SPELLING STRATEGIES FOR LONG-TERM
RETENTION IN FIRST GRADERS

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Abstract

Spelling Strategies for Long-Term Retention in First Graders

First grade is typically when many students begin the chore of studying for weekly spelling tests. Many parents and teachers have students write the words a number of times to aid in memorization for the upcoming post-test. Teachers hope that the weekly spelling word list will transfer over into the students' writing as they repeatedly write the words. This practice can be boring for the students though successful for the post-test. So often the weekly spelling words are forgotten after the post-test. This research project looks at the long-term effectiveness of learning weekly spelling words by the traditional method of rote or through engaging the students in spelling activities (games, puzzles, oral practice, etc.)

In examining the data, there was not a significant difference between students learning spelling words by rote or by spelling activities for long-term retention. However, the students preferred doing different spelling activities over writing spelling words three times. The students were more likely to be excited for their spelling lessons when there was spelling activities which created a greater chance for exposure to the written word. Creating a classroom with many opportunities to experience how words are spelled creates long-term success in spelling.

Table of Contents

List of Tables

Introduction

Olivia is a typical, hard working first grader who struggles in the subject of spelling. Her school is extremely strong academically which means Olivia has to work at home to keep up with her studies. Every Monday at school, Olivia is given a new group of spelling words to master and prepare to be tested on by Friday. Her spelling words are typically formed around phonics concepts and high frequency words. She dreads the weekly spelling test. In the classroom, she is required to write the words a number of times on a piece of paper. Spending the week working on the words helps her to be successful on the test. However, later on in writing assignments and daily work, she does not always remember the correct spelling of previously tested words. This results in low grades on writing assignments, even though her actual spelling grade, demonstrated on her weekly tests, is quite high. Olivia's teacher is concerned with her ability to retain previously tested spelling words.

A teacher's goal for his/her own spelling program is to equip his/her students to not only master the spelling words given on a weekly test but also to transfer the words to students' daily writing. Some students can easily memorize the words for a weekly spelling test, but are not able to transfer them to their other assignments. For many years the trend in memorizing spelling words was to write the words three-five times on a sheet of paper. This repetitive action's purpose has been commonly believed to cement the words into the student's memory for the spelling test and for later recall. Unfortunately, this activity can be monotonous for many students and becomes an exercise that the students tend to avoid. Thus the spelling words for the week are not learned. More recently, educators are using spelling programs that add spelling word specific activities to engage students in the discovery of their weekly words. Students are able to perform spelling activities on the computer, play games, and do activities on paper, with the goal of making spelling enjoyable and engaging. These

activities can be done everyday at home or at school, exposing the child to the words a greater number of times and hopefully aiding in long-term retention.

A typical first-grader is exposed to phonics and spelling rules by his/her teacher. A student's success in spelling depends on an understanding of phonics, the rules of spelling, the context of new words, and performing specific spelling activities to achieve long-term spelling word retention. The reinforcement of the spelling words outside of phonics teaching and spelling rules is crucial. A teacher must determine what activities will support long-term retention. Spelling words will have long-term retention if the student learns them through spelling activities rather than exclusively through written practice because the spelling words can be memorized in context.

Literature Review

Educators are not in agreement regarding the most effective teaching strategy for long-term spelling retention (Fenton, Stoffet, & Straugh, 2003). Whole-language-based teachers deem that spelling is remembered through exposure of the written word (Leak, 1995). Strictly phonics-based teachers stress learning spelling words by gaining knowledge of spelling and phonetic rules (Yellin, 1986). These are the two extremes on the spelling instruction continuum. The research on spelling shows many effective learning strategies for teaching students to learn how to spell and retain their spelling words. However the research is not clear regarding which method is most successful for all students to achieve long-term retention. Long-term retention in spelling for the purpose of effective writing is the goal for every educator. Students' weekly usage of the word helps create a solid spelling program. "Since the purpose for learning to spell is to be able to write fluently and correctly, much practice in application-writing is an essential part of any good spelling program" (Hillerich, 1982, p. 616). Students become interested in their ability to spell as they progress in writing.

Invented Spelling

The most liberal strategy in spelling instruction is used primarily by teachers who allow students to utilize invented spelling. Invented spelling is encouraged where students write words as best as they can. "As children become fluent in written language, encourage them to capture their thoughts first and worry about correctness afterward" (Sipe, 1994, p. 3). Invented spelling gives the young students' confidence in their writing ability. Learners are not corrected for spelling mistakes, as writing should come naturally (Leak, 1999). Weekly spelling drills do not exist in invented spelling. Writing and spelling emerge as part of a natural developmental process which can not be rushed or long term retention is not achieved (Palehonki, 1995). The students are able to write and express ideas without being limited to words they have mastered. A student can accept that their spelling is only a possible spelling and may not be the only spelling of the word. "By examining children's conscious strategies, the teacher will become aware of some of the preconceptions individual children have about the spelling process and spelling rules" (Leak, 1995, p. 46). The teacher is able to see which spelling or phonetic rules the child has not mastered. The teacher can then tailor phonetic lessons toward the individual student.

> This is important when assuring parents that we as educators are not neglecting their children's spelling skills by encouraging invented spelling, but are in fact helping their children to gain a better understanding of the spelling system by allowing them to construct it for themselves, instead of learning about it by rote memorization. (Leak, 1995, p. 47)

David Yellin determines that "the research clearly supports the use of invented spelling as an initial stage in the developmental process of learning to read and write" (1986, p. 10). The spelling process is ongoing and emerges as the child goes through his/her own cognitive developmental process.

Visual Imagery

Spelling imagery, such as a word wall, is a heavily relied upon strategy employed by educators who believe that spelling success comes from a strong visual memory. Students tend to enjoy the visual imagery strategy more than other strategies because they can connect a word with a picture (Kiesser, 2000). When the speller needs to spell a word, he/she visualizes the picture and how the word looks inside the picture. Skills learned during reading instruction can transfer to writing because the student is able to visualize how the word looks on the page of a book (Kiesser, 2000). Both high and low performing spelling students are able to benefit from visual imagery. Visual imagery is similar to inventive spelling in that students are encouraged to attempt to spell correctly. "These findings support the theory of encouraging inventive spelling and allowing the students to discover spelling patterns as they gain a greater understanding of letters and spelling rules making spelling more developmentally appropriate" (Kiesser, 2000, p. 44). Kiesser argues that visual imagery is mostly beneficial with high frequency words. Words that follow spelling and phonemic patterns should be mastered by learning the appropriate specific rules. A strong visual memory is a good predictor of high achieving spellers (Sipe, 1994). Teachers who insist on the correct spelling of a word allow the student to imprint a visual memory of the word. "Too often words that were spelled correctly on Friday's test show up misspelled on Monday's writing assignment. Students need repeated practice to assure long-term retention and this practice must be in the context of their own writing" (Sipe, 1994, p. 3). For students who struggle with visual memory, they can use strategies such as phonemic awareness, studying word families, word wall, mnemonic devices, and tactile methods. Most of these strategies help learners in the lower grades. As a child's vocabulary grows, phonemic structures no longer help, so a child must have high frequency words stored in their memories to aid in writing (Sipe, 1994). This can happen by covering a wall in the classroom with

word families. A word wall gives the student exposure to the language and the correct spellings of words.

Jeanne Bleck, Barb Crawford, Idelle Feldman, and Traci Rayl (2000), discovered that a print-rich environment greatly enhanced the students' success in spelling. They created a print rich environment by constructing a word wall in a classroom that displayed common word families used in writing. The word wall allowed the students to see word families and the initial phonemes of words. Students were able to make connections between the word wall and other unfamiliar words. Invented spelling was encouraged in this study because the researchers felt the students were able to correctly decode the beginning and endings of words (2000). Students were encouraged to keep word lists that they knew or had newly discovered how to spell. They also had spelling buddies to aid in writing words correctly. "Once students become aware of words and know where to find the word, then only can proper usage and eventual spelling of the word for young spellers take place" (Bleck et al., 2000, p. 48). Daily writing in journals and creative writing in writers' workshop allowed the students to continually practice the spelling of various words.

Spelling Within A Context

The next highly researched spelling strategy is teaching students spelling words within a context. A context in spelling gives students patterns to identify between words, sounds and blends. Teaching a word in context can also include learning words within a story, or within a group of similar word meanings. Anne Palehonki (1995) looked at teaching words within and without a context. The whole-part-whole approach taught students words in context (whole), then with a spelling pattern (part) followed by a differing type of context (whole). She found that words taught using a whole-part-whole approach had higher spelling achievement than those students who just memorized the word using phonemic strategies (1995). The whole-part-whole technique leads to greater gains in spelling (1995). Spelling is meaningful and relevant to the student only with direct instruction. Students should not be

expected to spell words that they are not able to read or understand their meaning. The whole-part-whole instruction begins when the student is able to read the word and then extracts the meaning. This is an intentional step and leads to greater understanding of word context. Then the student will be able to learn to spell the new word based on understanding the word's value. Students need to see their words in a variety of contexts and understand the phonetic rules that apply to their word (Palehonki, 1995). "Explicit teaching in the area of spelling should not involve teaching meaningless sight words that won't be retained by the student. It should involve a combination of direct instruction and authentic writing activities" (Palehonki, 1995, p. 23). Learning words in context alone or with isolated spelling lists will not produce success in spelling.

Rote Writing

If spelling needs to be taught within a context, then the words need to be developmentally appropriate. Spelling is a developmental process according to Christina Medrano and Kathleen Zych (1998). Meaningless sight words do not allow for the student to gain responsibility for their learning (Palehonki, 1995). Rote writing allows for visual memory and the practice of writing the word correctly unfortunately words are learned in isolation (1995). "Thus writing each new word correctly a certain number of times correctly must have some merit. Might it be a learning style for selected pupils?" (Ediger, 1999, p. 2). Rote learning is only a mediocre way to teach spelling. It has been a satisfactory practice that has been replaced by new and creative strategies tailored to fit the needs of each individual child. These new strategies can identify spelling patterns, which is lacking in rote writing.

> Spelling instruction from post-colonial America into the 20th century reveals a preoccupation with the bottom up philosophy, which emphasized rules, word lists, and rote memorization. By the 1950's linguists contended that the majority of words used in writing are regular and consistent in their spelling patterns. (Yellin, 1986, p. 1)

The practice of rote learning can be mundane. The love of learning how to spell comes through enjoying the process of learning (Ediger, 1999). Spelling games, puzzles, and other activities will engage the student and encourage them to try new learning experiences. "How we teach children is more important than what we teach them, exactly, because the strategies we teach them by, if the methods are valuable, useful, and engaging tools, can, quite possibly, remain with them forever" (Angelis, 2000, p. 15).

Marlow Ediger (1999) argues that some students might enjoy rote writing and if that is so, then they would also benefit from incorporating alternative strategies within this method. Rote writing needs to be paired with other strategies to be successful. Used alone, it will not be effective in long-term retention due to lack of context (1999). "While the traditional method of writing each word ten times has no proven effects, using spelling words in original writing correlates to a high degree of retention" (Sipe, 994, p. 3). High frequency words can be learned by repeated exposure since they do not follow phonemic rules. However, they do not need to be learned exclusively through rote writing.

> The old-school rote learning teaching methods of yesteryear may have gotten the job done, so to speak and they may continue to serve a satisfactory purpose in classrooms even today: however, our children, in this day and age, deserve better. (Angelis, 2000, p. 14)

Repeated exposure can take place as the student practices their writing skills. Successful spelling employs effective strategies that go along with each child's learning style.

Multi-Sensory Approach

Kathleen Dubois, Kristie Erickson, and Monica Jacobs (2007), in their research, looked at a multi-sensory approach to teaching spelling. These researchers argue that by allowing the students to engage in a variety of learning activities centered on their spelling words, the students find spelling more engaging and fun (2007). Spelling games, puzzles, use of Smart Board, etc. allows the students to see the words in a variety of context and importance. "Lack of direct spelling instruction, spelling taught in isolation of other content

areas, and the reliance of one form of spelling instruction has caused poor performance of student spelling across the curriculum" (Dubois et al., 2007, p. i). Students need to see the relevance of their spelling words and be engaged in their weekly spelling list. The students who were the most successful in this study had the opportunity to pick their own spelling activity. Having a variety of spelling activities allows for the student to engage in an activity that meets his or her own learning style. Dubois, Erickson, and Jacob's research also stressed the importance of a spelling program that incorporates spelling with reading and writing. "We believe that the instructional adaptations that were the most valuable included use of a classroom word wall, teaching student self correcting techniques, and daily spelling instruction using a variety of multisensory activities" (2007, p. 46). Students were able to enjoy the writing process and they found meaning in the new concepts they were learning. "By implementing the interventions…spelling became more fun and engaging for the teachers and students" (2007, p. 50).

Spelling Tests

Except for whole-language educators who solely rely on invented spelling, most teachers do follow a basic spelling format. The typical standard-based test system is structured as a pre-test, intervention, followed by a post-test. Robert L. Hillerich determines that a pre-test is vital to the spelling program. "…automaticity is accomplished through administration of a pre-test-before students see the words-followed by immediate self correction by those students" (1982, p. 616). After a pre-test, the misspelled words are identified and can be learned through visual memory. High frequency words need to become automatic for students to become successful writers and should be on a spelling test since they can not be mastered through phonemic strategies (1982). Spelling lists should mainly focus around high frequency words because the students will need to master these words before they are able to write. The post-test is a good motivator for students to learn a specific set of words it also allows for the teacher to assess formatively and adjust her instruction. "In

8

the case of spelling as in any area, assessment can be a useful tool in instructional improvement" (Fenton, Stofflet, & Straugh, 2003, p. 7). The post-test is one tool for spelling assessment along with fluency in writing.

Long-Term Retention

Every spelling program needs to also be evaluated on students' long-term retention of spelling words. The research prepared by Johnson and Marlow (1996) showed that most spelling programs place little or no emphasis on previously learned spelling words. Words are taught in isolation and are not integrated into other subjects or context. Unfortunately, high frequency words that students repeatedly need to know in order to write successfully are not continuously reviewed (1996). Students in the Johnson and Marlow study made a personal dictionary filled with high frequency words they were unsuccessfully spelling. The researchers determined that the repetitive use of the dictionary would lead to mastery of the spelling words (1996). Each dictionary was personalized so the students were able to work on their own words. "With the students continually focusing on their spelling and using the words from their dictionaries, the repetitive use of these words enabled them to better retain the correct spelling (sic)" (1996, p. 44). Individualizing a program can include use of a personal student dictionary of frequently used words. "Emphasizing words that naturally appear in a student's writing has been shown by research to be more easily retained and therefore transferred" (Johnson & Marlow, 1999, p. 78). This practice (intervention) helped the students transfer their weekly spelling words to their daily writing. "Through the use of these interventions students were becoming more aware of the fact that one must be able to spell correctly in order to communicate effectively"(1996, p. 45). Long-term retention of spelling words results only when students desire success in their writing and the words they want to master. Long-term retention is individual for every student. "…Interventions helped students concentrate on words they wanted to learn how to spell, thus individualizing their own spelling program" (Dvorak, Ingersol, Kastle, Mullins, & Rafter, 1999, p. 77).

9

Summary

There is not a single strategy that is most effective for all students. A teacher must employ various methods used throughout the grade level curriculum.

> In order for the students to develop a spelling consciousness, teachers must provide direct instruction, model effective strategies towards the students' developmental level, create an environment that is print-rich and enable students to experiment with language by being active participants and risk takers. (Medrano & Zych, p. 45)

An educator needs to incorporate direct instruction and a spelling curriculum that integrates reading and writing to allow for greater success of students (Hillerich, 1982). The curriculum integration ensures transfer of the student's spelling knowledge. Spelling success decreased in students who only received formal instruction unrelated to reading and writing.

> Spelling instruction has come a long way since the days of extensive drill on word lists in isolation. No longer a separate entity in itself, spelling is today recognized as an integral part of the literacy process and should be taught in conjunction with real writing and reading lessons. (Yellin, 1986. p.11)

The research is unclear on what specific practice determines long-term retention of spelling words. Many educators have their own theory on how to teach a student a list of words for the weekly spelling test, but they do not stress the importance of long-term retention. Long-term retention enables the student to be a strong reader and writer.

Research Questions

After reviewing the literature on spelling strategies, I am still left with several questions. The primary question is will a student completing spelling activities increase long-term retention of spelling words more so than through rote writing? Secondary questions include: do high achieving spellers excel in spelling by using a particular strategy? How will the process of using spelling in a context change students' attitudes towards studying spelling words? Will learners achieve greater success with a spelling activity they enjoy?

Methodology

Method and Rationale

To answer the research questions regarding spelling retention, I employed both a quantitative and a qualitative methodology. A quantitative methodology enables the hypothesis to be tested and generalized to a greater population. The hypothesis has been evaluated by administering a series of tests to first graders. The variables in this study were controlled as much as possible, since the sample came from one first-grade class that received the same amount of classroom instruction of spelling and phonics rules. The students were administered a post-test and long-term retention test by the researcher. With a quantitative approach, the results of each post-test and long-term retention test was graded and recorded. The improvement in spelling of each word in the post-test and long-term retention test was noted with regards to how the spelling word was learned. A correlation was made between words learned in rote and words learned through three spelling activities in long term-retention.

A qualitative case study of the first graders is appropriate for the collection of a student's attitudes towards spelling. Qualitative case studies allow the researcher to observe the subjects and make connections concerning what is being seen. The students' attitudes toward the specific spelling strategy are important to understand because they will be more likely to continue to engage in the strategies they find most enjoyable. A survey was taken after each post-test asking the students which spelling strategy they most enjoyed. The self assessment data gathered here will help educators and parents employ spelling activities that students will enjoy. For spelling success the students need to establish a routine for studying their spelling words that is pleasing and manageable for the learner.

Sample

The students involved in this study attend a first grade class in Everett, Washington. These students are mainly comprised of middle class, educated families who are highly involved in their child's academic careers. These 14 first graders are in a class led by a well-seasoned teacher, and a part-time teacher's aid. Therefore, these first graders receive a great amount of individual attention. Phonics and spelling rules are strongly emphasized in this class. Supportive measures are used in the classroom for spelling such as a word wall, personal student made dictionaries, and writing opportunities. Many of these first graders are already reading a grade level above their actual grade in school.

The data collected from these students showed which strategy was most successful for later recall of an already learned spelling word and the strategy the students preferred. Data was collected after a spelling test was rendered. The survey question on the post-test asked which spelling strategy the student favored. The data collected from the post-test and long-term retention tests was correlated with the spelling strategy used in the learning of the word. The words retained in the long-term have been calculated in regards to the hypothesis.

Instrumentation and Data Collection

Data was collected at various times during a five week time period. The data included post-test samples, long-term retention test samples, and students' attitudes towards the spelling activities. There were two different phases of this experiment. The first phase lasted three weeks and included the spelling post-test. There three different lists of spelling words centered on common phonic patterns and high frequency words. The spelling list was divided into two sections: words that were learned through the traditional rote writing method and words that were learned through at least three different spelling activities. All study of spelling words was done in the classroom or as assigned homework in keeping with the pre-determined studying method.

The words that were assigned to learn as rote writing required the students to write their words three times on a piece of paper. The spelling activities included oral and written spelling games, puzzles, reading words in context, letter cubes, tracing letters using various textures, word families, and air writing.

The post-test showed what words were mastered during the week with the various interventions. Each word successfully written on the post-test was added to the students' Word Bank. A student's Word Bank is a list of words that the respective student has successfully written on a post-test. Only the words in the Word Bank are compared on the long-term retention test.

During the week of the post-test, students' attitudes towards the different methods of learning spelling words, was noted. At the end of the post-test, the students were asked what method they preferred, rote writing or the spelling activities. The questions on the tests were:

What did you like best?

1. Writing words three times

2. Doing spelling activities

To protect the identity of the subjects, the students were randomly assigned a number from 1-14. After each test and survey, the scores were recorded according to the students' assigned number.

The second phase of the study began two weeks after the post-test was administered. Words previously tested were once again tested to see what words had long-term retention. The first week in this phase involved the first spelling list being retested. Re-examination continued, for the next two weeks, retesting the previously learned words in spelling lists two and three. Each of the three tests were graded and recorded. Every word was compared to

the same word that was successfully or unsuccessfully spelled on the post-test. A correlation has been made between how the word was learned and if it was indeed retained after two weeks.

Analysis and Validity

Data has been gathered from two different types of tests and from the students' attitudes towards the two differing spelling methods. The results have been compared to the post-test and long-term retention test.

The first step in analyzing the data was to look at the achievement of the first graders after they have taken the post-test. The post-test showed the words that the students retained during the week of instruction. Since the spelling list was divided in half, the retention of the spelling words in regards to the various strategies has been documented. The words mastered by each individual student made up their own word bank.

Approximately two weeks later, the long-term retention test was given to the students. The tests showed if the students truly did retain the spelling words. The words mastered have been further analyzed by looking at how the words were learned. The data shows the number of words spelled correctly where rote learning was the method for mastery and the number of words spelled correctly where spelling activities was the method. The hypothesis has been compared to the results.

The final inquiry was the students' attitudes regarding how they learned their spelling words. The data gathered was in a form of a tally. A tally mark was given for every strategy the student votes for. The marks were totaled and the results reported.

The various variables that can influence a child's success in spelling were controlled within the classroom. All of the students were a part of the same classroom, exposed to the same phonics, language, and writing instruction. The reading levels within the class do vary. Although time allotted for reading instruction for each level is consistently equal between the

groups. Every learner was exposed to a word wall, and learning a variety of words using context in reading text.

I already have a pre-existing relationship with the majority of the students in the specific class being observed which could present a bias. I have been their librarian for kindergarten and half of first grade. I am already familiar with the students who are strong readers. However, I do not know any specifics on spelling achievement of any of the students.

Data

The data consists of two tables (Appendix A and B) that are divided up by words learned in rote and words learned by activities, and a survey that was taken orally at the end of every post-test. Students with previously high spelling scores were noted and observed as they chose spelling activities during free choice time.

The data tables show the words used in the post-tests and long term retention tests. The majority of the words tested followed phonic patterns that were being taught in the classroom. The remaining words were sight words that do not follow any phonetic rule but are commonly seen and used in language and reading.

After the students completed the post-test, the tests were corrected. Words that were spelled correctly were noted in each student's Word Bank. A Word Bank was created to show the words each student had accurately spelled on each of the post-tests. Spelling words in the Word Bank became the words used to compare with the words spelled in the long-term retention test.

The tables shown in Appendix A & B display the words that were spelled accurately on the post-test and misspelled on the long-term retention test (appears as an X), words spelled correctly on the post-test and long-term retention test (appears as a smiley face), and words misspelled on the post-test (appears as N/A).

Words that were misspelled on the post-test did not become a part of the word bank and were not analyzed for this research study.

The data can be summarized as followed:

Table 1

Accuracy rate of spelling words learned by rote and through spelling activities.

Spelling Method	Post-Test	Long-Term Retention Test
Rote	98%	81%
Activity	97%	85%

Spelling in Context Example

Each spelling lesson had a paragraph written using the spelling words and the students' names. The students circled the spelling words. This is an example of a paragraph that I created using the names of the students and the weekly spelling words:

Daylee looks for Elyssa and Mikayla in pink in a game of hide and seek. Caitlin sang to Rachel and Nicole on the bars. Gabe and Joshua ran away and got a drink. Brett was strong and cut some string. Colby decided he was king. Hunter had to thank Bjorn and Matthew for the ball. Lydia sung to Max and Brian while they were playing tag. Maija pretended that she worked at a bank. Sierra did not think that Ian was in the trunk of a car. Tyler pushed a horn to hear a honk. Dascha says "I'm glad I get to be at recess."

Students enjoyed this activity. They practiced reading the words and finding the words in the sentences. The students would laugh at the silliness of the paragraph.

High Spelling Achievers Performance on Long-Term Retention Test

High Achieving students in spelling were identified prior to this study were observed, and noted in the raw data. These students not only were successful in the post-test, but

achieved higher scores than their peers in the long-term retention test. Only one student, who typically received a perfect post-test score, struggled with the long-term retention test.

Survey

After each post-test the students were asked a survey question regarding what spelling strategy they preferred. The students unanimously preferred engaging in spelling activities to learn spelling words rather than write spelling words three times. The preference rate was 100% after each post-test.

Analysis

The data shows that the majority of the students had a high percentage of accuracy on their post-tests. This created a large Word Bank for each of the students. The Word Bank and the long-term retention results were compared. There was no real difference in words learned by rote or with spelling activities for the long-term retention test. The accuracy rate was only a 4% difference. This slight difference can not fully support my hypothesis.

From the data I conclude that the great success in the post-test came from the recent exposure of the words from the week of study rather than through any particular spelling activity. The students spent time during the week learning the words either by rote, or through activities and there was only a 1% difference in the rate of accuracy. These activities familiarized the students with the correct spelling of the words and made the words easy for recall.

The class used in this study, had a 15 minute spelling lesson four days a week. The students went into small groups for reading and other language activities for an additional hour long segment. The students had a strong foundation in phonics and spelling rules which helped them to spell correctly on both the post-tests and the long-term retention tests. Sight words shown on the word wall, were spelled accurately 98% on the long-term retention test.

Students were exposed to these sight words daily and remembered how to spell the words due to the experience.

High-achieving spellers gravitated to activities that encouraged spelling. Activities such as word searches and spelling puzzles were chosen during free choice time by these students. Students engaged in spelling activities continually developed their knowledge and they became stronger at spelling. However, students who did not feel successful in spelling made different selections during free choice time. Exposure to spelling words can benefit the students' retention.

> The quality of the visual exposure to the word must be considered and important variable in the retention process. A child who looks at some word with interest, or for some purpose, may experience a qualitatively different exposure to a word than a child who is uninterested. The former child may be able to recognize, or recall the word after only one observation, but the latter child may need many exposures (Fehring and Victoria, 1983, p. 43)

Thus, repeated exposure to practicing spelling words can increase the students' success.

High-achieving spellers are also successful because they exposed themselves to the written word frequently. These students enjoyed reading and writing opportunities in the classroom. They preferred different spelling activities and looked for ways to challenge themselves. For example, the students would come up with their own silly sentence using the week's spelling words.

The quantitative data on the long-term retention test shows only a slight improvement of word mastery from spelling words learned from spelling activities. It is not clear from the data which spelling activity is more beneficial than others. Students may prefer one activity over another which would allow for greater success on an individual basis.

The qualitative survey shows that every student preferred learning their spelling words by doing a variety of activities. These activities were "less boring" and "did not make their hands hurt" according to one of the students. Teachers want their students to be life-long learners who enjoy the process of learning. In this study, all students took pleasure in

the spelling games, puzzles and other activities for learning their spelling words. These activities created learning opportunities that held the students' interest and allowed for effective learning to take place.

Implications

There was not a significant improvement in words learned by rote or with activities in the long-term retention tests. Without a significant difference, it does not become necessary for teachers to only emphasize spelling activities in the classroom. Educators instead, should expose their students to activities which would also include writing the words by rote. Exposure to words, especially for the weekly spelling test increases the accuracy in the test scores as seen in Tables 1, 2, and 3.

Spelling lessons do not need to be boring and tedious for the students. An educator, with little effort, can create learning opportunities through reading, games, and center times to engage their students in the weekly spelling list. At home, the parents can support the study by having their child write the words in rote.

Teachers can use props to encourage practicing spelling for long-term retention. Whisper Phones (curved PVC pipe) can be used during the test, for students to spell the words out loud. This is very beneficial for students that learn orally. Students having a personal dictionary of words that they have written and use frequently support mastery. A student has to look up a word by thinking of what letter the word starts with. This creates ownership of their spelling and they rely on themselves to accurately spell words. Word walls encourage students to look for words they need to spell and to group words according to their beginning sounds.

Early spelling success can emerge through students own invented spelling and use of a student dictionary. Students should also be encouraged to use the classroom word wall

during writing. Exposure to the written word will build success in the students and confidence.

Keeping students engaged in what they are learning is important. This study showed that students were extremely engaged in learning their spelling words through activities than when writing the words in rote. By engaging students, the students were able to look forward to spelling lessons and not dread the learning tasks. The students would ask to play various spelling games and look forward to being challenged by the new words for the week. I believe the students being exposed to the spelling words through various means, imprints the words in their minds. The students are actively working with the words and this connects to learners who are visual, auditory, and kinesthetic.

A teacher providing opportunities for students to learn spelling words through various activities, allows the teacher to be able to formative assess the students. Writing words in rote is a process where the students copy a word. There is no formative assessment during this practice. However, through games, puzzles, and writing a teacher can continually assess what words the students may need extra instruction for mastery.

CONCLUSION

This action research project looked at two different methods of teaching and learning a spelling list for first graders to maximize long-term retention. Spelling is a foundational skill that will benefit the students in their writing and reading abilities. It is important for teachers to understand the most effective ways to teach spelling for long-term retention. Mastery of a word only for a post-test is not true success. A word needs to become part of the students' Word Bank so the children can use it in their writing. It was my assumption that a student learning spelling words through various spelling activities will have greater long-term retention of the words than words learned by rote. I believed this because spelling activities are more engaging for the students and allow words to be learned in context. This

research project showed that there is no significant difference in long-term spelling scores with words written in rote or learned through spelling activities. The research did support that students prefer learning their weekly spelling words through activities. This project is valuable because long term retention of spelling words will increase the student's success in all subjects at school.

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Appendix A

Table 2

Data Table Representing Words Learned Through Spelling Activities

Spelling Word	Student # 1	2	3	4	5	6	7	8	9	10	11	12	13	14
sounded	☺	☺	X	X	n/a	☺	X	☺	X	☺	☺	X	n/a	☺
looked	☺	☺	☺	☺	☺	☺	☺	☺	☺	☺	☺	☺	☺	☺
thanked	☺	☺	☺	☺	☺	☺	☺	☺	☺	☺	☺	X	☺	☺
kicked	☺	☺	☺	☺	☺	☺	☺	☺	☺	☺	☺	☺	☺	n/a
prayed	☺	☺	☺	☺	☺	☺	☺	☺	☺	☺	☺	X	☺	☺
sighed	☺	X	X	X	n/a	☺	☺	☺	☺	X	X	X	n/a	☺
don't	☺	☺	☺	☺	☺	☺	☺	☺	☺	☺	☺	☺	☺	☺
snowed	☺	X	X	X	☺	☺	☺	X	☺	X	X	n/a	☺	☺
hop	☺	☺	☺	☺	☺	☺	☺	☺	☺	☺	☺	☺	☺	☺
skipped	X	☺	☺	X	☺	X	☺	☺	n/a	☺	X	X	X	X
hitting	☺	☺	☺	X	☺	☺	☺	☺	☺	☺	☺	☺	☺	☺
hopped	X	☺	X	☺	☺	☺	X	X	☺	☺	X	X	X	☺
rubs	☺	☺	☺	X	☺	☺	☺	☺	☺	☺	☺	☺	n/a	☺
getting	☺	☺	☺	☺	☺	☺	☺	☺	☺	☺	☺	☺	☺	☺
were	☺	☺	☺	☺	X	☺	☺	☺	☺	☺	☺	☺	☺	☺
hopes	☺	☺	☺	☺	n/a	☺	☺	☺	☺	☺	☺	X	☺	☺
hoped	☺	☺	X	☺	☺	☺	☺	☺	☺	X	☺	☺	☺	☺
like	☺	☺	☺	☺	☺	☺	☺	☺	☺	☺	☺	☺	☺	☺
liking	☺	☺	☺	☺	X	☺	☺	☺	☺	☺	☺	☺	☺	☺
shaking	☺	☺	☺	☺	X	☺	☺	☺	X	☺	☺	☺	☺	☺
smiled	☺	☺	☺	☺	☺	☺	☺	X	☺	☺	☺	X	n/a	☺
hiking	☺	☺	☺	☺	X	☺	☺	☺	☺	☺	☺	X	n/a	☺
been	☺	☺	☺	☺	☺	☺	☺	☺	☺	☺	☺	☺	☺	☺
# incorrectly spelled words on long-term retention test	2	2	5	6	4	1	2	3	2	3	4	9	2	1

☺ : Correctly spelled word in both post-test and long-term retention test

X : Correctly spelled word during post-test, incorrectly spelled word in long-term retention test

n/a : Word spelled incorrectly during post-test not evaluated at the long-term retention test

Table 3

Data Table Representing Words Learned Through Rote

Spelling Word	Student #													
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
wanted	☺	☺	X	☺	☺	☺	☺	☺	☺	☺	☺	☺	☺	X
lifted	☺	X	X	☺	☺	☺	☺	☺	X	X	☺	☺	☺	X
painted	☺	X	n/a	☺	n/a	☺	☺	X	X	☺	X	X	n/a	X
washed	☺	☺	☺	☺	☺	☺	☺	☺	X	☺	☺	☺	☺	☺
played	☺	☺	☺	☺	☺	☺	☺	☺	☺	☺	☺	☺	☺	☺
joined	☺	☺	X	☺	n/a	☺	☺	X	☺	☺	☺	☺	☺	☺
here	☺	☺	☺	☺	☺	☺	☺	☺	☺	☺	☺	☺	☺	☺
hops	☺	X	☺	☺	☺	☺	☺	☺	☺	☺	☺	☺	n/a	☺
rub	☺	☺	☺	X	☺	☺	☺	☺	☺	☺	☺	☺	☺	☺
pinned	X	☺	X	☺	☺	☺	☺	☺	☺	☺	X	X	☺	X
hugged	X	☺	☺	☺	☺	☺	☺	☺	☺	☺	X	X	☺	X
hopping	X	☺	☺	☺	☺	☺	☺	☺	☺	X	X	X	☺	☺
rubbed	X	☺	X	X	☺	☺	X	X	X	☺	X	X	X	X
rubbing	☺	☺	☺	X	☺	☺	n/a	☺	☺	X	X	X	☺	☺
hope	☺	☺	☺	☺	☺	☺	☺	☺	☺	☺	☺	☺	☺	☺
hoping	X	☺	X	☺	☺	☺	☺	☺	☺	☺	☺	☺	☺	☺
likes	☺	☺	☺	☺	☺	☺	☺	☺	☺	☺	☺	X	☺	☺
liked	☺	☺	☺	☺	X	☺	☺	☺	☺	☺	☺	☺	☺	☺
coming	☺	☺	☺	☺	X	☺	☺	☺	☺	☺	☺	☺	☺	☺
making	☺	☺	☺	☺	☺	☺	☺	☺	☺	☺	☺	☺	☺	☺
any	☺	☺	☺	☺	☺	☺	☺	☺	☺	☺	☺	X	☺	☺
# incorrectly spelled words on long-term retention test	5	3	6	3	2	0	1	3	4	3	6	8	1	6

☺ : Correctly spelled word in both post-test and long-term retention test

X : Correctly spelled word during post-test, incorrectly spelled word in long-term retention test

n/a : Word spelled incorrectly during post-test not evaluated at the long-term retention test