Increasing Sight Word Retention in a Half Day Kindergarten Program Using a Kinesthetic Approach to Learning

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An Action Research Project

Presented to

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CHAPTER 1

Introduction

Background for the Project

Tenino School District (TSD) was a small district in Tenino, Washington. Demographics of TSD according to The Office of the Superintendent of Public Instruction (OSPI) in 2005 were approximately 87.7% white, 4.9% Hispanic, 1.3% black, 1.9% Asian, and 1.7% American Indian/Alaskan Native students. The percentage of students who qualified for free or reduce-priced meals were 33.8%. The percentage of the TSD population who qualified for Special Education services were 12.6% and 1.0% of the TSD student population were Transitional Bilingual.

The researcher taught half day morning kindergarten at Parkside Elementary School (PES) in TSD. Half day kindergarten met Monday thru Friday for 2 ½ hours. On half days of school for the district, half day kindergarten only met for 1 ½ hours. With such a time restraint, it was becoming increasingly difficult for the children to achieve the increased academic expectations required by Washington State.

Statement of the Problem

With the implementation of No Child Left Behind (NCLB), every child was required to meet standards in reading. The Washington State Grade Level Expectations (GLE's) required kindergarten students to read sight words. Not all students in the researcher's classroom were meeting this standard. Without change, it was predicted that these students would be unable to keep up in first grade the following year.

Purpose of the Study

In doing this study, the researcher's purpose was to determine whether or not using a kinesthetic approach to teaching and learning sight words would make a difference in the scores of a half day kindergarten class in comparison to a half day kindergarten class from the previous year in which a kinesthetic approach was not used. The researcher's intention was to engage the students and to motivate the students into practicing sight words in a fun, meaningful way. The researcher wanted the students to see improvement in their sight word knowledge.

Delimitations

The study took place over a two school year time period. The years represented in the study were the 2006-2007 and the 2007-2008. The data were taken at the beginning and end of spring trimester both years. The study took place at Parkside Elementary School (PES) in Tenino, Washington. The participants in the study were the researcher and 18 kindergarten students for each

of the two school years in a half day kindergarten setting. The materials included a sight word list generated by PES and sight word games that were put together by the researcher.

Assumptions

The students had a competent teacher who was familiar with and taught to the state learning standards for kindergarten. They were all participants in a half-day kindergarten program. All students were able to learn sight words. The students were immersed in a classroom environment that was developmentally appropriate for their age. The pace of the curriculum was guided by the specific reading goals for the school and the state. Children practiced their sight words at home as a part of their weekly homework. When assessed, students did their best when reading the sight words and scores reflected the student's true knowledge.

Hypothesis

Students were required to know how to read. Kindergarten students who used a kinesthetic approach to learning sight words had a significant change in scores compared to students who did not use a kinesthetic approach to learning sight words.

Null Hypothesis

Kindergarten students who used a kinesthetic approach to learning sight words had no significant change in scores compared to students who did not use a

kinesthetic approach to learning sight words. Significance was determined for $p \geq .05, .01, .001$.

Significance of the Project

The Washington State Grade Level Expectations required kindergarten students to read sight words. At the end of winter trimester of the 2007-2008 school year, only 22% of students in the researcher's kindergarten class met standard in the area of sight words. Standard was based upon students scoring 80% or above on the report card assessment.

Procedure

For the purpose of this project, the following procedures were implemented:

1. The researcher recovered sight word scores from the end of winter and the end of spring trimester of the 2006-2007 school year.
2. The researcher gave students a pretest at the end of winter trimester of the 2007-2008 school year.
3. Each week the researcher had students working on learning sights words using a kinesthetic approach in whole group, small group, and individual settings.
4. Students became more independent at practicing the sight words individually and in small groups during.

5. At the end of the spring reporting period, the researcher gave students a post test to determine whether or not there was significant growth in sight word knowledge.

Definition of Terms

For the purpose of this study, the following words were defined:

intelligence. An intelligence was a natural talent or strength.

sight word. A word that was immediately recognized as a whole word and did not require word analysis for identification.

Acronym

GLE. Grade Level Expectation

IQ Intelligence Quotient

NCLB. No Child Left Behind

OSPI. Office of the Superintendent of Public Instruction

PES. Parkside Elementary School

TSD. Tenino School District

CHAPTER 2

Review of Selected Literature

Introduction

The researcher wanted to improve the sight word scores of the students in her half day kindergarten classroom through a kinesthetic approach to learning. The researcher believed that by using a kinesthetic approach to learning sight words, activities would be more age-appropriate and fun for the students. The researcher wanted a stronger knowledge base for her research project. The researcher wanted to learn more about language development because language was essential for reading even if a child was deaf. The child needed to have a basic understanding of language for communication. Differentiated instruction was valuable as a teacher because it helped make learning meaningful to students on an individual level and catered activities to their specific needs. Finally, the researcher felt cognitive development was also an important area of research for the project because without cognition, students would be unable to read and interpret sight words for understanding.

Several dimensions of learning were analyzed in Chapter 2. They were language development, differentiated instruction, multiple intelligences and cognitive development.

Language Development

The foundation for language began in the first year of life with prelinguistic communication. Prelinguistic communication was when one person would communicate to another by gestures, sounds, facial expression, and imitation (Steinberg & Belsky, 1991). Mothers often used prelinguistic communication with their infant while holding, changing, or playing. This was one way adults taught their infants because infants responded to the gestures and sounds in a positive manner. Newborns and infants intentionally communicated their wants and needs also by crying, kicking, arching his or her back, and/or vocalizing (Harding, 1983).

Newborns began with receptive communication, both visually and auditorally (Owens, 1984). Newborns were able to discriminate between speech directed at them and speech directed at another. This was a necessity for language development later in life.

By the second month of life most infants began to coo. A coo was characterized by a vowel sound. This was usually a response to a human face, eye contact. Social smiling paralleled cooing as part of the communication between infants and adults even at such a young age (Owens, 1984).

After receptive communication and cooing, infants began to initiate communication by smiling or coughing. The infant also learned how to take turns communicating. Often, an adult would gesture or make sounds and wait for the

infant to respond (Steinberg & Belsky, 1991). Intentions could be communicated and a full range of emotions were able to be heard in the vocalizations of the infants. This part of language development also tied in with a stage of cognitive development where the infant was able to have goal-directed or intentional activities.

By six months, babbling began. Babbling was characterized by both vowel and consonant sounds. It was a more complex piece of language development. Babbling continued until a child's first meaningful words began, then babbling decreased. Babbling appeared to be universal with infants. Even infants with parents who were deaf showed the same patterns at the beginning of language development (Steinberg & Belsky, 1991).

From six to twelve months the infant attempted to control interactions more. During this stage they demonstrated selective listening and were able to comply to simple requests. They were even able to perform simple motor behaviors. During this period of language development, infants were starting to vocalize first words (Steinberg & Belsky, 1991).

Expressive language began at approximately two years of age when infants realized the usefulness of communication and the utility of words as a vehicle of communication. Now the infants were full fledged communicators and the stage was set for further language development and the development of

literacy. At this age children had approximately 200 words in their vocabulary (Steinberg & Belsky, 1991).

By the time children were reaching the preschool years, they were able to learn as many as four new vocabulary words per day. At this age they used sentences containing who, what, when, where, and why. This helped the children as they searched for explanations. Later in language development children learned to use prepositions or concept words and adjectives more often in their language interactions with others.

Differentiated Instruction

Differentiated instruction took into account learning modalities and intelligences. A learning modality was defined as "a way in which we process and understand information that is presented to us" (Middendorf, 2008). In other words, it was a route to subconsciously make sense of the world around us. Middendorf suggested that by using our preferred modality, we were enabled to concentrate and move from concrete to abstract thinking. Modalities of learning included visual, auditory, tactile, and kinesthetic.

Differentiated instruction addressed attending to the differences of student's. Differentiation was based on the beliefs that everyone learned differently and quality was more important than quantity (Bravmann, 2004). It meant that teachers tailored their instruction to meet the individual needs of the

children in their classes (Tomlinson, 2000). Differentiated instruction was critical for heterogeneous classrooms, classrooms where there was diversity among the learners. (George, 2005). Diversity could have included students with disabilities, students who were gifted, and all students in between. Learning styles and cultural make-up of the students needed to be taken into account. Individuality needed to be honored and children needed to have the opportunity to guide what and how they were learning (Smutny, 2004).

There were several ways a teacher could incorporate differentiated instruction into the classroom (Lewis & Batts, 2005). Examples were flexible grouping, learning centers, independent contracts, and adjusting questions. By using flexible grouping, the teacher would be able to take into account student readiness, interest, or learning styles and plan lessons that would best meet the needs of each student. Learning centers would have worked in much of the same way. An example of a center that was designed for differentiated instruction would have been a center teaching a particular subject, but with varying levels of difficulty to meet the needs of the learners. The teacher could also adjust questions meaning the questions could have been focused on a students' readiness level, interests, or learning profile (Lewis & Batts, 2005).

Multiple Intelligences

An intelligence was an natural talent or strength (Middendorf, 2008). It was a way to organize information taken in from our senses. Whereas a modality was a way to process information, an intelligence was a way to demonstrate our understanding. It was thought to offer different pathways for children to succeed (Hoerr, 2002) Most children and adults had strengths in more than one area of intelligence. Intelligences were independent and developed at different times and to different degrees in different individuals (Dickinson, 1996). A Harvard University Professor, Dr. Howard Gardner, was considered the father of multiple intelligences (Koch, 2007). In 1983, Gardner published his first book on multiple intelligences. For Dr. Gardner, multiple intelligences included verbal-linguistic, bodily-kinesthetic, logical-mathematic, intrapersonal, interpersonal, visual-spatial, musical, and naturalistic. These differed from Intelligence Quotient (IQ) tests, which appeared to be a limited, one-dimensional assessment tool (Armstrong, 2000). IQ tests were unable to measure the different abilities individuals possessed and used (Armstrong, 2003).

Dr. Gardner had a colleague, Dr. Tom Armstrong, who also published several books on the topic, but his versions of multiple intelligences differed from Dr. Gardner (Koch, 2007). Dr. Armstrong's eight multiple intelligences were word smart, logic smart, picture smart, music smart, body smart, nature smart, people smart, and self smart.

Tendencies of individuals with linguistic intelligence or word smart, was that they liked to read and/or write, liked to research, liked to play word games, liked to tell stories, and had good vocabulary (Armstrong, 2003). When these individuals got excited they were talkative. They did not need audiences and might even talk to themselves (Koch, 2007).Strengths included teaching, memorizing, and communication (Armstrong, 2003).

For those individuals who were logical mathematical or logic smart, demonstrated reasoning abilities and commonsense reasoning (Koch, 2007). Questioning was very common. These individuals tended to get frustrated by lack of details. They also tended to like numbers, science, mysteries, statistics, logic puzzles, organizing information into charts and graphs, and cause and effect (Armstrong, 2003). Career paths for individuals who were logic smart could have included accountants, computer programmers, or a scientist (Armstrong, 2000).

Next was spatial intelligence or picture smart. Individuals who had this intelligence as a strength had a tendency to think with their eyes (Koch, 2007). They were drawn to visuals such as pictures, diagrams, maps, charts, and illustrations. These individuals learned and thought in pictures (Armstrong, 2003). They did not necessarily pay attention to specific details. They may have drawn or doodled, read or drew maps for fun, played video games, or remember faces instead of names. Career paths that catered to their intelligence included

illustrator, drafter, photojournalist, surveyor, landscape designer, movie maker/movie director, and many more.

Musical or music smart people tended to play an instrument, enjoyed singing, pick up rhythms and sounds, enjoyed listening to music, and/or read music (Armstrong, 2003). It was thought that musical intelligence could have been the first intelligence to appear because babies responded and moved to music even before they could talk. Musical people seemed to have difficulties studying while music played in the background because their attention got sidetracked while they tried to analyze the background music (Koch, 2007). Occupations that emphasized this intelligence included disc jockey, musician, piano tuner, sound engineer, or instrument maker.

Bodily-Kinesthetic or body smart individuals thought by moving and touching (Kock, 2007). It was considered an intelligence of the entire body (Armstrong, 2000). Strengths tended to be in large motor tasks. It was unrealistic for body smart students to sit still for long periods of time in a classroom sitting because they tended to have a constant need for movement. Physical skills tended to be learned easily. These individuals usually had good coordination and were graceful dancers. They also tended to move while thinking. Every day activities that used this intelligence were drawing, painting, weaving, sewing, playing video games, typing on a keyboard, walking, and climbing trees. Possible jobs for

people who had this intelligence could have included carpenter, massage therapist, musician, physical therapist, professional athlete, welder, or hair stylist (Armstrong, 2003).

The sixth multiple intelligence was naturalist intelligence or nature smart. Nature smart people tended to think in patterns (Koch, 2007). They paid attention to similarities and differences. This intelligence was considered similar to picture smart because they used their eyes as well. The difference was that nature smart people focused more on size, shape, patterns, and colors of objects in nature (Koch, 2007). They often thought using comparisons and contrasts. They also tended to have a love of the outdoors. Jobs that nature smart people could have been drawn to were biologist, astronomer, archeologist, meteorologist, rancher, zookeeper, animal trainer, and more (Armstrong, 2003).

Intrapersonal intelligence or self smart tended to be one of the more difficult intelligences to have understood (Armstrong, 2000). Individuals who were self smart tended to be able to reflect on themselves, their strengths, weaknesses, and their goals. People who are self smart often wanted immediate feedback so they could evaluate how they were doing. Grading could have been considered unpleasant to these individuals because their ideas were getting evaluated by others (Koch, 2007). These individuals learned by drawing on personal experiences. Self smart people liked setting and meeting their own goals,

liked deep thought, liked thinking about the future, liked standing up for their beliefs, and would have rather worked on their own instead of with others (Armstrong, 2003). Possible career paths included artist, psychiatrist, researcher, philosopher, comedian, chaplain, inventor, or self-employed business person (Armstrong, 2003).

The final intelligence was interpersonal or people smart according to Gardner and Armstrong. People with this intelligence had the ability to understand and work with others (Armstrong, 2000). Armstrong considered this one of the more important intelligences because life success involved interacting with others. Individuals who were people smart tended to have a lot of friends and a strong ability to read body language (Koch, 2007). They tended to be able to read emotions. They were motivators and peacemakers. Job possibilities included publicist, retail worker, teacher, therapist, lawyer, administrator, business owner, coach, police officer, or reporter.

It was important for parents and educator's to understand the multiple intelligences to help children feel empowered knowing which way they were smart (Koch, 2007). It was also important for individuals to understand that everyone possessed all eight intelligences, some were just proportioned differently (Armstrong, 2000). Intelligences tended to develop at different times and at different levels of intensity. Developing intelligences was a lifelong

journey. The theory of multiple intelligences held out that there may have been more intelligences that have not yet been discovered (Armstrong, 2003). By understanding the different intelligences in children, educators could teach to more than one, thus scores could be increased and students could have better success (Koch, 2007).

Cognitive Development

John Piaget was a Swiss psychologist. Piaget studied cognitive development and was well-known for his ideas about children developing cognitively in stages. As children progressed through each stage, they were able to understand ideas that were more complex and more sophisticated than the previous stages. (Steinberg & Belsky, 1991). Piaget believed that for a person to become an emotional being, they needed to have the abilities to think, communicate, and have an understanding of what was going on (Singer & Revenson, 1978).

Piaget believed that cognitive development came from biology and experience working together (Steinberg & Belsky, 1991). Piaget coined the word schema. Schemata, which was the plural to schema, were the cognitive or mental structures by which individuals intellectually adapted to and organized the environment (Wadsworth, 1996). Schemata were viewed as processes of the

nervous system. They were not physical objects. In the simplest of terms, schemata were thought of as concepts or categories. They were like an index file in which each card represented a schema. Additionally the schemata were used to process and identify, or classify incoming stimuli. Wadsworth (1996) claimed this was a way to differentiate and to generalize. In a newborn, schemata were almost nonexistent. Schemata become more generalized and differentiated as the child developed.

Some other terms that Piaget used in reference to cognitive development were adaptation, assimilation, and accommodation. (Singer & Revenson, 1978). Adaptation was the most important principle of human functioning according to Piaget. It was the continuous process of using the environment to learn and learning to adjust to the changing environment. Assimilation was the process of taking in new information and fitting the information into a preconceived notion about objects or the world. Accommodation was adjusting to new experiences or objects by revising the old plan to fit new information (Singer & Revenson, 1978).

The first period of cognitive development according to Piaget was sensorimotor. Prior to this stage a newborn used only reflex behaviors (Singer & Revenson, 1978). It was in this sensorimotor stage that infants used the five senses along with motor actions to understand the world around them (Steinberg

& Belsky, 1991). During this stage, infants first focused on themselves separate from others, then planning and focusing actions, and finally they gained the knowledge that objects in the world still existed, even if the infant could not see, hear, taste, touch, or smell the object.

Since Piaget first published in the 1930's, researchers have determined there are actually four stages of cognitive development instead of Piaget's proposed six. These new ideas tended to reflect what was happening with the brain at the same time (Steinberg & Belsky, 2001).

By the time children were of preschool-age, most children had language developed and were able to take part in symbolic play or fantasy (Steinberg & Belsky, 2001). Children of this age were also able to incorporate humor into their language. Symbols started becoming a larger part of the child's life. They would frequently use symbols in their drawings to represent real-world ideas. Children who were three to four years old also had their recognition memory developed. This kind of memory was useful for multiple-choice type scenarios. They were also able to use their recall memory. Recognition memory was a strength over recall memory in the children of this age group (Steinberg & Belsky, 1991).

Right around seven years of age, children moved into the preoperational stage of reasoning. This stage dealt with the ability to reason based on the appearance of an object. An example was when a child saw a person dressed in a

costume, a three or four year old would not have thought that under that costume was a person, whereas a seven year old would have been able to reason that a person could dress up in a costume and still be their mom or dad at the same time (Steinberg & Belsky, 1991).

According to Wadsworth, Piaget provided a frame of reference for teachers to analyze behaviors of individual students and plan educational activities that took development into consideration (Wadsworth, 1978).

In regards to reading, cognitive capabilities appeared to be prerequisites to effective acquisition of reading skills (Wadsworth, 1978). Piaget referred to written words as signs. Signs bore no relationship to what they represented, unlike symbols. For a child to begin reading successfully, he or she would have needed to comprehend the use of signs. Developmentally, symbols such as letters and numbers were considered very advanced (Wadsworth, 1978). A child needed to understand the use of the symbols before he or she could have used them. The understanding of signs, from a Piagetian perspective, was developmentally inappropriate for the average child to deal with before the age of nine. Wadsworth also stated Piagetian theory did not support the need for teaching letter identification to learn to identify words and learn to read.

Summary

Language development happened at certain stages in an infants life. Infants followed a progression of language acquisition steps such as cooing, babbling, taking turns in a two-way conversation, and communicating wants and needs through gestures, facial expressions, and crying.

Differentiated instruction was used to understand how students processed information that was presented to them, such as the sight words. Teaching to modalities would help the students be more successful with their learning by taking into account their differences as learners. Using a student's preferred modality could also help the student move from concrete to abstract ways of thinking.

Multiple intelligences was one way to describe the strengths to individuals and how they learned best. By incorporating activities that included several of these intelligences, students would have been more likely to be successful in school. Multiple intelligences could have been used as a guide to educators in planning lessons and activities to capture the interests of students.

Cognitive development was an area that John Piaget wrote his theory about stages of development. Piaget's theory dealt with the idea that cognitive development came from experiences and building on what individual's already knew. Piaget used the word schema, which was a way of individual's organizing their thoughts in a meaningful way.

CHAPTER 3

Methodology and Treatment of the Data

Introduction

The researcher wanted to improve the sight word scores of the students in her half day kindergarten classroom through a kinesthetic approach to learning. The researcher believed that by using a kinesthetic approach to learning sight words, activities would be more age-appropriate and fun for the students. The researcher determined a methodology for data collection and determined an appropriate way to treat the data.

In Chapter 3, the researcher went through and outlined in detail the parameters of her study. They were methodology, participants, instruments, design, procedure, treatment of the data, and summary.

Methodology

The method that was used by the researcher was experimental. Experimental was selected because one group of children were given treatment, hands on activities to reinforce the sight words that were introduced, while the other group was the control group.

Participants

The researcher used a convenience sample from the 2006-2007 school year and the 2007-2008 school year. Each sample was a half day morning kindergarten class. The 2006-2007 class had 16 participants and the 2007-2008 class had 17 participants. For the 2006-2007 school year, 10 of the participants were male and six female. For the 2007-2008 school year, seven of the participants were male and 10 female. For both years, the students had similar backgrounds including socio-economic, ethnic, and academic abilities.

Instruments

The assessment tool used to collect data for the study was the kindergarten winter report card assessment, used as the pretest, and the kindergarten spring report card assessment, which was used as the posttest. These tests were created by the kindergarten staff at Parkside Elementary School and were determined to be at the appropriate developmental level for kindergarten students. The assessment was aligned to the Grade Level Expectations (GLE's) for kindergarten, based on requirements from the Office of Superintendent of Public Instruction (OSPI).

Both assessments were content valid because students were assessed over the sight words that were taught up to that point during that school year. The assessments had face validity too because both assessments appeared to measure what was claimed to be measured, sight words.

The reliability of the assessments, or the degree the assessments consistently measured whatever each was measuring, was high. The students in each sample could be assessed over and over with the same type of assessment and would continue to have consistently similar results.

Design

A quasi-experimental design was used as the method of research for the study. The design that was most closely related to the study was the nonequivalent control group design. The researcher used a pretest and posttest to gather data for the study. The pretest and posttest were created by the researcher and the kindergarten colleagues of the researcher. The pretest was the winter report card assessment which assessed the first 25 sight words taught, while the posttest was the spring report card assessment which assessed all 40 sight words taught.

Procedure

For the procedure, the researcher made some assumptions. The assumptions were the students had a competent teacher who was familiar with and taught to the state learning standards for kindergarten. They were all participants in a half-day kindergarten program. All students were able to learn sight words. The students were immersed in a classroom environment that was developmentally appropriate for their age. The pace of the curriculum was guided

by the specific reading goals for the school and the state. Children practiced their sight words at home as a part of their weekly homework. When assessed, students did their best when reading the sight words and scores reflected the student's true knowledge.

There were also some limitations to the study. The biggest limitation was time. In the half day kindergarten program, not all subjects were taught or reviewed daily due to the amount of material needing to be covered.

The procedures the researcher used started with the list of 40 sight words to be taught and reviewed throughout the year. The sight words were taught in a specific order agreed upon by kindergarten staff. Some weeks one word would be taught and other weeks two would be taught. The number of words taught was determined by the number of sight words that were highlighted in the student's weekly sight word books. These books were utilized because they went along with the kindergarten science or social studies themes.

Students were tested at the end of winter trimester, using the tool that was developed by the kindergarten staff for report cards. The students were tested over the first 25 sight words taught.

Each week thereafter, students were introduced to one or two sight words each week on Monday morning. The first thing the researcher did was write the new word or words on the board at the front of the classroom. Next, the

researcher had the students spell the word or words out loud and attempt to read the word(s). The researcher then read the word(s) to the students. The researcher had the students stand up and push their chairs into the table so they had room for movement. The students spelled out the word(s) on the board and then said the word(s), one at a time, in a kinesthetic approach that was pre-taught by the researcher. Some of the approaches were:

1. Clapping hands while saying each letter of the sight word
2. Stomping feet
3. Wiggling hips like a hula dancer
4. Strumming a guitar like a rock star
5. Revving up a motorcycle like a biker
6. Tossing a lasso like a cowboy or cowgirl
7. Casting a fishing pole and reeling in the catch
8. Dancing like a disco dancer

After kinesthetically spelling the sight word(s), the researcher read the sight word book to the children. The researcher read a sentence of the book and the children repeated the sentence back. This continued through the entire book. The children were then handed their sight word books and pointed to each word as the researcher read the book to them. Next, the children read the book with the researcher. Finally, the children got out their highlighting marker and highlighted

the sight word(s) that were found on each page of the book. The researcher called over individuals one at a time to read the sight word books. Students took the sight word books home the same day to practice at home.

Throughout the week, the students had several opportunities to review the sight words that were taught. At least once a week the researcher played whole group games with the children to reinforce the sight words. One game was around the world, one student would get out of his or her seat, stand behind the student next to him or her, and race to see who could read the sight word flashcard first. The winner would move on to the next student while the loser would be seated. This activity used big body movements by the students getting out of their seats and moving around the classroom. There was also a game where students were divided into two groups. The two groups stood in single file lines facing each other. The researcher stood at the head of both lines. The students at the front of the lines would race to read the word that was flashed at them. The student who was correct and the quickest would earn a point for his or her team. This game was timed and went anywhere from three to five minutes per round. Children also participated in a beach ball game where six sight words were written on the ball. The entire class stood in a large circle and tossed the ball to one another. When a student caught the ball, the student read the sight word that was facing up.

There were also activities that were for smaller groups or individuals. One activity children participated in was spelling out sight words in shaving cream that was sprayed on each of their spots at the table. Students spelled out sight words on magnetic cookie sheets using magnetic letters and students also read sight words on game boards. Students rolled the die that had the number zero, one, or two on it. A child rolled the die and moved his or her token the number of spaces indicated on the die. If the child rolled a zero, his or her turn was over. If the child rolled a one or a two, the student only got to move ahead if he or she could read the sight word on the space. The first student who successfully read the last sight word at the finish line, won the game.

The researcher also made up book bags for each student. Each book bag contained sight word books and books that contained consonant vowel consonant words that children could sound out. These bags were for the children to read when they were finished with group work early. Children were allowed to either read the books to other children that were finished, or highlight words in the books that they either sounded out or read by sight.

When it was time to assess the students for spring report cards, the researcher retested the students using the spring report card assessment. Students were tested over all 40 sight words that were taught throughout the year.

Finally, the results from winter and spring report card assessments were compared using a t-test for both the 2006-2007 kindergarten class and the 2007-2008 kindergarten class.

Treatment of Data

The researcher took the data that was collected in the winter of 2006 and 2007 and compared the scores to the data collected in spring of 2007 and 2008. The tests were exactly the same for the winter assessments, testing over the 25 introduced sight words and the spring assessment was exactly the same for both years testing over the 40 introduced sight words. Growth was determined for each participant and t-test in the program Statpak was used to analyze the data and compare growth to determine if there was significant differences between the growth.

Summary

The researcher used an experimental design to determine whether using a kinesthetic approach to learning sight words would increase the sight word scores of the researcher's participants. A convenience sample was used to determine the participants of the study. The control group was a half day kindergarten class made up of 16 students from the 2006-2007 school year. The treatment group was

a kindergarten class made up of 17 half day kindergarten students from the 2007-2008 school year.. Pretest and posttest were both created by the kindergarten team made up of the researcher and the researcher's colleagues. The pretest was given at the end of winter trimester and tested over 25 sight words. The second group of students were taught sight words using a kinesthetic approach. The posttest was given at the end of spring trimester and tested over the 40 introduced sight words. Growth was determined for each participant. The researcher then entered the data into Statpak and analyzed the data using a t-test to compare growth between the two groups.

CHAPTER 4

Analysis of the Data

Introduction

The study took place over a two year time period in a half day kindergarten class at Parkside Elementary School in Tenino, Washington. The researcher's purpose was to increase sight word reading scores as a consequence of using a kinesthetic approach to learning sight words. The study was brought about because of the need to improve reading scores due to the increased academic expectation brought about by Washington State Legislation and No Child Left Behind.

Description of the Environment

The study took place at Parkside Elementary School, (PES) in Tenino, Washington. PES had developmental preschool, half and full day kindergarten, first and second grade programs. The study took place over a two school year time period. The years represented in the study were the 2006-2007 and the 2007-2008. The data was taken at the end of winter trimester and the end of spring trimester both years. The participants in the study were the researcher, 16 kindergarten students from the 2006-2007 school year, and 17 students from the 2007-2008 school year. Of the 16 kindergarten students from the 2006-2007 school year, ten of the participants were male and six were female. In the 2007-

2008 class of participants, seven were male and ten female. The students were in a half day kindergarten program, which met for 2.5 hours each day. The materials included a sight word list, gameboards, dice, game tokens, beach balls, book bags, and sight word books.

Hypothesis

Students were required to know how to read. Kindergarten students who used a kinesthetic approach to learning sight words had a significant change in scores compared to students who did not use a kinesthetic approach to learning sight words.

Null Hypothesis

Kindergarten students who used a kinesthetic approach to learning sight words had no significant change in scores compared to students who did not use a kinesthetic approach to learning sight words. Significance was determined for $p \geq .05, .01, .001$.

Results of the Study

There were a total of 33 students who participated in the research study. 17 participants were male and 16 were female. These participants were broken down into two groups, the control group which was the 2006-2007 class, and the treatment group, which was the 2007-2008 class. All of these students were in the researcher's half day kindergarten classes (see Figure 1).

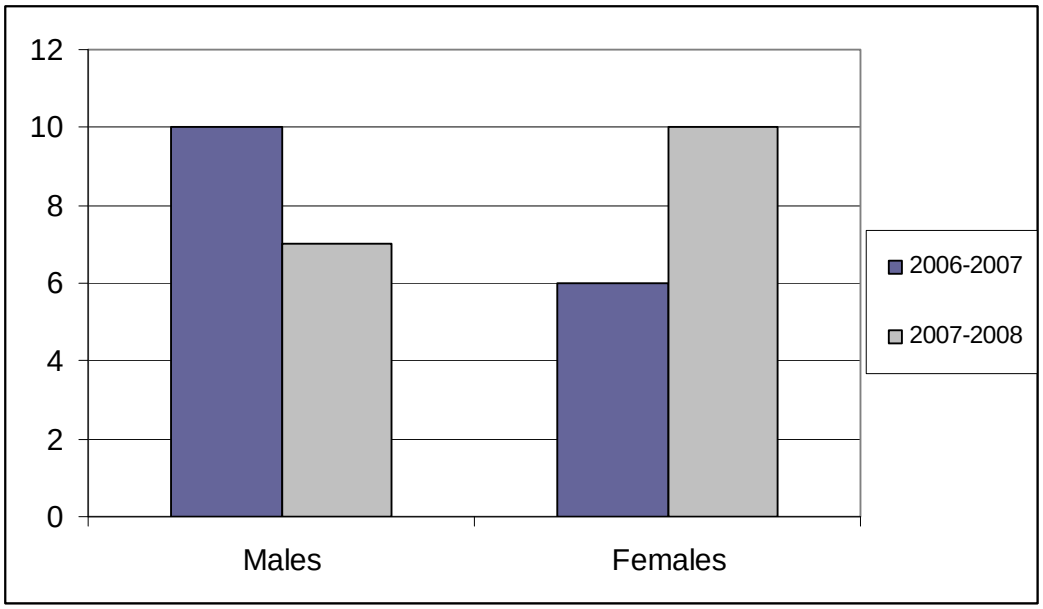

Figure 1: Kindergarten males and females who participated in the research study.

To test the hypothesis created by the researcher, the kindergarten assessment tool for the winter reporting period was used as the pre-test and the assessment tool for the spring reporting period was used as the post-test. Growth was determined for both of the kindergarten classes that participated in the study by tabulating the results. The results were put in a table for the 2006-2007 kindergarten class, which had 16 participants and the 2007-2008 kindergarten class, which had 17 participants. Each student was classified by a letter and number along with their winter pre-test score, their spring post-test score, and their amount of growth over the time of the research study. The minimum growth shown on Table 1 was zero and the maximum growth was 16. The minimum growth shown on Table 2 was four and the maximum growth was 28. This demonstrated there was larger individual growth of a participant in the treatment group (Tables 1 and 2).

Table 1

2006-2007 Sight Word Scores From District Kindergarten Assessment

student #	Winter Scores	Spring Scores	Difference Winter – Spring
x1	13	23	10
x2	12	15	3
x3	23	33	10
x4	8	8	0
x5	19	35	16
x6	23	34	11
x7	21	25	4
x8	25	40	15
x9	25	36	11
x10	15	15	0
x11	25	39	14
x12	19	28	9
x13	25	40	15
x14	19	34	15
x15	11	18	7
x16	4	13	9

There were 16 student participants in the control group during the 2006-2007 school year. Winter scores ranged from a low of four and a high of 25 out of 25 sight words taught and tested. Spring scores ranged from a low of eight and a high of 40 out of 40 sight words taught and tested. The growth between winter and spring scores was between zero and 16.

Table 2

2007-2008 Sight Word Scores From District Kindergarten Assessment

student #	Winter Scores	Spring Scores	Difference Winter – Spring
y1	21	40	19
y2	10	38	28
y3	19	36	17
y4	17	38	21
y5	23	36	13
y6	22	36	14
y7	16	37	21
y8	3	7	4
y9	22	39	17
y10	17	31	14
y11	16	27	11
y12	6	25	19
y13	19	36	17
y14	19	28	9
y15	13	29	16
y16	6	28	22
y17	16	40	24

There were 17 student participants in the treatment group during the 2007-2008 school year. Winter scores ranged from a low of three and a high of 23 out of 25 sight words taught and tested. Spring scores ranged from a low of seven and a high of 40 out of 40 sight words taught and tested. The growth between winter and spring scores was between four and 28.

After tabulating the scores for both classes based on the kindergarten winter and spring report card assessments, the growth was entered into Statpak, a statistical software program. The researcher ran a t-test for independent samples to find the t-value. The t-test calculated that the t-value was 3.35 and the degrees of freedom were 29 (Table 3).

Table 3

Statpak t-Test for Independent Samples

Statistic	Values	Group X	Group Y
No. of Scores in Group X	17	19	10
Sum of Scores in Group X	286.0000	28	3
Mean of Group X	16.82	17	10
Sum of Squared Scores in Group X	5350.00	21	0
SS of Group X	538.47	13	16
No. of Scores in Group Y	14	14	11
Sum of Scores in Group Y	149.0000	21	4
Mean of Group Y	10.64	4	15
Sum of Squared Scores in Group Y	1805.00	17	11
SS of Group Y	219.21	14	0
t- Value	3.35	11	14
Degrees of Freedom	29	19	9
		17	15
		9	15
		16	7
		22	9
		24	

The study took place during the 2006-2007 and 2007-2008 school year. There were 17 participants in the treatment group and 16 participants in the control group. The mean of group X was 16.82 and the mean of group Y was 10.64. The t-value was 3.35 and the degrees of freedom were 29.

Due to the fact the t-score was 3.35 and the degrees of freedom was calculated as 29, the level of significance for the research conducted on two half-day kindergarten classes sight word scores were put into a table for .01, .05, and .001. (Table 4).

Table 4

Distribution of t with 29 degrees of freedom showing for significance

	p		
df	.05	.01	.001
29	2.04	2.75	3.65
	3.35	3.35	3.35

The probability for .05 was 2.04, for .01 it was 2.75, and for .001 it was 3.65. The degrees of freedom were 29. The numbers were compared using the t-score of 3.35. Significance was found at .05, .01, but not at .001 because 3.65 was a larger number than 3.35.

Findings

For significance to be shown in the area of sight word scores the t- score for .05 would have needed to be greater than 2.04 and for .01 the t-score would have needed to be greater than 2.75 and for .001 it would have needed to be greater than 3.65. Due to this data, the researcher found significance at .05, and .01, but not at .001. The null hypothesis was rejected at .05, and .01, but was accepted at .001. The hypothesis was supported at .05, and .01, but was not supported at .001 (Table 5).

Table 5

Level of acceptance and support for the null hypothesis and hypothesis

	.01	.05	.001
Null Hypothesis	Reject	Reject	Accept
Hypothesis	Support	Support	No Support

The null hypothesis was rejected at .01 and .05, but accepted at .001. The hypothesis was supported at .01, .05, but was not supported at .001.

Discussion

Overall, the researcher felt the results of the study were similar to her expectations. The researcher agreed with ideals from Piaget in that it was important to take into account cognitive development in regards to reading. This was often apparent in the researcher's kindergarten classroom. The state requirements often were challenging to the development of the children. Although most children were ready for first grade by the end of the kindergarten year, some were not developmentally ready to read and nothing the researcher could have done would have made a difference.

The researcher also saw the importance of taking into account an individuals learning style and the multiple intelligences to get children interested and motivated to learn. A kinesthetic approach not only was a learning style, but also one of the intelligences. The kinesthetic approach was sometimes overlooked by the researcher but a great developmental tool for her students. Students appeared more enthusiastic and willing to participate more in activities involving the kinesthetic approach.

Summary

Since the researcher wanted to determine whether using a kinesthetic approach to teaching sight words would significantly change sight word scores, she used her 2006-2007 class as her control group and her 2007-2008 class as her

treatment group. The researcher used her half day kindergarten student's assessment scores from both winter and spring trimester. The spring assessment was administered three months after the winter assessment. After growth was calculated by subtracting spring scores from winter scores, the researcher then entered the growth scores into Statpak and determined if there was significance to the findings. The researcher found significance at .05 and .01. The null hypothesis was accepted at .001, and the researcher's hypothesis was supported at .05 and .01. These results determined there was significant growth throughout the time period of the study.

CHAPTER 5

Summary, Conclusions and Recommendations

Introduction

Due to the increased academic expectations brought about by No Child Left Behind (NCLB), and 53% of the researcher's half day kindergarten students not meeting the standards that were set forth by Parkside Elementary School in Tenino, Washington, the researcher studied the impact of a kinesthetic approach to learning sight words versus not using a kinesthetic approach.

Summary

The researcher wanted to increase sight word scores for her half day kindergarten students. Approximately half of the researcher's students were not meeting the standard of reading at least 32 of the 40 introduced sight words by the end of spring trimester. The researcher wanted to figure out if changes in the delivery of the sight words would have made a difference. It was because of this, the researcher was determined to look deeper into the benefits of students learning sight words through a kinesthetic approach.

One of the important facets of the project was to research literature to gain more knowledge about the topic. The researcher determined language development, differentiated instruction, and cognitive development were important areas of study and researched more about these areas.

The researcher learned about the stages of language development including and what was the importance of each stage. Prelinguistic communication was one of the stages of language development. Essentially, prelinguistic communication was the stage before children were able to talk. Children began with receptive language, then children would initiate communication, and finally children learned to take turns while communicating their wants and needs. Part of language development was language acquisition, or acquiring language. For success with sight words language development would have been essential.

Differentiated instruction was an important area that was looked at too. Since educator's were required to teach all children, educator's needed to know how to differentiate instruction to meet the needs of each student. Student's needed to be able to make sense of the world around them. It was important for educator's to know about modalities of learning and knowledge of multiple intelligences.

Multiple intelligences was a way of explaining the strengths of individuals and the ways individuals learned best. Multiple intelligences could have been used in the classroom to guide the creation of activities and lessons in a way that would have drawn interest from students.

Finally, cognitive development was an area of interest to the researcher. The researcher read about Piaget and his theories of cognitive development, which started with sensorimotor. Sensorimotor incorporated the senses of sight, sound, taste, touch, and smell. This stage started at infancy. Children also developed schemata, which was organizing ideas in a way that made sense to them.

It was determined by the researcher that the winter and spring report card assessments would be used for the study. The researcher used the sight word scores on each of the assessments for the 2006-2007 class and the 2007-2008 class. The class of 2006-2007 was used as the control group because they did not get the use of the kinesthetic approach as an intervention to learning sight words. The class of 2007-2008 was the treatment group. They were given several hands on activities weekly that reinforced their weekly sight words starting at the beginning of spring trimester. The scores were analyzed and growth was determined.

Conclusions

The researcher concluded that a kinesthetic approach to teaching sight words did have significance in increasing the retention of the 40 sight words that were taught throughout the kindergarten year. Larger gains were made by the treatment group than was made by the control group. Although there was still a

large portion of the class not meeting the standard for sight words as determined by Parkside Elementary School scoring system, children were closer than before to meeting the standard.

Recommendations

It is the recommendation of the researcher to incorporate a kinesthetic approach to learning in all subject areas, not just language. The period of the study was short due to time constraints, therefore this modality of teaching and learning should be started in September and continued until school ends in June. Any increase in scores is a positive change so even though the hypothesis was only supported at two of the three levels, the researcher believes the methods used in the study increased the participants academic success pertaining to sight word retention.

There was another circumstance the researcher believes had a positive impact on the student scores as well. This year the researcher had a paraeducator that worked with students who struggled the most with sight words. The paraeducator pulled the students out for 20 minutes three days a week for a total of an hour a week. This started at approximately the same time the study started. The paraeducator used kinesthetic activities with the children as well, but the students had an increased amount of exposure to the words. Therefore, the researcher also recommends extra assistance in the classroom be utilized in small

group or individual instruction for those students who are struggling in any specific subject areas.

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