
Degrees of Freedom	84

$$t = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{\left(\frac{SS_1 + SS_2}{n_1 + n_2 - 2}\right)\left(\frac{1}{n_1} + \frac{1}{n_2}\right)}}$$

$$t = \frac{362.16 - 326.14}{\sqrt{\left(\frac{719713.89 + 621857.14}{44 + 42 - 2}\right)\left(\frac{1}{44} + \frac{1}{42}\right)}}$$

$$t = 1.32$$

Table 4 listed the probability thresholds provided in Gay's book Educational Research that were used to determine if DIBELS scores significantly improved after receiving the Read Well intervention. The t-value calculated on the STATPAK program had to be above those listed thresholds to be significant.

Table 4

Probability Thresholds to Determine Significant Growth

df	P		
	.05	.01	.001
84	2.000	2.660	3.460

Note. $p < .05, .01, .001$ (Gay, 2006) not significant

After running the t-test, the researcher used the calculated t-value of 1.32 to check for significance. Because the t-value was below the threshold of 2.000 for the probability of .05, the researcher found that the reading intervention did not significantly improve student performance. Thus, the null hypothesis stating there was not a significant difference in performance growth on the 2006/2007 DIBELS between first graders who received Read Well intervention and those who did not in 2005/2006 was accepted by the researcher.

Findings

Upon running a t-test for independent samples on the STATPAK, the researcher was given a t-value of 1.32. This value was below the probability threshold of 2.000, which meant there was not a significant difference in performance between the first graders from 2005/2006 and those in 2006/2007.

In this experimental study, the researcher accepted the null hypothesis because the calculated t-value of 1.32 was below the provided threshold of 2.000. The null hypothesis stated there was not a significant difference in performance growth on the 2006/2007 DIBELS between first graders who received Read Well intervention and those who did not in 2005/2006. Significance was determined at the probability thresholds of .05, .01, and .001 as provided in Gay's book, Educational Research (2006).

As the null hypothesis was accepted, consequently the findings in this study did not support the hypothesis. The hypothesis stated the performance growth changed on the 2006/2007 DIBELS test for first

graders who received 40 minutes of daily Read Well intervention compared to those who did not receive reading intervention the previous year. In conclusion, the hypothesis was not supported because the t-value of 1.32 was not larger than the thresholds provided in Experimental Research, which would determine significance.

Even though the results did not support that significant growth had taken place due to the Read Well intervention, the researcher did find that more students upheld their level of performance in the treatment group than those in the control group. This might not have been significant but it did give positive marks to the reading intervention. Table 5 listed a breakdown comparison between the control group's scores and the treatment group's scores.

Table 5

Comparison Breakdown of DIBELS Results

CONTROL GROUP

	September Scores			May Scores		
	Benchmark	Strategic	Intensive	Benchmark	Strategic	Intensive
Mrs. Y	8	3	4	6	3	6
Mrs. H	7	2	4	8	2	3
Mrs. D	6	6	2	6	3	5
Total 05/06	21	11	10	20	8	14

TREATMENT GROUP

	September Scores			May Scores		
	Benchmark	Strategic	Intensive	Benchmark	Strategic	Intensive
Miss W	13	4	1	15	3	0
Mrs. R	10	6	5	14	4	3
Mrs. O	1	1	3	0	1	4
Total 06/07	24	11	9	29	8	7

Discussion

Upon completion of this study, the researcher's results were different than what was expected. The researcher expected for the DIBELS results for 2006/2007 to have improved significantly from the year before. Surprisingly, the DIBELS results were better overall, but they didn't improve enough to be considered significantly better. This could have been due to the September scores being slightly higher for the treatment group, thus one would expect for the scores to be slightly higher in May too.

Similar to that of the researcher, Aberdeen School District was expecting that DIBELS results and reading performance would improve due to the Read Well Intervention. However, the Aberdeen School District realized it would take two to three years for the true effects of the intervention to be noticed. Obviously one couldn't expect a program to get every child reading at or above grade level in just one school year. Realistically, this type of achievement would be done in baby steps, which seemed to be the case here.

Summary

Aberdeen School District wanted to increase the number of students reading at grade level by the end of the 2006/2007 school year. In attempt to accomplish this goal, Aberdeen School District adopted the Read Well curriculum for use as the intervention material. Students that tested below grade level on the DIBELS assessment would receive 45 minutes of extra reading instruction four to five times per week.

The researcher used the DIBELS results from 2005/2006, the year before the reading intervention started, and compared them with the results from 2006/2007 to see if the reading intervention made a significant difference in student reading performance. After running a t-test of the May DIBELS scores, the researcher used the t-value of 1.32 to check for significance. As it turned out, this t-value was not larger than the provided probability thresholds at .05, .01, or .001, which meant the intervention classes did not significantly improve student scores.

The results of this study were not what the researcher expected, but they were realistic. According to the DIBELS results, the number of students performing below grade level did decrease from 22 to 15 during the treatment year, which was a positive mark for the Read Well intervention (See Table 5). The gradual decrease in the number of students performing below grade level was probably more realistic and in line with expectations of the researcher and the Aberdeen School District.

The findings of this study allowed the researcher to accept the null hypothesis. The null hypothesis claimed there was not a significant difference in performance growth on the 2006/2007 DIBELS between first graders who received Read Well intervention and those who did not in 2005/2006. Consequently, the findings did not support the hypothesis that performance growth changed on the 2006/2007 DIBELS test for first graders who received 40 minutes of daily Read Well intervention compared to those who did not receive reading intervention the previous year.

CHAPTER 5

Summary, Conclusions and Recommendations

Introduction

School staff and administration knew how important it was for students to read competently and perform at grade level. Aberdeen School District wanted to increase the number of students reading at grade level because there were too many children performing below grade level. In attempt to bring these low performers up to grade level, Aberdeen School District adopted the Read Well curriculum to be used as the reading intervention material. Students performing below grade level according to the DIBELS test will receive 45 minutes of extra reading instruction four to five times per week in attempt to increase the number of students at grade level.

Summary

In order to perform this experimental study, the researcher gathered data from the DIBELS website. That allowed the researcher to compare the test results from the 2005/2006 and the 2006/2007 school terms. The

data allowed the researcher to determine if the reading intervention classes significantly improved student reading performance.

In Chapter 1 of this paper, the author introduced the reader to the problem at hand and the purpose of the study. Other topics included the description of the parameters of this project, the procedure the researcher used during this project, and the hypothesis.

The researcher had to read literature to be used as background knowledge and support for this study. A discussion of this literature and the important ideas related to this study can be found in Chapter 2 of this paper.

With this study, the researcher found it important to share with the reader details on the experimental method, the participants involved in this study, the instruments used for data collection and analysis, and the overall design of this study. This information along with the procedure and the treatment of data can be found in Chapter 3.

Chapter 4 was the statistical portion of the write up and provided the study's results. Within this chapter, one can find descriptions of the environment, the results shown in tables that help lay out the scores in a reader-friendly format, and the findings of the study.

Conclusions

The conclusion drawn from this study was that the Read Well intervention did not have the capacity to bring all struggling readers up to grade level standards in one year, at least not at McDermoth Elementary. However, as shown in Table 5, the number of students performing below grade level decreased after having the intervention classes. That showed signs that the intervention classes could continue to decrease the number of students below grade level if used appropriately over the next couple years.

Recommendations

The Read Well program, as do many other programs, claims that the effects of the curriculum often take more than one year before they can be noticed. If this

is true, then the staff at McDermoth Elementary should notice some growth in performance and DIBELS scores over the next couple years. The researcher recommends performing another experimental study similar in nature to this one in two or three more years to see if student reading performance actually does improve significantly. It would be even more impacting if the same teachers were still teaching together when the study is done again, however, that will not be the case at this particular school. Perhaps a similar study can be done at a different school that is similar in make up or at least has similar objectives.

The other recommendation is that the researcher, or another researcher, compares the results of this study to a school or district outside of Aberdeen to check for similarities regarding the findings. Collaboration between or among those school districts could be take place to see why one isn't working as well as the other, or find the similarities in their implementations that could attribute to the success or failure of the reading intervention program.

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APPENDIX A

Control Group 2005/2006			
Student	Sept.	May	Raw
St 1	45	58	103
St 2	49	128	177
St 3	91	262	353
St 4	73	283	356
St 5	120	137	257
St 6	105	231	336
St 7	90	201	291
St 8	109	140	249
St 9	117	200	317
St 10	93	194	287
St 11	157	288	445
St 12	147	259	406
St 13	121	206	327
St 14	195	252	447
St 15	17	73	90
St 16	36	160	196
St 17	112	184	296
St 18	90	243	333
St 19	96	158	254
St 20	37	98	135
St 21	88	172	260
St 22	95	149	244
St 23	97	260	357
St 24	121	224	345
St 25	105	148	253
St 26	142	218	360
St 27	121	276	397
St 28	153	317	470
St 29	191	339	530
St 30	19	79	98
St 31	23	164	187
St 32	49	209	258
St 33	35	143	178
St 34	102	306	408
St 35	137	344	481
St 36	83	273	356
St 37	167	343	510
St 38	134	273	407
St 39	184	306	490
St 40	158	279	437
St 41	177	226	403
St 42	227	387	614
Sums :	4508	9190	13698

Treatment Group 2006/2007			
Student	Sept.	May	Raw
St 1	41	264	305
St 2	125	241	366
St 3	109	254	363
St 4	113	283	396
St 5	97	269	366
St 6	94	225	319
St 7	177	168	345
St 8	100	251	351
St 9	144	191	335
St 10	132	266	398
St 11	102	235	337
St 12	166	235	401
St 13	157	269	426
St 14	164	230	394
St 15	110	332	442
St 16	177	303	480
St 17	207	361	568
St 18	332	430	762
St 19	116	278	394
St 20	89	140	229
St 21	61	207	268
St 22	59	148	207
St 23	88	165	253
St 24	157	156	313
St 25	83	267	350
St 26	115	231	346
St 27	110	220	330
St 28	148	262	410
St 29	96	190	286
St 30	75	183	258
St 31	114	231	345
St 32	110	271	381
St 33	177	200	377
St 34	135	247	382
St 35	175	258	433
St 36	256	368	624
St 37	195	308	503
St 38	248	427	675
St 39	62	84	146
St 40	163	219	382
St 41	11	122	133
St 42	18	92	110
St 43	74	136	210
St 44	81	155	236
Sums :	5563	10372	15935