AMELIORATING ORTHOGRAPHIC ERRORS

IN MIDDLE SCHOOL WRITING

By

MARY E. DAHLGREN
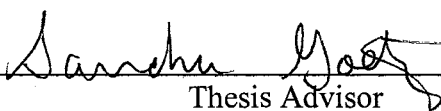
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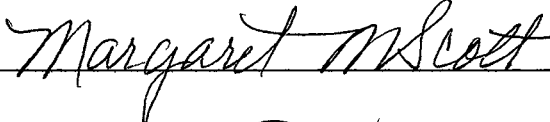1983

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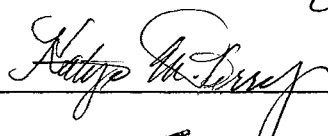
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Thesis Approved:

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Thesis Advisor

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Dean of the Graduate College

ii

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Finally, thank you to Dr. Joel Baker, my minister and spiritual counselor who has been of great help during the final weeks of my writing by lifting me up and keeping me together through constant prayer.

TABLE OF CONTENTS

LIST OF FIGURES

CHAPTER I

Introduction

It is important for our advancing society to ensure that all children learn to read and read well. The federal government is spending billions of dollars on reading instruction for kindergarten through third grade. Unfortunately, the United States has a large number of students beyond third grade who are struggling readers.

After spending a number of years working one-on-one and in small group situations with struggling readers in elementary schools, the desire to work with middle school students developed. Finding a way to help older students missing out on services in the elementary years was something that seemed to be the next step for serving struggling readers. Preventing reading difficulties at an early age is to the benefit of our children, but too many children advance to upper grade levels as struggling readers. Personal observations in urban middle schools, and multiple conversations with teachers and administrators confirmed a literacy gap exists for a large number of students. Children are entering sixth, seventh and eighth grades with comprehensive reading levels equivalent to early elementary students. Looking towards the future, these children possess limited opportunities in life when their literacy skills remain at the third or fourth grade levels. Teachers are required to teach curriculum standards based on grade level instruction regardless of student performance levels. This ever increasing gap needs to be

reversed so all children have the opportunity to continue their educational careers and compete equally with one another.

Being literate in America is necessary for survival. As the world expands and becomes more automated, the ability to read prescriptions, directions and keep up with advancing technology are only a few reasons supporting the need for a literate society.

Technology is becoming more and more prevalent in the work place and in school. The ability to read and write is absolutely crucial in accessing this ever growing technology. Growing use of electronic mail and hypermedia in the classroom is constantly changing and advancing our culture. The inability of a student to function at high levels, whether it is due to inadequate instruction or societal issues, marginalizes these individuals. All children have the right to a quality education, to learn critical thinking skills, and deserve the ability to engage in multiple discourses. Gee (1999) suggests the notion of engaging our students in the powerful 'social languages'. It is time to recognize an era of 'new capitalism' where adolescents are faced with the challenges of navigating community and academic discourses. The balancing of forms of identity, new work practices and the demands of new technologies and popular cultures are all challenges for this generation to consider. The notions around literacy must change due to the multicultural society in which we live. These students are not from the past but need to learn through their own discourses. Developing new social, intellectual, and discourse relations to the worlds where adolescents live and work are where the work begins. Teachers in classrooms today overlook the student environment frequently, relating all instruction to middle class values. Societal issues are numerous and largely contribute to poor literacy skills, but these are beyond the scope of this project.

An operational definition of literacy is the ability to read, write, and think in multiple discourses. Reading at the seventh or eighth grade level and communicating through written messages using the correct choice of words, correct spelling and cohesive text is a necessary skill in the workplace. Recent research studies report the decline of students functioning at grade level prompting a tremendous amount of research on the acquisition of reading (National Center on Education Statistics, 2002). The complex task of understanding the reading process continues to be analyzed because researchers are fascinated with the development of reading and the differing theories related to reading. These multiple theories hold great merit and show the insight and passionate beliefs of a number of erudite individuals in the field of reading research, psychology and linguistics. A constuitive definition of *Multisensory Reading and Spelling* (Wickerham & Allen 1993), the intervention program used in this study, includes an interactive, systematic approach to reading and spelling while engaging the visual, auditory and kinesthetic senses.

Clear evidence indicates various students in our country function below grade level, as reported by the NAEP scores of 1998. Many children slip through the education system for years, getting by with minimal literacy skills that will not sustain them in middle and high school, eventually impacting our dropout rates. It is time to strengthen our reservoir of human capital by ensuring we provide all students with the best education possible.

Issues of Concern

An area of concern is the urban school districts, especially the inner city middle schools. Standardized test scores are on the decline, attendance is at an all time low, behavior problems are more the norm than the exception, and strong academic performance is considered a weakness, not a strength among inner city middle and high school students (Showers, Joyce, Scanlon, & Schnaubelt 1998). The cause of the decline in our educational system has multiple variables and opinions. The varying reasons offered for educational decline include: continued use of traditional teaching practices, high stakes testing, poverty and mobility. Some of these may be valid positions, while others merely speculation. There is a call for educational reform with many different suggestions for what the reform should be and how it should be imposed or implemented. No single answer exists for reforming education because there are too many variables and individuals that will not be served by being placed in a one-size-fits all environment. Returning to the teaching styles of our past is not the right answer, but reflecting on the past may give insight to the future. Throughout history we have always known that reflection on past practices is a necessary step to moving forward and making improved progress.

Struggling and low-performing students are not guaranteed the resources to assist them in closing the gap in their academic performance, especially beyond elementary school. When student gaps are recognized and when an intervention specifically targets the student needs, is it possible to decrease the breach? What will the perceptions of the students be after participating in an intervention of this caliber?

Poverty Issues

Poverty is another issue inner city schools must face. Payne (1998) has provided research on teaching children from poverty and points out that schools operate from middle class norms and values, while many of our students reside in poverty. Consequently, there is a communication barrier and expectations not understood by these students. According to Payne, education remains an intangible goal for families of poverty, and therefore is revered, but not viewed, as a realistic need. It is fascinating and intriguing to note the findings by Payne, as she describes the different registers of the language, and how these registers are used depending upon the situation. A register is the language or talk an individual uses in a particular situation or context (Cazden, 1988). In order to be successful in society, having the ability to switch registers is crucial. Typically, students who come from poverty use a language understood by these students in the 'Casual Register', which is 'characterized by a 400 to 800 word vocabulary.' Word choice is general and nonspecific leaving nebulous descriptions and simplistic terms to be used for a variety of situations. According to Payne (1998) conversation is dependent on non-verbal assists, and sentence syntax is often incomplete in this register. Many of our inner city youth communicate in this manner.

Reaching these students, helping them find interest in learning, breaking down the communication barrier, and giving them the tools necessary to compete in today's world will make a difference. In order to make an instructional difference, a teacher must be prepared, focused and knowledgeable. Students need to possess high functioning literacy abilities and meaning making tools in order to succeed. This includes practice of reading

and writing in authentic contexts along with explicit instruction in the structure of the English language.

Low Literacy Rates

According to "Fifteen Years After A Nation at Risk" (1998) "a 1992 survey estimated that one-fifth of the adult population has only rudimentary reading and writing skills. The literacy level of young adults ages 15 – 21 dropped more than 11 points from 1984 to 1992, and 25% of 12th graders scored below 'basic' in reading on the 1994 National Assessment of Educational Progress (NAEP). Functional illiteracy among minority youth may run as high as 40 percent. The average achievement of high school students on most standardized tests is now lower than when Sputnik was launched," in 1957 (pg. 3).

The basis of literacy relies both on reading and spelling. Originally, reading and spelling were taught together as an integrated process. Over time these two skills have become further and further separated in classroom instruction (Henderson, 1981). Literacy instruction presumes reading and spelling are different functions no longer related. There are many publishing companies capitalizing on this notion, allowing the production of both basal spellers and basal readers.

Defining spelling and the measurement of spelling tends to blur the differences between reading and spelling. Standardized testing typically has children identify the word that is spelled incorrectly. This task could be called discriminate reading because the student is required to analyze the words and identify a specific orthographic pattern. It

is also common to read the words on a spelling test after writing them. This fact alone shows a high correlation between reading and spelling. While the concept of decoding is related to reading and encoding is related to spelling, to test the latter, the former is necessary.

Raising the basic competencies in literacy for elementary students has become a national goal. The 'No Child Left Behind' Act of 2002 mandates that all children will be reading on grade level by 2007. Research in the area of reading and writing is growing and the requirements for valid research are becoming more rigorous. The focus on elementary and beginning reading instruction is intense and necessary, but the need to look at our middle school students who continue to move through the grade levels in spite of poor reading and spelling skills is also important. There are data to support the thinking that once a child falls behind in school he has a one in eight chance of ever catching up to grade level (Juel, 1988).

The mandates from the federal government point to the belief that as a nation we are not willing to let any child go through the public education system without the best education possible. Pressure to promote students, regardless of academic ability, causes educators, administrators and parents to ignore the students beyond third grade who are reading below grade level. This is a great disservice to our children and our nation. There is no doubt that the focus on the early years of learning are critical to the success of our students, but allowing struggling students in the middle grades to slip through the cracks of the educational system diminishes success in the future. National studies show that about 30% of our students leave third grade below basic competency levels of reading (Anderson, 1985; NAEP 1984, 1992).

There is a lack of instructional knowledge about orthography and the structure of the English language for middle school teachers. Many middle and high school teachers are not prepared to remediate students who are functioning below grade level (Moats, 1994). The large sums of money being spent on special education and the teaching of English as a second language has not solved the problems, and there are many students needing more services beyond these mentioned that are never identified. We see a large number, up to 30%, of the students in middle school being identified for special education for the first time (Joyce & Showers, 1994). In the upper grades, students are inundated with new information requiring high level processing and metalinguistic comprehension tasks that are frequently beyond the stage of development for the struggling student.

A study titled, "Education Standards" (1997), concluded many educators find it difficult, if not impossible, to increase and measure learning without setting some kind of academic standards. These educators also believe that for instruction to be effective, assessment of student knowledge must occur regularly. Setting academic standards for our students and using data driven decision making to improve instruction is positive for education. The greatest difficulty is in determining the best method of collecting data to make good instructional decisions. Many schools are spending up to two weeks or more of class time administering tests. It is important that schools determine what is working in the classrooms and what is not working. Too often teachers repeat activities year after year because of tradition, and the purpose for doing the activity is meaningless and academic value has been forgotten (Allington, 1994). It is important to find out what is

academically increasing knowledge and learning and to continue to emphasize those activities while eliminating activities that have no academic value.

Statement of the Problem

Early intervention research has shown that appropriate, early, direct instruction is an antidote for reading problems in elementary schools (Snow, Burns, & Griffin, 1998) along with contextual reading, a potent factor in achieving the true purpose of the reading process. Vygotskian theory criticizes the idea that literacy emerges naturally out of children's oral language faculties 'Written language is a separate linguistic function, differing from oral speech in both structure and mode of functioning.' (1999, pp.180-181). Longitudinal studies have shown that of the children who are struggling in third grade, 74% remain disabled in the ninth grade (Juel, 1988; Stanovich & Share, 1995). Older students with literacy problems exhibit the same characteristics that are exhibited by younger children with literacy problems (Greene, 1998). These problems are pervasive and tend to stay with a child into adulthood. Learning to compensate is a way of dealing with reading difficulties, but it takes great effort to learn compensatory strategies.

Explicit instruction is not the only method to ameliorate reading difficulties, but research attests to the fact that explicit systematic, sequential instruction in the early years helps to alleviate potential reading problems (Snow et al. 1998). This thesis attempts to expand the research to see if these same instructional principles apply to older students

who have moved beyond the early years still in need of the foundational information to become literate.

A plethora of research exists to support intervention for struggling students in the elementary grades (National Institute of Child Health and Human Development, 2000) with significant funding from the federal government for the Reading Excellence Act (1998), and Reading First (2001) to aid struggling readers. Improvements in reading education in the lower elementary grades, however are coming too slowly to affect the large numbers of students beyond 3rd grade who have been the victims of misguided reading instruction and scarce resources. There are few examples of classroom programs designed for the middle school teacher who has little experience with basic literacy instruction (Greene, 1998). The students who are arriving in the urban schools with poor literacy skills need instruction that can move them on into the realm of higher functioning. More research is necessary to guide the profession in determining successful ways to help at-risk students beyond the 3rd grade.

Purpose of the Study

Describing the effectiveness of a language arts program that specifically focuses on spelling instruction and links to written communication is the rationale for this study. *Multisensory Reading and Spelling* (Wickerham & Allen, 1993) was taught in a summer school program for students failing language arts. This program has been researched in lab situations, but lacks study of its effectiveness and the ability to deliver instruction in a regular classroom. Structured intervention programs are not necessary in many schools.

School districts are in critical need of a specific program to guide instruction for those students entering middle and high school functioning two or more years below grade level, and teachers who are equipped to provide effective instruction.

The intent of the study was to look at the performance level of students in an urban school district failing language arts and closing the three or four year gap through a structured intervention program. Focusing on improving spelling and writing skills through an intensive intervention program, *Multisensory Reading and Spelling* (Wickerham & Allen, 1993) provided the impetus for this research. Designed to approach basic literacy instruction through spelling strategies, moving from a basic developmental level of sound/symbol relationships to patterns in the language and finally to the morphological level of the English language frames the program structure. The reason for approaching instruction in this manner is to avoid the resistance to participating in a reading program when in middle school. This is a very difficult situation for children facing the fact that they are not reading, spelling or writing on grade level. Instead of looking at instruction from the point of being a poor reader, it is some times more acceptable for adults and older students to approach a remedial situation as an opportunity to improve spelling skills. The issue addressed in this study regards the many students who have moved beyond elementary school and are still struggling in the area of literacy. There is no doubt that a student in middle school wants to be successful, wants to read and write, wants to be able to compete in the academic world to the best of his ability. Studies conducted on middle school students to determine the best practices for aiding children who are still behind when entering middle school have not been embraced or commonly implemented in the appropriate middle school environment (Greene, 1998).

This study explored one way to intervene and remediate students through a structured, explicit, approach to reading and spelling. As part of the intervention, these students also participated in reading *Tuck Everlasting* (Babbit, 1975), and engaged in discussion and written responses to and about the book in literacy circles. Comprehension strategies were developed through visualizing and verbalizing information from narrative text, although this was not the focus of this study, higher level comprehension and constructing meaning from print is the goal of reading. Students were encouraged to use the visualization and verbalization strategies to transfer to written composition. The quality of the written composition was analyzed along with the spelling patterns.

This intervention program was designed to teach decoding, spelling, comprehension, written composition, for middle school students reading below grade level. Direct instruction in decoding and spelling was delivered daily. Instruction in comprehension and written composition was structured using specific questioning strategies and writing models. Integrating reading and writing provided a balance to the direct instruction to make a more comprehensive program. The study focused on spelling growth and written communication growth with 16 sixth grade students in an at-risk inner city middle school. This study was conducted for a period of 6 weeks.

There are very few comprehensive programs designed for middle school language arts teachers to work with low performing students. The gap between what is required to be taught according to the state standards and the low academic level of the students continues to grow. If the teachers and administrators continue to ignore this fact there will never be an end to the cycle of failure.

Methodological Framework

This was a qualitative research design using a writing assessment and an interview. Grounded theory methodology guided the data collection and constant - comparative analysis for theoretical development based of the findings from the study. A matrix was used to analyze the writing assessment gathered twice during the study to determine the changes in spelling, quantity of words and quality of writing over a period of time. The interview group was randomly selected, 10 students from the intervention, 96% of the students in the study, were interviewed about their perceptions on spelling, writing and their participation in the intervention. Constant comparative investigation of the responses from the interviews support theory development.

Integrating what is known about the specifics of beginning reading with what is known about implementing and sustaining effective practices in the complex environments of schools the intervention, *Multisensory Reading and Spelling* (Wickerham & Allen, 1993) was the program focus in this study.

During a summer school session, *Multisensory Reading and Spelling* (Wickerham & Allen, 1993) was implemented in 2 6th grade language arts classes, 90 minutes a day for 6 weeks. *Multisensory Reading and Spelling* (Wickerham & Allen, 1993) has been aligned with the state standards in the state of Oklahoma and meets 75% of the curriculum requirements. While this is not sufficient for students in 6th grade, the problem of poor reading skills inhibits students from excelling in the standard curriculum delivered in a regular classroom.

The teacher and administrators in the school where the study took place agreed to work with the researcher who taught the first 2 weeks of the summer school classes. A certified language arts teacher who has been trained in *Multisensory Reading and Spelling* (Wickerham & Allen, 1993) taught the classes the final four weeks of the summer school session. The researcher acted as an observer-participant who continued to offer assistance throughout the implementation of the intervention program visiting the classes 2 times a week.

Research Questions

The resultant research questions answered by the study were:

1. What are the outcomes of spelling and writing based on a developmental stage approach with low performing middle school students in a 6-week intervention?

2. What are the self-perceptions of the students as spellers and writers and how did the students perceive the intervention?

Significance of the Study

Based on the results of a thorough review of relevant current literature there is a need for further research on successful interventions with adolescent poor spellers and writers. This study looked at the implementation of an intervention in a regular language arts summer school classroom designed specifically for struggling students. The

implementation was delivered by the researcher and a teacher who had participated in 42 hours of professional development training. The researcher mentored and coached the teacher during the previous school year to ensure understanding and fidelity of the program delivery during the summer school implementation. There have been numerous studies in clinical settings and in special education classes that have shown success with adolescents increasing their literacy levels (Torgesen, 2001). As the number of children entering middle school functioning below grade level increases, it is important to find programs that can be implemented in regular classrooms by regular education classroom teachers.

Examining a structured, explicit approach to language arts instruction provided information on how to offer an alternative to a district that was experiencing failure with their middle school students. Finding an effective quality program could make the difference for a large percentage of students who choose to drop-out of school because of academic failure.

Schools continue to teach the same curriculum year after year ignoring the fact that their students change. If an appropriate program can help students move up to a higher literacy level in order to make them equal with their peers in surrounding districts it needs to be documented. A number of variables have been identified as being helpful and improving literacy scores for elementary students. A review of necessary components in an effective program can be found in Preventing Reading Difficulties (1998). Using many of these same components in the instruction of middle school students may be valid strategies to close the gap between literate and illiterate.

Potential beneficiaries of this program, *Multisensory Reading and Spelling*, are ultimately the students who enter middle and high school as struggling readers. Administrators and teachers will benefit from the knowledge of the existence of a program designed to meet the needs of those students who are experiencing great difficulty in learning the concepts of the English language.

Definition of Terms

There are a number of terms used throughout this paper that are operationally defined and integral to the study. Multisensory teaching engages the visual, auditory, kinesthetic and tactile senses and at a minimum two of these simultaneously. The term decoding refers to the ability to exploit the regularities in the mapping between words and their alphabetic representations. The program that is the focus of the study, *Multisensory Reading and Spelling*, is a direct, structured, systematic, multisensory curriculum to teach reading and spelling. This program is intended to be used with a literature based curriculum. Orthography is a term used to discuss the patterns of spelling in the English language. Orthographic errors are simply misspellings that are used to analyze the knowledge and developmental stage of the student.

Assumptions

Students at the middle school level wanted to increase their literacy levels and were willing to work hard during an intervention that focused specifically on spelling and

writing helped students to close the gap in spelling deficits. Students and their parents value education and were motivated to be successful in school. The students assigned to the study would be cooperative in the participation of the intervention, an interactive approach to learning.

Limitations

This study was limited to a specific summer school program which reduced the number of participants in the study. Summer school was limited to six weeks of classes five days a week. Regular attendance in summer school resulted in 45 hours of instruction in the intervention program. There were a total of 16 students in the study, but only 13 participated in the post writing assignment and ten of those students were interviewed. These small numbers make it difficult to generalize the results of the study to larger populations. The experience of the researcher and the other teacher were critical for the successful implementation of the program. Participating in in-depth training to gain understanding of the delivery of the program is a time consuming process limiting the number of teachers available to teach this type of intervention.

CHAPTER II

Review of the Relevant Literature

Introduction

Linnea Ehri (2000) has done research trying to determine how closely associated are reading and spelling when measured by word reading and spelling tests. She found, in an analysis of correlational research on 11 out of 13 tasks, the correlations ranged from r =.68 to r = .86 showing a high relationship between reading and spelling. She also goes on to say these findings were the same from first graders to college students.

Orthography, a system for representing language with written symbols, can be elusive for individuals with a weak visual memory. Having a concrete understanding of the organization and structure of the English language is beneficial for students and teachers to assist in making sense of the language. With high correlational findings researchers are telling us the reciprocal relationship between reading and spelling is very strong. The alphabet of 26 letters makes up the different spellings in our language, but they do not represent the sounds of modern English in a transparent way. Our orthography is a deep orthography, meaning the spelling system represents morphemes, meaningful parts, as well as sounds.

English is constantly adding new words to the language making it more complicated and unwieldy. The English language has over 600,000 words and with the age of technology new words are added regularly. The beauty of the English language is the layered organization to represent sounds, syllables, and morphemes; its spellings are derived from several languages that were amalgamated over hundreds of years because of political and social changes in Great Britain.

Organization of Chapter

This chapter begins with a brief overview to provide insight into the origins of English, the theoretical framework showing the connections between phonology, orthography, syntax and semantics, trends in spelling instruction, the stages of developmental spelling, spelling errors in older students and the effectiveness of multisensory instruction. This chapter also includes a review of the relevant literature regarding theoretical research on spelling and the findings of multisensory programs.

Historical Overview of English

Understanding the history of the spoken and written forms of American English, as we know it today, gives insight to the orthographic patterns of the language that otherwise appear illogical. The written language is not arbitrary based on the findings of Hanna, Hanna, Hodges and Rudorf (1966). A computer analysis of over 17,000 words found 50% of English words are spelled accurately by sound-symbol correspondence

rules alone. If word meaning, origin and morphology of a word are considered another 10% of our words can be spelled accurately. Hanna et al also argue that fewer than 4% of the words in the English language are true oddities that do not belong to a family of other words. This suggests that the spelling system generally reflects a structural consistency only partially evidenced in sound-symbol correspondences. Chomsky and Halle (1968) asserted that, for the speaker-reader of English, the orthography optimally reflects the semantic relationships among words as well as quite effectively predicting pronunciation. They believed that meaning influenced the spelling of English words and was the source of much of their regularity contending that the order lay at a word's lexical base, connected to a changeable surface structure via a set of phonological rules. Put more simply, words that are related in meaning will often be related in spelling despite changes in pronunciation (Chomsky, 1970: Templeton 1983, 1989). For example, note the consistency of spelling in the following underlined letters even though there are corresponding sound changes: collide – collision, major – majority, reside – resident.

English is a language that is alphabetic, syllabic and morphological layered in the architecture of multiple languages. The base language of modern English was Anglo-Saxon, the Germanic tongue of the Norse tribesmen who populated the British Isles before 1066 A.D. Germanic tribes began to settle in different parts of England (Henry, 1999) the language of these tribes came to be known as Anglo-Saxon. This became the dominant language because these people adopted 'neither the language nor the religions of their new home': (Balmuth, 1992, p. 72). The words from the Anglo-Saxon language are still a part of our common daily vocabulary. Their words represented the people, objects and daily life events. Some of the words make up the irregular part of the

language and usually consist of one syllable, numbers from one to one hundred, basic colors, words having to do with fishing, and hunting and farming originated from the Anglo-Saxon language (Henry, 1999).

After the invasion by Norman French armies and William the Conqueror, the language of the Norse French invaders, a close relation to Latin, was imposed on British natives for almost four hundred years. Old French, Old English and Anglo-Saxon, were gradually amalgamated, merging into Middle English by the late 15th century. Claiborne estimated that after the Norman Conquest 'more than ten thousand French words passed into the English vocabulary, of which 75 percent are still in use' (1983, p.112). Scholars trained in the classics brought into English thousands of Latin-based words in the 1500s as printed material became more common. Moving into the Late Middle English (1422-1489), the written word became important as the introduction of the printing press recorded spoken English (Henry, 1999). A transition into Modern English is the beginning of what has been called the Great Vowel Shift. "Toward the end of the Middle English period and into the Modern Early English period, the long vowels of Middle English went through a dramatic change, shifting upward and to some degree forward in their pronunciation" (Venezky, 1999, p. 112). These changes caused a significant change between phonology and orthography and the changes continued until the pronunciations of today were reached (Henry, 1999). As the language matured and became known as the period of Mature Modern English, (Henry, 1999) the growth of scientific disciplines and the need to name many discoveries, scholars also coined new terms from Greek morphemes that remain a significant part of our language today.

As Modern English developed Noah Webster challenged the British English and wanted American English to be simplified. Venezky (1980) relates the suggested changes for the American English language recommended by Webster and the reforms of the early nineteen hundreds. Suggested spelling changes that were accepted during this time were dropping the u in words like honour and colour; changing the re spelling to er in theater and center. The latter changes were not necessarily beneficial when spelling words like central or theatrical because of the need to drop the e and retain the r when changing the endings. Computers today recognize both spellings as correct.

Venezky (1980) outlines the spelling reforms in the mid-nineteenth century from Noah Webster through the 'organized assault on English spelling' (p. 24) into the early 1900's when the Simplified Spelling Board was created and had prestigious supporters such as Andrew Carnegie and Theodore Roosevelt. Even with these supporters the recommended changes in the language met with great resistance and the majority of the changes were rejected.

Spelling changes were not well received by the general public, even when it was to simplify the language. At one time the Chicago Tribune tried to adjust spellings to attract more readers and increase circulation, changes included: fantom for phantom, jaz for jazz, rime for rhyme and iland for island. The pressure was too great and the editors succumbed to the readers demands and reverted back to the original spellings.

Layers of the language move from a basic foundation of sound and symbol relationships to syllable patterns to the morphology of the language linking meaningful units that frequently transcend syllable patterns and do not follow the sound to symbol relationships either.

Theoretical Framework

Reading depends on the coordinated use of multiple brain systems. This opinion

suggests a well-documented inference: reading problems may originate in any or all of

the processing systems. Subtypes of poor readers may have specific problems in one of

these processing systems. If reading instruction is well designed, it will educate all of the

functions: recognition and fast processing of sounds, letter patterns, morphemes, word

meanings, phrases, sentences, and longer passages. The model of major processing

networks (Seidenberg and McClelland, 1989) made up of four general functional

systems, the phonological processor, the orthographic processor, and the context

processor all linking to the meaning processor. Orthographic features play a crucial role

in the reading-writing relations model originally theorized by Seidenberg and McClelland

advanced and graphically displayed by Adams (1990) showing the relationships of the

processors in Figure 1.

The four part processing model works interactively. The processors are not linear

in their performance, but are explained separately, in this section, to provide a picture of

the system and the way they interact with one another.

The phonological processor enables us to perceive, remember, interpret and

produce the speech sound system of our own language and learn the sounds of other

languages. The phonological processor allows us to imitate and produce stress patterns,

including the rise and fall of the voice during phrasing adding to the fluency of the

reader.

The orthographic processing system visually perceives and recognizes letters, punctuation marks, spaces, and words. We rely on the orthographic processor when we copy lines of print, recognize words as whole units, or remember letter sequences for spelling. When we look at print, its features are filtered, identified, and matched to images of letters or letter sequences already in memory. If the letters or letter sequences are familiar, we associate them with sounds and meanings. We have no trouble interpreting widely varying forms, including individual handwriting styles, type fonts, or uppercase and lowercase letters. The size, style, and case of print are not major factors in word recognition once a reader knows letters and letter sound relationships. The orthographic processing system stores information about print necessary for word recognition and for spelling. The speed with which letters are recognized and recalled is very important for proficient reading. Obviously, print images must be associated with meaning for reading comprehension to occur.

According to the four-part processing model, (Adams, 1990) recognizing words as meaningful entities requires communication between the phonological processor, orthographic processor, and meaning processor. The meaningless association of speech sounds with print may allow us to 'read' a foreign language without knowing what it means, to read nonsense words, or to read a new name by sounding it out, but unless the meaning processor is accessed no comprehension is possible. The meaning processor stores the inventory of known words and also constructs the meanings of any new words named during reading. The context of the passage supports the construction of those meanings.

A word filed in the mental dictionary is multidimensional; its image has sound, spelling, morphological structure, and syntactic role. The meaning processor is structured according to a number of semantic organization features, such as synonym relationships, roots and other morphemes, spelling patterns, common meaning associations, and connotations. It expands and reorganizes itself as new vocabulary is learned.

The context processor influences the meaning processor in many ways. The context in which a word occurs is the sentence and sentence sequence in which it is embedded. The context provides the referent for a word's meaning. For example, many words have multiple meanings but only one is used within a specific sentence. The spelling of a word such as passed or past is determined by its meaning in the context of a sentence. Context has only a very limited role in facilitating word naming itself. Word recognition and pronunciation are primarily the job of the phonological and orthographic processors.

The processors can work independently or may rely on one another in the literary process (see Figure 1). Found at the center of the processors is the meaning making processor, semantics, which is linked to all of the processors.

A key factor at the base of the processors is oral language development. Oral language is an important factor because reading comprehension begins at an oral level. For beginning writers to have language to put on paper, they must have a strong oral language base. One way to help students improve oral language is by providing them with a guided approach. Modeling and discussing language with children can help them to focus on the topic and help them to sequence the narrative.

It is through oral language that our phonological processor provides the channel for communicating with students about letters, words and their meanings. The primary means by which we begin to help children learn to read and comprehend, is by talking with them. Coupled with print, the orthography, and the sounds of the language and the context of our message or our meaning they reinforce each other ensuring that we know and internalize the printed word with the greatest of speed and accuracy. Having a wide lexicon of language to draw upon makes it possible to generate approximations of words in context that are only sounded out (Torgensen, 1997).

Readers need to be able to interpret and attach meaning to information they receive through the auditory channel and formulate a response because reading comprehension ultimately depends upon it, reinforcing the interaction of all the processors is key to literacy.
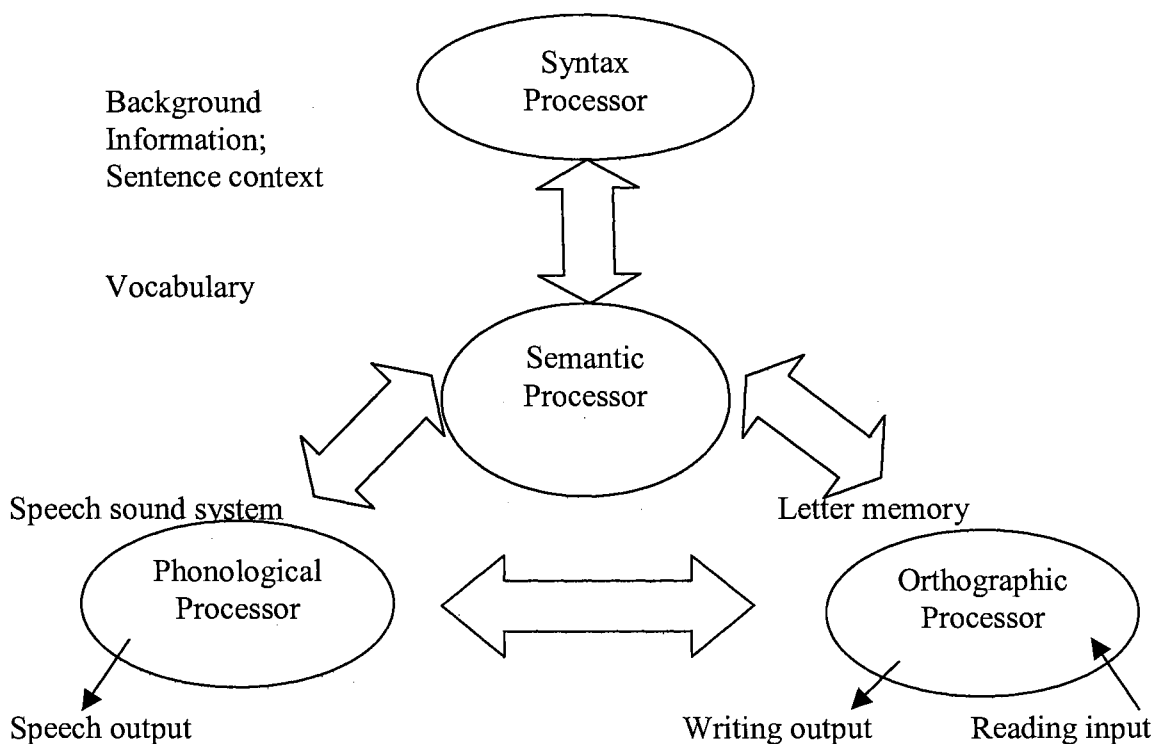
Figure 1. Four Processing Systems

Related Theories

Today most researchers agree that reading and spelling are strongly connected activities (Ehri, 1980; Juel, Griffith, & Gough, 1986; Marsh, Friedman, Welch, Desberg, 1980; Morris and Perney, 1984; Zutell & Rasinski, 1989). However, the nature of the relationship between the two is not yet fully understood. Some have sought to clarify this relationship by studying differences in word recognition and spelling ability. Nelson (1980), for example, argues that both skills may stem from the same underlying knowledge, despite perceived differences in children's reading and spelling abilities. She suggests that such differences may be due to important distinctions between the demands of word recognition and those of spelling.

First, the number of graphemes which can be used to represent one phoneme tends to be greater than the number of phonemes possible for one grapheme. For example, the /a/ in trade can only be pronounced with a long a sound; however, it can be represented by a number of different graphemes (e.g., take, wait, stay and even bread, eight, and they).

Secondly, in reading, the end product must be a "real word." This fact limits the likelihood of errors in word recognition, because words tend to be more familiar in their spoken form than when written.

Finally, since reading is a receptive task, words can be recognized on the basis of just a few letters. The same is not true when the task is one of word production, as is the case with spelling – then every letter counts.

Ehri (1980) also views word recognition and spelling as sharing a common base. 'Underlying the emergence of both capabilities is the child's growing knowledge of print as a means of representing all the words in his language' (p.312). Orthographic images are seen as the focal point of this learning, facilitating both reading and spelling.

Amalgamation Theory

In her amalgamation theory, Ehri (1980) suggests that during the course of learning to read, orthographic images of words are stored in memory along with their phonological, syntactic, and semantic identities. Because young children already know how words are pronounced, it is their printed forms which must be learned. According to Ehri phonological recoding skills and the mapping of letters and letter sequences onto phonemes in order to decipher a word is essential for reading (Ehri, 1980, 1986, 1987, 1991).

When a word is first encountered, at least some of the letters and sounds are processed by phonological representation recoding, and an alphabetical – phonological representation results. These letter-sound associations help to secure the visual image in memory (Ehri, 1980; Ehri & Wilce, 1985), so the next time the word is encountered the association can be retrieved. The more complete the understanding of what letters map to what sounds, the more firmly established the orthographic image will be (Ehri, 1980).

Initially word recognition will be slow and laborious and perhaps inconsistent, because stored images are likely to be incomplete and the printed form processed in a letter-by-letter fashion. For example, by remembering associations between letters in

spelling, and sounds in pronunciations, novice readers my correctly identify MOUSE on the basis of remembered associations with M____S. However, these phonetic cues represented only a partial picture. As a result, the same beginning reader may also incorrectly recognize the words MOOSE or MOSS on the basis of the same cues.

Repeated readings of the word strengthen the memory connections between the graphemes and phonemes (amalgamation of the syntactic and semantic identities as well) until, finally, the spelling itself is sufficient to elicit the word's pronunciation. Once a repertoire of complete word images has been acquired, word reading changes and words are retrieved automatically, and more or less as wholes.

Ehri (1980) conducted several experiments to elucidate children's use of orthography to store speech sounds in memory. In one study with first and second graders, Ehri predicated that children would use spelling knowledge to remember the pronunciations of various three-letter nonsense words. (All words had a CVC – consonant /vowel/consonant pattern.) The children were first shown cues paired with the correct pronunciation of the nonsense word. The cues were either meaningless but visually distinctive forms (such as squiggles) or the initial consonant of each word. During the learning process when the single consonant cues were shown, the children were also sometimes shown a study aide. This was either a correct spelling of the nonsense word or and incorrect spelling, also a CVC pattern. Testing results confirmed Ehri's predictions. Those children who had been shown the correct spellings during the learning phase remembered more sounds than those who had not. Also, initial consonant sounds were better prompts for memory than meaningless squiggles.

Spelling Trends

Schalagal (2001) reviewed three approaches to spelling instruction examining the most prevalent instructional strategies, traditional, developmental, and the structured language approach used in classrooms of the past and today. Citing a historical strategy that is still common today, memorization, one of the most prevalent tactics for spelling instruction, is the practice of writing single words multiple times until dedicated to memory. Schalagal states findings regarding this practice, 'In the context of ordinary spelling instruction, copying a word over more than three times was demonstrated to have minimal additional effect.' (p. 150).

A second approach, the developmental approach, has come into practice over the last thirty years in large part from the intense work and study at the University of Virginia under the guidance of the late Edmund Henderson and his colleagues. Much of the research on the developmental stages of spelling is commonly known as the Virginia studies. The stages of spelling development have been refined since the work of Read (1975) and Chomsky (1971) giving insight to the understanding that phonology guides children to make decisions about inventive spellings. A number of researchers have defined stages of spelling using different terminology; Schalagal uses Henderson's (1990) stages of development 'because it is a descriptive system that is tied to analytic, observational, and instructional hierarchies' (p. 153).

The third approach to spelling instruction Shalagal discusses is the structured language approach based on the work of Samuel Orton with dyslexic students. The application of the alphabetic principle is at the core of Orton's work (Orton, 1999). The

Orton –Gillingham Method uses systematic teaching of spelling with direct instruction in production of speech sounds, and using a detailed analysis of regularities of English spelling.

Commercially produced programs have been the determining factor in spelling instruction over the last few decades presenting a list of words usually related to a topic (Post and Carreker, 2001). There is not a common linguistic structure to these words or if a common spelling pattern is presented it is often related to sound rather than orthography. If a pattern is related to sound and has multiple spellings for the sound represented in the list it only confuses a student about the language. For example a list focusing on the long /a/ sound may consist of these words: crate, flake, neighbor, vein, rein, train, explain, great, and apron. When a child is confronted with a list like this there is no hope but to assume the English language is unreliable and irregular. Textbook publishers have given these types of lists to teachers to make sense of on their own and ultimately causing great frustration for the student. In classrooms the practice of spelling is frequently relegated to brief introductions of a list of words followed by practices tied to rote memorization. Spelling instruction in many American schools has been largely confined to copying words (Cronell & Humes, 1980). Children have been given lists of words to memorize with little or no instruction about how to go about learning them (Peters, 1985). Moats (1995) clearly expresses the importance of being able to read all the words on the spelling list before requiring children to spell the words.

The stages of spelling, reading and writing have been linked together to show the common patterns of growth in students as they progress through these stages. As teachers we are always seeking out ways to help students achieve their greatest potential

academically. It is invaluable to understand the literacy links and engage these in an active way to help student success increase.

Stages of Spelling

It is important to understand the theoretical underpinnings of the spelling process and the stages of development that have been identified by a number of researchers (Read, 1971,1975; Henderson, 1981; Trieman, 1993; Ehri, 1980; Moats, 1994; Frith 1980). Read (1971) began to delineate the stages of development after looking at preschool children in the beginning stages of writing. First grade studies and longitudinal studies by Trieman (1993) helped to further delineate the stages of spelling development. Stages of development labels change depending upon whose work is being reviewed, but the defining characteristics remain the same. The stages in this paper will closely follow those identified by Bear, Invernizzi, Templeton and Johnson (2000) in *Words Their Way.* These stages of spelling development were solidified through the work of Henderson (1990) and his colleagues in the Virginia Reading studies. First influenced by Read (1975), who studied preschool children's writings and began to find the logic in their 'invented spellings' based on their phonological knowledge, Henderson (1990) organized these spellings into stages of development from beginning writing to encompassing strategies of mature adults. Bear et al. (2000) developmental model includes five stages of development characterized by the different strategies employed by students as they progress through these stages. These stages are: preliterate, letter-name, within-word pattern, syllable juncture, and derivational constancy (Henderson, 1990). 'We can say

with confidence that these stages of word knowledge have wide generality across methods of instruction, levels of intelligence, economic status, dialect and even languages' (p. 40).

Preliterate

The first stage reflects the writing of children who are not yet reading. In the early part of this stage a child may write randomly using idiosyncratic symbols mixed with letters and numerals. There is no use of grapheme-phoneme correspondence and directionality is not in place. At this stage only the child can read the message back and the message may change over time.

As this stage progresses there is a growing awareness of left to right directionality and a child may use incomplete or abbreviated spellings. Bissex (1980) relates the example of her own frustrated child writing the message "RUDF" (Are you deaf?) The writer uses single letter names for whole syllables and relies on letter names for sounds with vowels missing.

Letter-Name

Students begin to show systematic representation of all sounds along with surface phonetic features. Spelling at this stage is systematic and principled, based on awareness of what the mouth is doing but lacking an awareness of correct spellings for sounds. There are a number of characteristics found in this stage of development. Read (1975)

discovered a number of these features in the writings he examined and helped to define this stage based on children's logical application of phonology and orthography to their writings.

Children at this stage children represented vowels using the letter name:

DA – day   KAM – came   FEL (feel)   MI (my)

Short vowel spellings are typically derived from letter name closest in articulation:

a for /E/   BAD – bed   SAD – said

e for /I/   FES – fish   WEL – will

i for /U/   KIT – cut   MIH – much

i for /O/   GIT – got   CLIK – click

o for /U/   WOD – would   SUGH – such

Preconsonantal nasals are omitted at this stage:

JUP – jump   AD – and   BAK – bank   ED – end

Syllabic consonants are used to represent complete syllables as these consonants have features similar to vowels:

LITL – little   BIGR – bigger   SOGR – sugar   OPN – open

Inflected endings are spelled phonetically:

WAKT – walked   ARVD – arrived   HALPT – helped

DAWZ – dogs   PEGZ – pigs

Vowel spellings show phonetic detail:

SOWN – soon   GOWT – goat   BOE – boy   POWLEOW – polio

Affrication of tr and dr:

CHRAN – train   CHRIBLS – troubles JRAGN – dragon   JRS- dress

Intervocalic flaps shown as D:

LADR – letter   WODR – water   BEDR – better

Letter names are used to represent the sounds in letters Y for /w/ and H for /ch/

YOH – watch   YL – will   HRH – church

Such inventions on the part of children at this stage provide a clear demonstration of their ability to discriminate the sound representations of letters. This strict adherence to the alphabetic principle has its limitations for communication, however, for words that should be graphically different are often spelled the same (e.g., BAT = bat, bait, bet). Also, words with common roots that ought to be graphically similar are likely to be very dissimilar (e.g., SIN = sign; SEGNL = signal) (Henderson, 1990).

Within-Word

Writing demonstrates a broader understanding of English orthography and more conventional spelling at this stage. Awareness of syllable patterns develops recognizing each syllable must have a vowel no longer using l, r, m and n as complete syllables. The problem with substituting short vowels disappears and the uses of silent letters, such as e, are represented to show vowel markers. Children begin to use reliable patterns of letters (Beers, 1980) that have stabilized from automatic sight word recognition.

Patterns are abstract though and are still being mastered and over generalizations occur, especially with long vowel spellings.

Syllable Juncture

Polysyllabic words are the focus of this stage. The orthographic issue of central importance here is that of consonant doubling to mark short vowels (Henderson, 1990). Other features characteristic of this stage of development includes dropping the silent e when adding a vowel suffix and changing the y to i to achieve the inflected ending required. It is important to understand patterns at this stage and appreciate the basis for the changes as syllable juncture develops. When spelling words such as hopping and hoping, confusion tends to persist until an understanding of the changes in vowel sounds is established. The internal structure of words can be most elusive when studying the spellings of muffin, rabbit, or bobbin. The need to double the medial consonant to keep the first vowel short is easily confused when looking at words like robin, damage and balance. There is a logical explanation for these oddities that goes back to word origins as Henderson (1990) points out: In French the accent is typically at the end of words, while in English we prefer to stress the beginning syllable instead. 'In French, for example, Robert is pronounced Ro bert' Ro bear); in English it is pronounced (Rob' rt.) The spelling of Robert breaks in the doubling rule because it preserves the derived form in which the first syllable the vowel was open and long. The word robin, derived from Robert, is spelled in the same way.' (p.68).

Consonants double at the beginning of words with Latin roots such as affect or illegible, the doubling results from the addition of a prefix which has changed to allow an easier pronunciation (ad + fect and in + legible) and 'relies more on meaning than on any other feature such as stress or vowel pattern' (Henderson and Templeton, 1986). An

understanding of all the features of spelling leads to the deeper meaning of our language

guiding us to a very natural progression into the next stage of spelling, derivational

constancy.

Derivational Constancy

When students are writing and using words at this stage of development they are

usually reading efficiently and fluently. It is at this stage where the development of

greater understanding of relationships of words, derivations and multiple meanings

ultimately give insight into spelling. Venezky (1967) and Chomsky and Halle (1968)

recognize the importance of expanding the relationship between orthography and

meaning were. The importance of understanding the deeper morphology of the language

and the influence on the spelling patterns is at the forefront of this stage of development.

Students in fourth grade through college are learning and functioning within this stage of

spelling development continually developing a greater vocabulary while simultaneously

improving spelling abilities. With increased literacy comes an exposure to lower

frequency words predominately Latin or Greek in origin. It is at this time when students

begin to appreciate the fact that the meaningful units of the language transcend syllable

boundaries. For example, the root pter found in pterodactyl is also found in the word

helicopter and meaning finger like wing. The root mne is found in the word mnemonic

and also in the word amnesia and meaning memory. Silent and sounded consonants are

one of the features characterized in the derivational constancy stage of spelling. Common

words that have different pronunciations but share orthographies are found in sign and

signal or signature, haste and hasten even though the relationship of these words is hidden by their phonology their spellings reveal the relationships (Templeton, 1983).

The unaccented syllable in polysyllabic words more commonly known as the schwa syllable can be found in words fitting in the derivational constancy category but are frequently linked to base words where the vowel sound can be identified. Other syllable changes include moving from a long vowel sound to the short vowel sound in words such as divide to division and nation to national.

Derivational constancy represents the final stage in a developmental process of learning to spell. Beginning with knowledge of the function and form of print, the young child soon discovers the relationship between spoken and printed words (Morris, 1981). Given the essentially morphological base of the English language base of the English language (Chomsky and Halle, 1968; Venezky, 1967; Henry, 1999), it is not surprising that the fundamental principle of pattern by meaning rises to importance as a greater number of these low-frequency words are encountered in print in the middle school years and beyond. Thus, a child gradually learns to take command of what may appear to be on the surface an erratic system, but which though complex, is orderly and stable at a deeper level, a level that preserves the meaning of derived words.

In Schlagal's (2001) review of the stages of spelling development he also discussed the value of assessment to guide instruction in the developmental stages of spelling, 'Errors at students' instructional level are then examined for stage and particular error-types. In order to complete a qualitative analysis of a students' errors, the teacher must have basic knowledge of the featural problems posed at each stage and, more particularly, must pay careful attention to the students individual confusions' (p. 161).

Moats (1995) gives a thorough discussion of spelling errors and the implications for those errors.

Spelling Errors in Older Students

Among middle and high school students with delays in the acquisition of reading, writing, and spelling, most experts understand problems with phonology. Beyond the linguistic level of phonology, problems at the levels of morphology and syntax are becoming recognized not only as a source of difficulty, but also as critical areas for remediation. Henry (1993) demonstrated that enhancing morphological awareness aids in reading success. Morpheme awareness and poor spelling were clearly connected by Carlisle (1987), who found that language-disabled ninth graders' knowledge of derivational morphology was equivalent to that of normal sixth graders, following similar patterns of mastery of orthographic and phonologic rules, but their spelling of derived forms was equivalent to that of fourth graders. The ninth graders were significantly more apt to spell derived words as whole words without regard for morphemic structures than even the fourth graders. Because the spelling errors were phonetically acceptable, it was suggested that misspelling could not be attributed solely to poor knowledge of phoneme-grapheme correspondences. In examining fourth, sixth, and eighth graders' knowledge of derivational morphology and spelling ability, it was found that it was easier for students to analyze morphemic structure to get at the root than to go from the root to the derived form; the latter depends on syntactic and semantic constraints placed by the sentence frame and on lexical idiosyncrasies. Derived performance increased dramatically with

age. The effect of the phonological shift was especially pronounced in a derived subtest

(Carlisle 1988). In examining linguistic abilities and spelling proficiency in

kindergarteners and adult poor spellers, Liberman et al. (1985) concluded that in addition

to difficulty with phonology, adult poor readers performed poorly on morpheme analysis

tasks, making errors with inflectional and derivational endings. Rubin, Patterson, and

Kantor (1991) compared morphological development and writing ability in normally

achieving second graders, language disabled second graders, and that of adults with

normal I.Q. whose single word reading performance ranged from 1.6 to 7.6 and who were

enrolled in a literacy program. The normally achieving second graders performed

significantly better than the adults on spontaneous writing; the two groups did not differ

on the morpheme analysis task, with both performing significantly better than the

language-delayed second graders. The conclusion was that 'morpheme use in written

language yielded very similar patterns to the measures of both implicit and explicit levels

of morphological knowledge in spoken language' (p.232).

In a comprehensive review of research on morphological awareness, Fowler and

Liberman (1995) concluded that many of the difficulties the poor readers have with

morphological awareness may stem from their underlying difficulties with phoneme

awareness. In an examination of the ways in which morpheme knowledge affects the

reading process, Elbro (1996) documented that a reader's inability to take in a lengthy

word with a single fixation requires pre-lexical composition by which potential

morphemes are separated. In his study, 26 dyslexic teenagers (reading at least three years

below their chronological age 'despite normal IQ and receiving remedial instruction),

showed significant weakness on oral morphemic tasks when compared to second and

third graders matched on reading age, and also when compared to normal teenagers

matched on chronological age and IQ. For example, when asked to count the number of

words in orally presented sentences, dyslexics performed poorly, tending to miss function

words (grammatical morphemes). They also had difficulty with tasks involving reversing

elements of compound words and providing a whole word that contained an unusual

morpheme, which was provided for them (on hearing "whelm," responding with

"overwhelm"). Further studies (Elbro 1996) indicate that dyslexic adolescents may use

recognition of root morphemes as a compensatory strategy in reading of both single

words and coherent text, that it is possible to train students to improve morphological

awareness independently of phoneme awareness, and that such training has positive

effects on reading of coherent text on spelling accuracy and morphologically complex

words. Smith-Lock (1995) also documents lack of morphological awareness as prominent

among language learning disabled students.

Research on Multisensory Programs

California schools are struggling as much as any other schools in the United

States today. Showers, Joyce, Scanlon, and Schanublet (1998) conducted an intervention

study in a low performing high school where 59% of the 9th graders were reading below

the 50th percentile. These researchers found the use of multidimensional approaches was

important to reach these students. Engaging students in a direct, systematic, structured

approach while modeling metacognitive skills was key to the success of the program.

Students doubled their gains in reading performance during this intervention program.

Simpson, Swanson and Kunkel (1992) did a study using multisensory reading instruction for learning disabled juvenile delinquents in an attempt to remediate and have an impact on the recidivism of the population. The findings show the treatment group using the Orton/Gillingham based program made significant growth in reading and had significantly lower rates of recidivism than the comparison group.

The Multisensory Reading and Spelling program was developed by Wickerham and Allen (1993). This program was based on the Orton/Gillingham approach, specifically the Alphabetic Phonics curriculum developed by Cox and an interdisciplinary team at the Texas Scottish Rite Hospital Language Laboratory in Dallas, Texas (Waites & Cox, 1969; Cox 1984; Cox 1985). As a sequential, multisensory curriculum for teaching the language skills of reading, writing, spelling and verbal expression, it emphasizes phonics, linguistics, and the structure and the science of the English language. In addition, emphasis is placed on composition, grammar, comprehension and vocabulary development. The purpose of this program is to give students performing below level the strategies necessary to allow them to function in a college bound environment.

Previous research assessing the effectiveness of the Alphabetic Phonics approach suggests that it can lead to significant gains in both reading and spelling ability for children with learning differences. For example, Frankiewicz (1984) examined the progress of learning disabled middle school students participating in an Alphabetic Phonics program over a three year period. The results showed that these students demonstrated considerably more growth in reading and spelling ability than would be expected of learning disabled students not receiving the Alphabetic Phonics intervention.

In fact, the growth in reading and spelling ability of students receiving Alphabetic Phonics instruction was at or above the growth expected of students in a normal population over a three-year period. Vickery, Reynolds & Cochran (1987) found that elementary school children receiving Alphabetic Phonics instruction improved significantly over baseline reading and spelling scores in both remedial and nonremedial classes. Furthermore, there was a tendency for reading and spelling scores to increase with the number of years the students had participated in the Alphabetic Phonics program. Hutcheson, Selig, and Young (1990) demonstrated that learning disabled elementary, middle, and high school students all had significant gains in reading and spelling ability after receiving Alphabetic Phonics instruction. Other studies have found similar results (Brightman, 1986; Guerico, 1987). Thus research has demonstrated the effectiveness of the Orton/Gillingham based Alphabetic Phonics approach in helping learning disabled students to improve their reading and spelling ability.

Summary

Some children experience extraordinary difficulty in learning to read, falling behind their peers early and sometimes permanently. Juel (1988), for example, found that children who read poorly at the end of first grade were likely (.88) to remain poor readers at the end of fourth grade. In the same vein, Scarborough (1995) reported a correlation of .72 between reading scores at the end of second grade and reading 6 years later. The relative stability of achievement standing following 1 or 2 years of reading instruction is a serious concern, because once these children fall behind, their chances for full recovery

diminish (Stanovich, 1986). Remedial assistance, if it comes may be too little and too late to correct these individuals' reading trajectories (Puma, Jones, Rock, & Fernandez, 1993). This situation has given rise to efforts at early intervention that better prepare children for the first stages of formal reading instruction, perhaps preventing or reducing problems in reading acquisition and their deleterious consequences.

However, many children continue in their academic careers falling behind and frequently remain behind. Intervention strategies are available for those students even if federal and state funding is not focusing on older students. Finding ways to help students change the downward trajectory of poor grades translating into high dropout rates is important. This research project focuses on middle school students and a specific intervention designed to work with struggling readers. Ameliorating spelling errors in written composition is the approach taken to disarm the feelings of failure and engage them as risk-takers.

CHAPTER II

Methods

Introduction

In this chapter, the methods are described which were utilized for this grounded theory study of developmental spelling and writing in middle school students. 'Grounded theory methodology' was developed by Glaser and Strauss and can be described as a general methodology for developing theory that is grounded in data systematically gathered and analyzed' (Strauss and Corbin, 1994, p. 273). Grounded theory, also known as, the constant comparative method requires looking at the data and testing an emerging theory constantly against the data collected and interpreting the data as a basis for theory generation. This method seeks to verify the hypotheses that emerge throughout the study. Development of grounded theory requires a constant interaction with the data and asking questions to generate theory and relate the concepts that emerge from the data. Coding procedures defined by Strauss and Corbin (1994) were used to develop theory from the data. Grounded theory provides a procedure for developing categories of information, interconnecting the categories, connecting themes through theory building that emerges through data, building a story that connects the categories and ending with a discursive set of theoretical propositions (Strauss and Corbin, 1990).

Triangulation of the data were used in order to gain insight and understanding into the social phenomenon studied. This technique provided the context to construct meaningful propositions about the social world and, the evidence to construct explanations of the social phenomenon from which they arose (Mathison, 1988). Two qualitative data sources were used to collect the data: a pre and post writing assessment and an interview.

Descriptions of subjects participating in the study, the instruments used in the assessment procedure, along with the research design and the procedures prior to and during testing and the procedures used to measure the research hypotheses are outlined in this chapter.

Contexts of Study

Clear understanding of the contexts of the study in relation to the school demographics and selection of the students and the researcher's prior experiences are explained in the following section. These contexts provided understanding regarding interactions of the study and the delivery of Multisensory Reading and Spelling along with comprehension and written composition strategies.

The School

The school was set in a rural section of a metropolitan school district. The demographics for the entire school population are 83% black, 11% white, Hispanic 3%,

American Indian 2%, Asian 1% with 91.7% receiving free and reduced meals. Selection of the school was based on access to the school and the researcher's familiarity with the faculty and staff. Performance on the Iowa Test of Basic Skills, 2001, indicated sixth grade students were reading at the 34th percentile according to national norms.

Researcher's Role

The selected school was opened to participation and was selected to participate in the study because the summer school configuration provided a viable format for instruction of the Multisensory Reading and Spelling program. The first two weeks of the summer school session were taught by the researcher using the *Multisensory Reading and Spelling* program (Wickerham and Allen, 1993).

The role of the researcher was one as a participant-observer and involved the interaction of the interviewee and the interviewer for questioning purposes (Neuman, 1991). Behavioral situations such as nonverbal communications with expressions, use of gestures or body movement or contortions were noted on the interview sheet for each participant. Any such movements or expressions that revealed conflicting messages, discomfort with a particular question or possible confusion were observed. Patton (1990) tells us 'good interviews lay open thoughts, feelings, knowledge, and experience not only to the interviewer but also the interviewee' (p.353). Brogdan and Biklen (1998) offer two traditional guidelines when working with human participants. The first is that subjects enter the project voluntarily with full understanding of the risks and obligations involved. The second is that risks should not be greater than the gains. Smith (1990) believes ethics

in qualitative inquiry have to do with the personal and professional lifestyle of the researcher. In qualitative inquiry, the interviewers are the instruments used to collect data. Merriam (2001) reminds us that as humans we make mistakes and miss opportunities.

The first characteristic to be rated is 'tolerance for ambiguity' (Merraim, 2001, p. 20). There is no step-by-step procedure for qualitative research. The second characteristic to measure is "sensitivity" or being highly intuitive. The researcher must be sensitive to the situation, the context, the setting, and all aspects involved. Timing is important and the researcher needs to be aware of the point of saturation with the interviewee. The third characteristic is being able to communicate well, being empathetic and warm to gain the trust of the participants. Erlandson, Harris, Skipper and Allen (1993) also recommend using pleasantries and icebreakers to give the respondent time to warm up and a chance for the interviewee to relax and talk about nonthreatening topics.

Erlandson et al. (1993) state that respondents are key figures in an interview. They are powerful figures because their perspective contributes greatly to the development of insight and understanding the phenomenon.

While qualitative researchers are aware that their participation does bring about changes, Merriam (2001) suggests that they 'identify those effects and account for them in interpreting the data' (p. 91).

Setting and Participants

A description of the classroom and the students participating in the study are in the next section. A brief description of the theoretical framework is also included here.

Classroom Context

The summer school setting was designed specifically for students failing language arts and math the previous school year. Students wanting to be promoted were required to attend summer school classes. There were no specific guidelines for the summer school teachers with the exception that students attend the required time in class, forty-five hours and receive passing grades.

The classroom used for the sixth grade students was typically a math class during the regular school year. There was not a set curriculum for this summer session leaving the researcher free to use the curriculum and materials being researched. The only materials provided by the summer school program were paper and pencils for the students and chalk and an eraser for the teacher.

The basal reader, Prentice-Hall series for the sixth grade students, drove the literacy curriculum during the school year. Classes for the middle school student in this school were divided between language arts and reading. Two different teachers taught the subjects with the language arts teacher focusing on the grammar of the language and writing (syntax) and the reading teacher focusing on concepts of higher-level reading instruction (semantics).

The Students

The participants in this study were sixth grade students 11 to 13 years old, attending a summer school program. The students in the study were 98% African-American and 2% Hispanic with 100% of the students receiving free meals. This study did not represent the full population of the school. Many of the student's parents attended this same school as children, representing a relatively stable population. Selection of the participants was limited to the students required to enroll in summer school because of failing language arts during the previous school year. The majority of the students participating in the study were required to attend summer school in order to be promoted to the seventh grade. Several of the students were allowed to attend the summer school program for enrichment purposes. Permission to conduct the study was obtained from the director of the summer school program and the Oklahoma State University Institutional Review Board (IRB). The IRB required that consent forms from the parents and students be obtained before any research began. For examples of the forms and permission letters see Appendices A and B.

Students were informed they were free to withdraw from the study at any time without penalty. Students would not incur a penalty if they chose to withdraw from the study. Their summer school grade would not be affected by this study. The students attending summer school were required to participate in the *Multisensory Reading and Spelling* program (Wickerham & Allen, 1993), but were not required to participate in the writing assessment or interview as data collected for the study. Only those participants who returned signed parental permission forms were part of the study.

All students returned the signed permission slips. Two groups of students, totaling 16, rotated between the math and language arts classes. Time spent in class was ninety minutes for each group of students. The first group of students attended class from 9:00 a.m. until 10:30 a.m. at that time the students from the math class rotated into the language arts class and the language arts students rotated into the math class until classes were dismissed at 12:00 p.m. Students attended summer school for 30 days for a total of 45 hours of instruction. If a student was absent more than three times he/she was dismissed from the summer school program. These guidelines were established by the director of the summer school and were beyond the researchers control. There were summer school classes for students in seventh and eighth grade occurring simultaneously, but they were not a part of this study.

Adams (1990) theoretical frameworks of four processors were reinforced throughout this research project. The focus on the foundational skills of phonology and orthography were continually reinforced to strengthen the basics of reading. The context and meaning processors were then engaged at levels appropriate for student learning. Setting the stage for the students to discover the deeper meaning of words being decoded and then applying the meaning to the context of the story or sentence being examined. Students were encouraged to discuss and explore the meanings of phrases and themes as they read connected text.

Data Collection

The data collection process is described in the following section. The various

assessment tools will be described along with the procedures used to administer these

tools.

Collection Process

The intervention had sixteen participants, but 3 of the students did not participate

in the post data collection. Consequently, a total of 13 sets of student data was reported in

the findings with 10 students interviewed at the conclusion of the intervention. The

participants received 45 hours of intensive instruction in Multisensory Reading and

Spelling. They fully engaged in reading and discussing the novel *Tuck Everlasting*

(Babbit, 1975) and written response to the discussions. The students attended class 5 days

a week for 30 days with 90 minutes of instruction resulting in 45 hours of training.

This study required a pre and post writing assessment using standardized

conditions and an interview with 10 students participating in the intervention. Each item

contributed to both theory development and to data support for analysis.

Spelling Assessment

A descriptive error analysis of spelling was done on each writing assessment

based on the stages of spelling development (Bear et al, 2000). The pre writing

assessment and post writing assessment were compared for growth in the stages of spelling development. A constructive perspective includes spelling development as related to reading and as an integral component of literacy development. The spelling errors were recorded on a matrix to identify the different stages the errors represented at the initial and final phases of the study.

Writing Assessment

The writing assessments at the beginning and end of the study were analyzed qualitatively using a matrix to determine if there was a change in the quality and quantity of the writing. A study by Sadoski, Wilson and Norton (1997) guided the selection of the writing prompt and the guidelines in the written portion of the research. At the beginning and end of the study a written composition was obtained under standardized conditions adapted from the National Assessment of Educational Progress in writing. This format was used to guide the data collection and maintain a formal process for evaluating student writing. The writing prompts elicited informative writing from personal experience.

The students were asked to 'write about a favorite story so that someone who has not read it will understand what happened'. The students were given two sheets of paper with the following directions on the first page 'You will have 30 minutes to write about the topic that is given on the next sheet of paper. Your finished product will go on that sheet. If you want to write a rough draft, or just write down some ideas, do so on this sheet. Remember only your finished product goes on the next sheet' (Applebee, Langer, Jenkins, Mullis, & Foertsch, 1990, p. 61)

The second page had spaces for the students' name and the date. This task was designed to allow ample time for students to write a quality composition while also engaging in some prewriting.

Quality was defined using a holistic scoring system. The qualitative analysis of writing used was based on Spandel's (2001) holistic scoring system. The scoring system used a five point likert scale (1=unacceptable, 2=unacceptable/some improvement, 3 = acceptable with errors/needs improvement, 4 = acceptable with errors/showing improvement, and 5 = acceptable/meets criteria). All scores were then added for a total score, which yielded, a quality of writing score. The six traits that were taken into account for the quality of writing were content, organization, voice, word choice, sentence fluency, and conventions. The traits are qualities or characteristics to define the level of performance of the writer. The concept underlying the writing traits is to create guidelines for the author to internalize as he develops his own writing style. The six traits were defined by Spandel & Stiggins (1990) as follows:

Traits Defined

Ideas – Clarity, detail, original thinking, and textual interest.

Organization – Internal structure, a captivating lead, logical sequencing, and a sense of resolution.

Voice - Liveliness, passion, energy, awareness of audience, involvement in the topic, and capability to elicit a strong response from the reader.

Word choice – Accuracy, precision, phrasing, originality, a love of words, and sensitivity to the understanding of the reader.

Sentence Fluency – Rhythm, grace, smooth sentence structure, readability, variety, and logical sentence construction.

Conventions and Presentation – Overall correctness, attention to detail, and an editorial touch – along with effective use of white space (layout and formatting) (p.42).

Quantity of Writing

The number of words per passage and the number of paragraphs and sentences per passage were counted for the quantity of writing. This contributed to the study by providing an avenue to quantitatively view the specific number of words being used in student writing.

Interviews

A post interview was conducted with ten participants from the study. Patton (1990) states, 'The purpose of interviewing is to find out what is in and on someone else's mind' (p.278). Merriam (2001) also describes the process of interviewing: 'Interview is necessary when we cannot observe behavior, feeling, or how people interpret the world around them. It is also necessary to interview when we are interested in past events that are impossible to replicate' (p.72). Researchers use one of three different interviewing techniques – the unstructured, the semi-structured, and the

structured interviewing technique (Bogdan and Biklen, 1992). The unstructured

conversational interview is more like a conversation than an interview. The researcher

uses open-ended questions to get the participant to talk about a phenomenon with no real

specific target in mind. It is flexible and often exploratory. Merriam (2001) states,

'Insights and understanding can be obtained from this approach, but at the same time an

interviewer may feel lost in a sea of divergent viewpoints and seemingly unconnected

pieces of information' (p. 75). Researchers may use all three of the interviewing

techniques in one study, but the unstructured technique is rarely used alone. The strength

of this method is that the researcher can tend to 'individual differences and situational

changes' (p. 282). The weakness is that it requires the researchers to spend more time in

the interviewing process as multiple interviews may be conducted. It also requires more

skills form the interviewer than the other two methods. Analysis of data is also more

difficult because it is harder to find patterns in the meandering conversations.

The next interview technique is the standardized open-ended question or

structured approach. Patton (1990) explains that this technique is useful when you have

limited time, can only interview once, as a pre/post technique, or when someone is

entering a program or leaving a program. The interviewee has a set of questions that has

been carefully planned to reduce interviewer effect and to help make the process more

systematic. Patton (1990) gives three major reasons for using the standardized open-

ended technique. These are: 'the exact instrument used in the evaluations is available for

inspection by decision-makers and information users; variation among interviewers can

be minimized where a number of different interviewers must be used; and the interview is

highly focused so that the interviewee time is carefully used (p. 285).

The semi-structured approach as described by Patton (1990) is one where the researcher comes with a preplanned list of questions or issues. The interviewer can strike up a conversation regarding a specific issue or question. The researcher can ask the same questions and cover the same issues with each participant. This helps the researcher maximize time and makes it systematic across participants. Merriam (2001) calls this style of interviewing the semi-structured interview. In this method the questions might be all flexible or a mixture of structured questions and flexible questions. Specific information may be needed and more structured questions would be asked with the rest of the interview having flexibility and openness for probes and follow-up questions to get the individual viewpoint of each participant.

A semi-structured interview consisting of 9 questions was used to gather data from 10 randomly selected students who participated in the study. Originally there were 16 students in the study. Only 13 students participated in the pre and post writing. Ten randomly selected students participated in the interview in accordance with the approved IRB. Divergent questioning or probes are adapted in this interview style allowing pursuance of certain thoughts or explanations (Lincoln and Guba, 1985). A matrix organizing the findings is in Appendix D.

Random sampling was used to select the 10 students to be interviewed from a total of 13 who participated in the full study. Each student name was written on a sheet of paper and placed in a container. Five names were drawn from each group of names and these were the students interviewed. A simple random sampling is described in Gay and Airasian (2000) as selecting individuals from the complete population being studied on a purely chance basis.

Field Notes

Through informal discussions the teachers previously expressed concerns about the low student literacy levels. When the teachers were offered the opportunity to participate in training and learn about how to fill in the gaps for these students they welcomed the chance. Many of the language arts and special education teachers from the school selected for the study attended training classes similar to the intervention program over the past two years. Several teachers at the middle school were trained in the *Multisensory Reading and Spelling* (Wickerham & Allen,1993) program, but were unable to fully implement it in their classrooms. These teachers explained they were required to teach certain objectives and they did not have the time to go back and explain the foundational information many of the students were missing.

During the first two weeks of the summer school class the researcher was the teacher for the two intervention classes. A rapport was built between the researcher and the participants over the first two weeks of the intervention. The structure and procedures of the Multisensory Reading and Spelling curriculum were established and initial resistance to using the program was overcome. Pre-testing was administered during the first week of the session. A schedule was followed using *Multisensory Reading and Spelling* (Wickerham & Allen, 1993) for 50 minutes each day followed by 40 minutes of reading and discussion of *Tuck Everlasting* (Babbitt, 1975), or working on written composition. The reader-response discussion and writing focused a great deal on the writing style of Babbitt. Many of the students were resistant to writing at length or in

great detail. It was easier for the students to observe the writing styles of Babbitt and use this information to model the traits of a good writer.

A language arts teacher previously trained in *Multisensory Reading and Spelling* (Wickerham & Allen, 1993) taught the final four weeks of the summer school. The transition was difficult for the teacher and the students. After settling down to work with a new teacher the class schedule was maintained with the researcher visiting the class once or twice a week to observe. Students expressed excitement about reading the novel saying, "it was the first time to read a whole book." *Multisensory Reading and Spelling* was the main focus of instruction with less attention devoted to the written expression component. A greater emphasis was placed on completing the book and discussion to develop comprehension.

Data Analysis

Analysis of qualitative data is an ongoing process and search for general statements and relationships among categories of data. With a basis in grounded theory (Glaser & Strauss, 1967), the source of generating ideas and themes comes from the data; this discovery method allowed for expansion, links and interrelationships of emerging themes. By continually analyzing notes, formulating concepts and using the literature to scaffold new ideas the constant comparative method provided an avenue of insight to contribute to existing theory.

The research questions explored ways to determine the effectiveness of the intervention program, consequently, the focus of the study sought to specifically

determine the effectiveness of the newly learned spelling concepts and their application in contextual writing. All students in the intervention group agreed to participate in the study and returned signed permission slips from their parents.

From the third through the sixth week a public school language arts teacher previously trained in *Multisensory Reading and Spelling* (Wickerham & Allen, 1993) taught the language arts classes. Students received 45 hours of instruction during the summer school program. Fidelity to the program was attained through the use of an experienced teacher previously trained and demonstrating knowledge of implementing the *Multisensory Reading and Spelling* program. *Multisensory Reading and Spelling* was taught for 50 minutes of each class period and then students alternated between reading and discussing *Tuck Everlasting* (Babbit, 1975) using reciprocal questioning (Beck & McKeown, 1984) strategies and developing writing skills. The reciprocal questioning was used as a daily practice during discussion of the text.

Reciprocal questioning aided the students in thinking about their responses and their questions as they interacted with each other during daily discussion. Cazden (1988) classifies the pattern that teachers assume when talking with students during discussion as the IRE, the teacher initiates a question (I), student responds to the question (R) and the teacher evaluates the response (E). This is a natural stance for a teacher in discussion groups, something that has been modeled for students everywhere year after year. In an attempt to change the IRE process students were taught to use reciprocal questioning strategies for discussion time (Beck & McKeown, 1984). Question starters were written on a piece of paper and students randomly selected a question starter and completed the question in relation to *Tuck Everlasting* (Babbitt, 1975) for the group to respond. The

teacher modeled and assisted students in the discussion. Over time the scaffolding and modeling was decreased to allow students to control the discussion. Practicing this new strategy to increase time for student talk was difficult for the students. Such great emphasis has been placed on teacher control it is challenging for students to take on the role as the leaders in discussion.

Teacher guided discussion focused on the author's writing style in *Tuck Everlasting* (Babbitt, 1975) to launch the writing process and focus on descriptive writing. Students were encouraged to write without focusing on correct spelling, but developing their own writing style. Misspellings in student writings during the intervention were not marked as incorrect. The information gained from the misspellings was used to guide instruction in the daily lessons.

Multisensory Reading and Spelling curriculum included explicit, systematic, instruction in: phonemic awareness, alphabet/dictionary skills, reading concepts, spelling, reading comprehension, vocabulary development, multisensory grammar, and written composition all critical components of an effective literacy program. The structured presentation of the reading/spelling information in the daily lessons was designed to coordinate information with the standard language arts curriculum. A daily lesson consisted of ten parts starting with a review of information that has been previously taught, introduction of new information and then practice applying the newly learned information through reading and spelling. Specifically, the structured fifty-minute schedule consisted of these ten parts:

Visual Deck – Students respond to Visual Deck cards by naming the letter and the key word and sound associated with the letter. The Visual Deck is aligned to reinforce spelling concepts.

Auditory Deck – Students echo the sound dictated by the teachers and write the letter(s) that represent that sound. The sounds are organized by spelling patterns.

Visual Review – Students read a list of words that illustrate a pattern or rule taught in the previous lesson, or a spelling activity related to the previous lesson is reinforced.

Auditory Review – Students repeat dictated words and isolate sounds to spell or identify checkpoints for applying the pattern or rule. Usually the focus is on the pattern or rule from the previous lesson and prepares the student for the spelling review.

Spelling Review – Students spell seven words that illustrate the spelling concept taught in the previous lesson. Two sentences are dictated focusing on the same concept. They then spell seven words for a cumulative review of all previously taught lessons.

New Material – Discovery teaching and multisensory techniques are used to present kinds of syllables, syllable division patterns, and spelling rules and patterns.

Visual Practice of New Material – Students read lists of words which illustrate the new material.

Auditory Practice of New Material – Students repeat dictated words, isolating the sounds to spell or identify a checkpoint for a rule or pattern.

Spelling Practice of New Material – Students spell seven words illustrating the new material.

Review – The students briefly restate the newly learned material.

The components of the lesson are presented in the same order daily. There are a total of 100 lessons in the Multisensory Reading and Spelling curriculum. Every fifth lesson is a review and does not follow the same schedule.

Spelling Analysis

Analysis of the spelling was assessed through the student writings. A matrix of the stages of spelling development (Bear, et al, 2000) was created to graph the changes in development from the beginning of the study to the end of the study. Stages of spelling development focused on several areas, the Letter Name stage, the Within Word stage, and the Syllable Juncture stage. The participants received explicit instruction in spelling strategies in these areas. There was significant and continuous discussion of spelling abilities. Therefore, students developed a metacognitive awareness of their own abilities and their potential for growth.

Writing Analysis

The compositions were scored by the researcher and a colleague who used the six trait-scoring guide for writing (Spandel 2001) on a likert scale. The two raters worked together after establishing interrater reliability. Interrater reliability was established prior to the scoring of the writing assessment. The researcher and a colleague worked on a previous writing assessment, for another project, using the same six trait scoring guide designed by Spandel (2001). To assess quality the raters were trained to use the scoring

system developed by Spandel (2001). This scoring system used a 1-5 likert scale for an overall rating that took into account ideas, organization, voice, word choice, sentence fluency and conventions. A matrix was created for scoring purposes and the raters scored the pre writing and post writing individually. The raters scores were analyzed using a Spearman Rho correlation coefficient finding interrater correlations between independent scorings at $r = .83, p < .01$ for quality scores. Any discrepancies between raters were discussed and reconciled to obtain 100% agreement in the final analysis.

Each rater read the written composition and scored the six traits separately, using the descriptions defined earlier, on a 1-5 point likert scale. The total scores were then calculated for the quality score.

Interview Analysis

Interviews were tape recorded and notes were taken by the researcher. The participants were informed of the procedure before starting the interview process. The tape recordings ensured that everything in the transcription was accurate and notes were taken to ensure observations were not overlooked. Theme development grew from the participant's own words across interviews. The interviewer followed the questions as a guide, but probing questions allowed for divergent and interpretive ideas. For example, if a student suggested an idea that was divergent from the interview a more conversational path was taken during the process. As Bogdan and Taylor (1975) state, the interactive, face-to-face encounters allow for gaining insight and information from a participant as it relates to their lives, experiences or situations. Stenhouse (1984) does not advocate using

structured interviews in qualitative research because this method does not lend itself to a conversational approach; however, the semi-structured allows for more interjection by the interviewee, thus, questions acted as a guide for other interactive probes related to the student's expressed perceptions. The interview was necessary for gathering information which provided data, observations, and interpersonal, social and cultural aspects of the environment (Lincoln & Guba, 1985).

Glaser and Strauss's (1967) constant comparative method was used for analyzing data. This research methodology allowed data to be compared. Inferences drawn from the spelling and writing development and student responses to the interview questions permitted for comparison of categories and emerging themes. Consequently, these data were triangulated to analyze themes across cases thus building on the theory.

Research questions were used as an initial point to write questions for the semi-structured interviews. The students' own words were then used as categories of thought and were summarized as key words or major headings (Lincoln and Guba, 1985). Qualitative analysis software was used to explore across and between cases. Clusters of information, subcategories, causes and consequences, interactions and conditions were considered for relationships, links or extensions of major themes (Neuman, 1991). The process of refining or looking for new themes or similarities was done four times until, upon the fifth examination, no new information was revealed. The process of sorting, evaluating, reevaluating and analyzing data resulted in a set of themes which presented participants' views. This reconstruction procedure allowed for methodological soundness and the establishment of credibility (Earlandson, et.al., 1993). Raw data (writing

assignments, interview notes and tapes), data analysis products (printouts from the computer program) were records which enhanced the credibility and dependability.

A triangulation matrix was created from the overarching themes that were observed through the analysis of the interviews and reinforced in the writing process. This matrix was used to clarify the information and guide the development of the grounded theory.

Data Analysis Procedures

An explanation of the design and the building of the grounded theory relative to this study were integrated into the design of the study. The constant comparative methodology is explained in relation to the research questions and the instructional intervention.

Design

This study was designed to explore new theory related to spelling and writing with struggling middle school students. Constant comparative methodology was used because the research questions lent themselves to the development of new theory related to the instructional model. A triangulation of the data resulted from the use of multiple data sources as a way to add trustworthiness to the findings and see patterns across and between cases. A between methods triangulation strategy was used to combine the methods of data gathering in order to find the greatest strengths of each instrument and

overcoming the unique deficiencies (Denzin, 1978). The teacher teaching the students for the majority of the study had participated in 42 hours of *Multisensory Reading and Spelling* (Wickerham & Allen, 1993) training, which was the curriculum under observation. This study was restricted to the population assigned to each classroom in the target school.

The qualitative assessment of spelling development was collected from the writing assignments. The written compositions were also evaluated for quality and quantity and an interview was done with 10 of the students at the end of the intervention.

The writing was evaluated using a 5-point likert scale. Then each set of scores was added to assess the quality of writing. The words from each story were counted for the quantity of writing. One writing sample, per student, per class, at the beginning and end of the study was analyzed by using a matrix to determine if spelling information was applied to the writing process and if there is a change in the quality and quantity of the writing. There were post interviews with 10 students selected randomly from the intervention classes. The interview asked students about perceptions and shifts in perceptions regarding the intervention. The interviews were also analyzed using the constant comparative method. The interview instrument can be found in Appendix C.

CHAPTER IV

Results

Introduction

The purpose of this study was to see if the instructional model posed, namely, Multisensory Reading and Spelling could contribute new theory to existing spelling models. Also, the research sought to gain understanding to determine if it was possible to help students close the achievement gap between themselves and their grade level peers by participating in an intensive, explicit, multisensory intervention designed specifically for struggling students at the sixth grade level and above. The focus was specifically on spelling instruction and the assimilation of knowledge of spelling to written composition. Student perceptions about spelling and writing and the analysis of data are discussed in this chapter. Results of the data are discussed and analyzed according to each theme which emerged from the data.

Thirteen students participated in a pre and post writing assessment and 10 students in the intervention participated in an interview. The data were examined for student application of writing concepts, progression through the stages of developmental spelling in struggling middle school students and student perceptions about spelling and writing. The interviews were analyzed to explain phenomena situated in categories and

their relationships. The theoretical framework that served as the foundation for this research, Adams (1990) processing model was confirmed during the study. A further dimension of the processing model evolved during the research emphasizing the importance of automaticity and fluency in the reading and writing process. An understanding of this further theory was clarified by using the concept of grounded theory. These 3 pieces of data, student pre and post writing, the 10 interviews and analysis of developmental spelling are reported in this chapter, linked to the literature and then were triangulated to determine a grounded theory from the emerging concepts.

Students in the study were required to participate in summer school in order to advance to seventh grade language arts class in the Fall semester. These students were typically performing two to three years below grade level expectations in reading, spelling and writing according to the principal of the school where the study was implemented. Students were asked to respond to a writing prompt to access stages of spelling development in written composition along with the writing abilities of all participants at the onset and again at the conclusion of the program.

Analyzing Levels of Developmental Spelling

Evaluation of spelling errors and the application of new information regarding spelling with low performing middle school students in a 6-week intervention determined the progress of individuals in the program. Progress was measured by a decrease of spelling errors at lower levels of stage development and an increase of words used at higher levels of spelling development. A matrix was designed to analyze the spelling

errors pre and post writing using the Bear et al. (2000), definitions to categorize the different stages of spelling development. Understanding and making use of newly learned concepts was demonstrated in stage like progressions which shared important conceptual dimensions. It is an advantage to have knowledge of the stages of spelling to assess developmental growth and extend student learning at the appropriate level. Understanding these stages and knowing what to teach to help students progress to the next level sets students up for success in school. Continually adjusting instruction based on students daily work aided the use of appropriate intervention strategies. Through this analysis different concepts and areas of need were identified and targeted throughout the intervention. The results of the stages of spelling development are explained in relation to the research questions guiding the study.

After examining the narrative writing by the students spelling errors were classified as falling between two stages of spelling development 1) the within word stage and 2) the suffixes and affixes stage while occasionally moving down or up into the letter name-alphabetic stage or the derivational constancy stage respectively. Moving between stages of development is common (Henderson, 1981) when students are learning about the structure of the language and the depth of the English orthography. There was continual movement between stages because nothing is constant in the learning process (Bear et al., 2000). Students occasionally moved down to an even earlier stage known as the letter name-alphabetic stage (Bear, et al.) indicating that students, even at middle school, have a very limited knowledge of the English orthography.

Letter Name-Alphabetic Stage

Over half of the students had some type of error at this stage of spelling development at the beginning of the study as demonstrated in their writing. Different errors occurring at this stage included, difficulty discriminating sounds based on the point of articulation, substitution of vowel sounds, preconsonantal nasals omitted, and consonant substitutions.

The following errors these students made in their writing showed a number of characteristics demonstrated in the letter name stage of development. Students relied upon the position of the mouth, point of articulation, to help them determine how to spell a corresponding sound. Student errors observed in the prewriting assessment: WHAN for when, WERE for where, CAP for kept. (Spelling errors are indicated in upper case through out this paper.) If a student was saying the word 'when' over and over in his head and then trying to figure out which letter would best represent the short /e/ sound it was not unusual to see a student mistake the spelling with a short /a/ (Moats, 1995). This is best demonstrated by linguists who have developed a vowel chart to understand the movement of the mouth and the position of the mouth to see how closely related the short /e/ and short /a/ sounds feel when pronounced. The slight movement of the mouth is elusive and some students need specific instruction or they may continually struggle with the discrimination of the vowel sounds and the location of the sounds on a continuum. Vowel errors represented a substantial proportion of student's spelling errors (Read, 1975; Treiman, 1993). Treiman found that children frequently substitute vowels with similar phonetic features as shown in the examples from this study.

Other examples of errors found at this stage include, student substitutions of vowel sounds: BUT for bit, TANT for tent, and SUVT for shoved. A number of students are fortunate enough to perceive these slight variations without any instruction or very subtle metacognitive processing. Spelling for some students transitions from one stage to the next through exposure to massive amounts of text and support in the spelling and writing process.

Preconsonantal Nasals

Omission of preconsonantal nasals is another type of error occurring in student spelling at this stage of development. Nasals are sounds that are produced through the nose. The sound of /n/, /m/, or /ng/ before a consonant as in the word friend, the /n/ is a preconsonantal nasal. The word, friend, in particular is difficult to spell and students frequently demonstrate a reliance on visual knowledge to spell the word and may write FREIND or FREID instead of friend. Leaving out the /n/ in friend is a common error in the letter name-alphabetic stage of spelling that is rarely exhibited in the within word pattern stage and beyond. That is not to say that students will not struggle with the IE spelling because there is no phonological information to assist the writer in the correct spelling of the vowel sound. This unpredictable configuration of letters to vowel sounds is problematic in spelling. Other examples of an omitted preconsonantal nasal is WIDOW for window or FIGER for finger, two students struggled with the omission of the preconsonantal nasal.

Consonant Substitution

A third error that appears in the letter name category is the consonant substitution. The point of articulation of a consonant sound may not provide a clear pathway for the speller. For example, the sounds /b/ and /p/ are articulated in the same place in the mouth. The only discriminating feature is the voicing of the /b/ sound. If a student is trying to produce one of these sounds but cannot say the sound out loud the /b/ and /p/ could be easily confused at the phonological level rather than the visual level. One student wrote GRAP for grab and another wrote CHRAIN for train. The CHR for tr is known as an affrication of sound according to speech pathologists, the mouth is in a rounded position to accommodate the production of the /r/ sound following the /t/ sound, this can cause confusion for the individual relying solely on phonological processing because of the close relationship of the /ch/ sound also produced by the rounding of the lips. These are errors that are most frequently seen in the writings of young children when they are heavily dependent on the production and point of articulation of the sound in the mouth. The students in this study at the 6th grade level were still struggling with some of these errors which should rarely occur after 2nd or 3rd grade.

At the close of the study only two of the students had two or more errors in this stage of development. There was a decrease in the number of errors in this stage of development by the end of the study suggesting a transition into higher stages of development.

Within-Word Pattern Spellers

Students performing at the within word stage made spelling errors when representing long vowel sounds in words, substituted or omitted letters in a schwa syllable, and struggled with low-frequency long vowel words when trying to spell Latin suffixes, sion – shun, phonetically (Bear, et. al, 2000). Student errors from their writing of connected text were as follows: the spelling of FUE for few, this error does show knowledge of the fact that English words do not end in u and a pattern for spelling /ū/. A limited number of single syllable words end with the long /oo/ sound that are spelled –ew as in dew, new and pew. Another characteristic of the within word stage is the use of a vowel spelling showing phonetic detail. Students relied on phonological information to achieve an orthographic representation of the long vowel sounds. More errors at this stage occurred in the final writing assessment showing an increase in the use of words at a higher level of spelling development. Students demonstrated the characteristics of this stage in their writings with these spellings: MOURE – more, GOUST for ghost, HAED for had, RACK for rock, SAD for said. These are some of the interesting spellings representing the level of student knowledge at this time.

Syllable Juncture Stage

The syllable juncture stage is the stage of spelling focusing on inflected and derivational endings, doubling a consonant or dropping the silent e when adding a suffix.

Consistent student errors were as follows: SUNNEY for sunny, STABED for stabbed, TRYIED for tried, HAPILY for happily, SPENTED for spend, MADER for madder and DIVEN for diving.

Visual Errors

Visual errors were another phenomena observed in the contextual writing assessment. Orthographic memory has been shown to be a strength in older students while there are serious deficits in the phonological domains (Greenberg, Ehri, Perin, 2002). Students may not know the exact spelling of a word but will write an approximation of the word based on orthographic knowledge or memory. Several examples of these phenomena are WORNG for wrong, MOIVE for movie, SIAD for said and JUTS for just. Students possess an image of the word but have a deficit when trying to replicate from visual memory. They have difficulty recalling the exact order of the letters and have few resources to use to help with the correct spelling and accessing the phonological processor is a foreign concept or strategy rarely used. Spelling production requires the use of orthographic, phonological, and morphological knowledge aided frequently by context to determine how phonemes in words should be visually represented with symbols.

The errors made by the students were further examined to see if they were at higher stages of spelling development at the post writing. The students errors at the within word stage and in the syllable juncture stage were more common than the errors in the letter name stage in the final writing assignment. Students made spelling errors at the

higher level developmental stage of the spelling errors did increase. Students were making fewer mistakes at the lower levels of spelling development showing growth in their knowledge of spelling.

Writing Traits

Student writing, on average, showed the same number of words spelled incorrectly on the student pre and post writing. In the prewriting assessment the students wrote an average of 164 words with 10 spelling errors. In the post writing the students wrote an average of 121 words while maintaining 10 errors per student.

The 6 writing traits analyzed by the 2 raters showed no change from the initial writing assessment to the final writing assessment. The 6 traits used to assess the quality of the writings were measured using a scoring system developed by Spandel & Stiggins (1990). The scoring system used a 1 – 5 scale for overall rating that takes into account ideas, organization, voice, word choice, sentence fluency and conventions. "The system for examining these traits was developed specifically for public school teachers and their students for purposes of large-scale assessment' (Spandel & Stiggins, 1990, xi-xii, 29).

Ideas

The ideas generated for the writing were based on movies or books and a few personal experiences the prompt was open for interpretation. Specific areas analyzed

were based on a main thesis, or story line with supporting ideas and details. Several

introductory sentences follow:

"Ice Age is a movie about an animal that that was left by his family and tried to

find them but found two big animals about to eat a plant the the the animal ate it."

"Once upon a time there lived a king named Romeo Smith Sr."

Organization

Student writings were lacking in organization, frequently the writings were only

one paragraph and at times one long sentence. The word choice was limited and students

used the same word for many different meanings and resorted to the word 'stuff' when

unable to be more specific. The sentences were incomplete or run-ons and unstructured.

The students were unable to develop voice for their stories struggling to engage the

reader.

"There were three little boy walking and playing with guns and one boy got shoot

in the head and they had to take him to the hospital and when the boy got they he was

dead because they was playing with guns and now the boys have nobody to play with."

Voice

Student writing rarely reflected the presence of the writer on the page to make the

text lively or to make the reader feel as if he were engaged and a part of the story. The

scores on the pre and post writing were 1 (unacceptable) or 2 (unacceptable/some

improvement) because the student writing lacked energy and life making it difficult to engage the reader.

"One day my cousin was riding her bike she told me to make a ramp so I rode my bike on the ramp but did not fall but when she did it she fell and start crying so her big sister came out and then I told her to ride her sister bike over the ramp so she said no I'm scared so I said you is a scary cat your sister was not even scared at least she rode over it."

This example was the complete writing describing an event that took place in the life of the writer. While the ability to get the message of the story across is clear the engagement of the reader by using an expressive tone is minimal. The story was composed of one long sentence.

Word Choice

Precision in the use of words and the choice of words was a priority. The struggle with limited vocabulary, vague words and phrases convey only general messages. For example, "So the men broke into the house and got some stuff."

Sentence Fluency

The raters looked for a variety in sentence structure, a sense of rhythm and logic. The majority of the stories were made up of one long sentence or short choppy sentences. Some typical writing samples were short and choppy: 'The day we went skating first me

an my friend we took a bath. And then we put our clothes on and then we ate.' While

some of the students presented their story in one long sentence: 'Once upon a time there

was a master of a horse she was going to have a baby horse and the master and he like

what is wrong with you black beauty and the horse but her hand up and blood was

coming out and they had to get a doctor and the next day the horse had her baby.'

Student writing scores remained between 1 (unacceptable) or 2

(unacceptable/some improvement) for an average overall score in this area of 1

(unacceptable).

Conventions

The raters looked for punctuation, spelling, grammar, capitalization and basic

conventions in writing. The errors were frequent and even to the point of distraction at

times. The spelling errors combined with the lack of punctuation made reading the stories

a challenge. It was repeatedly necessary to reread a sentence to get the gist of the

meaning. An example follows: 'He was talking about Freedom and on Days he went to

his house and he was followed by a nother man so he walk to his apertment a walk in his

house and he came back out and a man had shot him and he fell on the ground an a fue

mintes later the police had arrive at his house...'

This is an example of a long sentence with incorrect word usage, no punctuation,

and lacking in basic conventions for writing. This came from the pre writing assignment.

The student was relating a well known event which helped in understanding the context

of the story being told. The writer was counting on the prior knowledge of the reader to make sense of the story being told.

Overall student scores on this trait received very low scores of 1 for all pre and post writing. The raters worked independently to attain these results.

These comments are relative to both the pre and post writing assignments. There was little or no growth in the area of quality during the study. There was a decrease in the quantity of the post writing assessment.

Interview Findings and Primary Themes

Primary themes emerged from the students own explanations and perceptions of themselves as writers and spellers. Many of the students words were used to classify the themes. Student self-perceptions as spellers and writers and their perceptions of the intervention were recorded.

Ten students, five from each class were randomly selected to participate in an interview at the culmination of the study. The interview was semi-structured with specific questions guiding the processes. The interviews were tape-recorded and notes were taken during the process.

The responses to the questions have been organized around themes connecting notions of spelling, writing and self-perceptions together. These themes developed as the interviews were analyzed.

What Makes a Good Speller?

Students were asked about the characteristics of a good speller and the value of spelling correctly in questions one and three. Student responses were divided into two main groups with one outlier. One-third of the students viewed themselves as good spellers attributing their spelling skills to studying, reading and remembering how to spell the words after seeing them in text and having the ability to sound words out. A typical response from a student follows:

Mary: Will you describe for me someone who you think is a good speller?

Cedric: Me, because I know how to sound it out.

Mary: Tell me a little more.

Cedric: I see the words from reading and I remember them. I know them and I spell them the right way.

Another student supported the statement that he was a good speller because 'I know how to spell good'. More than half of the students used descriptions of automaticity to explain what a good speller does when spelling, having the words flow without thinking about spelling and focusing on the topic. A typical response from this larger group of students was as follows:

Mary: Tell me someone, describe a good speller.

Victor: "Someone that can who really writes real good. They can show that they can write. You can read it real good too. Because they know how to spell and can figure out how to spell. Because they learn how to read and they listen to the teacher. Me, I write sloppy so you can't read it real good.

Mary: Is that to hide spelling mistakes?

Victor: Yes. (With a grin on his face).

Another student described a good speller this way:

Antwone: Umm, they spell, they spell without any problems.

Mary: What do you mean without any problems?

Antwone: Well you know like they just know how to spell. They don't have to

think about it they just write it and it is all right.

How Important is Spelling?

When queried about the value and importance of spelling eighty percent of the students agreed that it was important to know how to spell and to spell correctly. Twenty percent of the students did not think spelling was important and shared the thought that 'people know if you don't know how to spell, people know, and they know you aren't very good.' It was an explanation about observations of other students in their classes and provided some insight into their self-perceptions.

The majority of the students expressed the importance of knowing how to spell especially when looking for a job. Typical responses follow:

Mary: So do you think spelling is important?

Tyronel: Yeah, it is especially important later on when you need to fill out

job applications and you might have to do some writing for a job. People would

know right off if you can't spell. Then how are you going to get hired?

Another insightful student processed the reciprocal relationship of reading and spelling explained it in the following way.

Mary: So do you think spelling and learning to spell is important?

Shaniqua: Yeah.

Mary: Why?

Shaniqua: If you don't know how to spell you won't know how to read and the other way around.

Mary: So you think spelling and reading are closely related?

Shaniqua: Related?
Mary: I mean you think spelling and reading are alike. You know how to

do one so it helps you with the other one.

Shaniqua: Yeah, like that.

Researchers have conducted multiple studies to determine the correlation between reading and spelling (Ehri and Wilce, 1982, Greenburg, Ehri and Perin, 1997; Griffith, 1987, 1991; Jorm, 1981; Juel, Griffith, & Gough, 1986).

My Thoughts on How I Spell

Students were asked how they view themselves as spellers. There was a list of descriptions for students to choose from or they could generate their own description. The different characteristics describing many students were defined in the interview as one or a combination of the following:

Friday Speller – one who makes ninety to one hundred percent on the test and then forgets how to spell most of the words.

Bizarre Speller – you are never sure how to spell a word and may spell it several different ways in one paragraph.

Safe Speller – you only spell with words you know how to spell even when you know a better word to use in the sentence.

Risk Taker – you feel as if you have a good understanding of spelling and even if you are unsure how to spell a word you are willing to try and risk misspelling a word occasionally.

Other – could you describe yourself in another way.

Half of the students viewed themselves as Risk Takers. One student perceived himself to be a cross between a Risk Taker and a Safe Speller.

Cedric: I think I am a Safe Speller and a Risk Taker. I know how to spell pretty good and when I'm not sure how to spell I make good guesses. I can hear the sounds pretty good.

A third of the students viewed themselves as Bizarre spellers. Classifying themselves as Bizarre meaning they never had a good understanding of the spelling system or how it works.

Mary: "Which kind of speller do you think you are?"

Tyronel: "I'm a Bizarre speller, that's me that's what I do".

Mary: "Ok, why do you think of yourself as Bizarre?"

Tyronel: "I know I spell words different ways all the time cause I'm not sure how to really spell them."

The students were quick to identify themselves as one of the preconceived descriptions and none of them wanted to create their own description. Only one student

mixed two of the descriptions to describe himself and one individual viewed himself as a

Friday speller, "because I study and then forget the words the next week".

Is Poor Spelling Okay?

Students were asked if they thought it was okay to be a poor speller. Do people

overlook misspelled words or do they see poor spelling as a negative reflection of the

writer? Over half of the students believed that it was inappropriate to spell incorrectly.

The general consensus of the responses demonstrated the fear of failure or being

perceived as "stupid" if a word is spelled wrong. One third of the students felt like many

people get away with misspellings and no one really cares.

> Tyronel: "People misspell all of the time and get away with it. Teachers hardly
>
> ever count off if you misspell. Sometimes you see signs misspelled signs around
>
> school and nobody says anything. I think it's wrong and it doesn't make people
>
> think or try."

Is Reading More Difficult Than Spelling?

The next issue for consideration was determining which process students viewed

as more difficult reading or spelling and why. Students responded to this question saying

they believed spelling to be more difficult than reading. Sixty percent of the students

thought that spelling was more difficult while forty percent of the students thought

reading was more difficult. When asked to explain their thoughts student answers varied

and made some excellent points showing thought behind the responses. Some typical

responses follow:

In support of reading the students explained their answers.

Mary: So tell me, do you think it is more difficult to learn to read or to spell?

Cedric: Read.

Mary: Why do you think it is more difficult to read than to spell?

Cedric: Because some people can't sound out the words. It is hard to look at the

word and sound it if you don't know what it is suppose to say. Spelling is not so

hard because you can memorize the sound and break it out into syllables.

Mary: So you think it is easier to hear the sounds for spelling the words than

looking at the letters to then figure out the sounds?

Cedric: Yeah, cause it is hard if you don't know.

Responses from students who believed spelling was more difficult than reading.

Davis: Because some people they think they know the words but they pronounce

the words and they kind of mess up on spelling it. They can't hear the sounds in

the words to spell them right.

Antwone: It is easier when you got the letters in front of you. When you try to

spell a word sometimes you can't hear all the sounds. How do you know to use

the letters if you don't know they're there? I get confused.

Sade': Spelling is complicated. You have to think the words in your head before

you write them down.

Victor: When you spell you've got to remember the words and stuff then you

have to sound it out and then spell it out. For reading you just gotta read it off and

keep on going. To write and spell you have to go slower and write neater and stuff, and you can only hear the sounds and it is hard to write the sounds in the correct order.

Student's answers were thought out, even though their explanations were not concise the point being made was clear, the understanding that spelling adds an extra step that is required in order to encode the language. Interview responses confirmed the research studies by Ehri (2000) indicating the high correlation between reading and spelling. Ehri goes on to say that spelling is more cognitively taxing than reading. Spelling places a greater burden on memory recall to produce strings of letter sequences than for readers producing single pronunciations and meanings for written words.

What I Think I Learned From the Program

Students were asked if they learned something new in the intervention program, Multisensory Reading and Spelling. The responses were in two categories focusing either on the technical aspects of reading and decoding or on the transferable information that was gained to improve the skills they have but need to improve.

Typical student responses:

Mary: Can you tell me about anything new that you may have learned during the Multisensory Reading and Spelling class this summer?

Tyronel: Yeah, I learned some stuff about vowels and consonants and syllables and it helped me to remember a lot of stuff I learned in elementary school but forgot. Sometimes I didn't know why they were teaching that stuff in elementary

but now it makes more sense and that class helped me to remember it.

Another student answered:

Mary: So did you learn something new in Multisensory Reading and Spelling this summer?

Victor: Yeah.

Mary: What did you learn?

Victor: About how to – if you slow it down and listen to what they say you can actually understand what they are saying and what the words are and write the letters.

Mary: So, hearing the sounds and knowing the letters that go with those sounds?

Victor: Yeah, like that.

Students were in agreement that some level of learning did occur especially in the area of decoding and encoding. The application was evident in their spelling on the post writing assessment.

My Feelings About Writing

The final element of the interview was to ask how students perceive themselves as writers and what a good writer is able to convey in print.

Mary: Can you describe for me someone who is a good writer? Like what does a good writer do?

Antwone: Yeah, umm, I think, umm, they can write clearly what they are thinking.

Mary: Can you tell me a little more?

Antwone: You know, like they write what they are saying and you know just what

they are saying because they can just put it down. It is hard to do that. Some

people can't write at all. You read stuff and you don't know anything they are

saying. I liked the book we read. We could see the people and what was

happening it all made sense. That is what a good writer does they just make sense

with their words."

Another student felt as if a good writer gets a message across clearly and precisely knowing how to use words effectively.

Mary: Tell me what do you think of when you are talking about a good writer?

Tyronel: A good writer is when you can understand what they are saying. They

like make sense when you read their stuff.

Mary: Is there more?

Tyronel: Umm, it's like they give a clear message. You know what they are

saying cause the words they use help you understand exactly what they are talking

about.

Other comments from this section of the interview included:

'A good writer reads a lot. '

'A good writer writes a lot.'

'A good writer writes good stories that make sense, I can see the pictures in my

head.'

Someone's whose work you enjoy reading because it holds your attention. A person who uses words well. They know how to make it sound right. Like Steven Spielberg, I read one of his books and it was a really good horror book. You could really feel it happening.

Writing for Pleasure

Half of the students stated they enjoyed writing while the other half of the students found writing to be laborious and tedious. Some of the student responses:

Mary: Do you enjoy writing?

Sade': Yes

Mary: How come you like to write?

Sade': Cause, ummm, you can write down what you think about and like write about your life.

Another student:

Tyronel: Yeah, I like to write stories about stuff that makes me mad and then sometimes I'm not so mad about it. Someone told me to do that when I got in trouble before and it helped.

Mary: Thanks for sharing that with me. Is there anything else you would like to tell me about the class this summer?

Tyronel: No, I think that's about all.

Mary: Ok, thanks for taking the time to talk with me.

Other students who did not enjoy writing made the following comments:

Mary: Do you like to write?

Antwone: No.

Mary: Why don't you like to write?

Antwone: I'm not a good writer. I can't think of nothin' to write.

Summary

The pre and post writing assessments were rated using a scale of 1 – 5 to analyze student growth. Student writings were evaluated by six traits, ideas, organization, sentence fluency, voice, word choice and conventions by the researcher and a colleague. The student work reflected a need for further instruction in writing concepts. The results and observations will be explained in the following chapter.

The spelling errors were analyzed based on the stages of spelling development (Bear et al., 2000). The errors showed a decrease in the lower stages of spelling development and an increase in the use of words in the higher stages of spelling development. These results will be discussed further in the following chapter.

Through the interview process students shared openly and honestly with the researcher their thoughts and feelings about reading, spelling and writing. The students self reported regarding the different areas within the intervention. Their reactions and responses have been recorded and grouped according to themes to describe the data.

These three data sources will contribute to the evaluation of the intervention, recommendations and implications for future studies. The constant comparative method guided the final examination of the data to add to the theoretical framework giving

direction to the study. The newly developed theory will be reported in detail in chapter

five.

CHAPTER V

Conclusions and Recommendations

Summary

An interactive viewpoint was the lens this study was implemented through, encouraging students to use prior knowledge and to build upon information by putting new ideas together and accepting or rejecting the logic of the information. Revisiting and strengthening the sub skill areas of phonology and orthography solidified the foundation of the theoretical framework guiding the intervention. The students were solidifying prior information in the sense that they had foundational sub skills in place, but recognized there were gaps in their foundation of knowledge. Going back to the phonological and orthographic processors and applying specific strategies targeting these processors made a difference for these low performing students. By strengthening these sub skills, students began to attend to the meaning of print and their written work. Interactive teaching allowed for student shifts in understanding the intricacies of the language process. Their focus increased and the students could use their resources for higher level functions. In the post writing assessment, the length of student writing was reduced, but advanced stages of words falling in the within word and syllable juncture stages of developmental spelling were found.

Findings Discussed

This study examined the outcomes of student spelling and writing based on a developmental stage approach and the self-perceptions of the students as spellers and writers. The first research question asked, "what were the outcomes of student spelling and writing based on a developmental stage approach with low performing middle school students in a 6-week intervention?' The findings to this question are reported in the following section: progress in student writing, writing findings related to spelling and the new theory of interactive learning process that developed as a result of the study. The second research question is reported through the triangulation of the data and the major themes resulting from the interview process as students reflected on the intervention and literacy activities. This question looked more specifically at the students self-perceptions about spelling, writing, and their participation in the intervention program. The question asked, 'what were the self-perceptions of the students as spellers and writers and how did the students perceive the intervention?' The findings to these questions follow.

Amelioration of Errors

Spelling errors and the analysis of these errors were the focus of the study while using a structured curriculum as the major portion of the instructional piece. Written compositions developed in class provided information about the learning that was occurring and the application of new information. Evidence of cognitive processing of the orthographic application of pattern knowledge gained through the intervention was

apparent as writings progressed during the class. Students' orthographic errors and corrections in their writing showed metacognitive processing following the stages of developmental spelling. The increase in the stage level of orthographic errors evidences a growth in student knowledge of spelling. The focus of the study was on spelling, but Ehri (1980) views spelling and word recognition as sharing a common base; 'Underlying the emergence of both capabilities is the child's growing knowledge of print as a means of representing all the words in his language' (p. 312). The more complete the understanding of what letters map to what sounds, the more firmly established the orthographic image will be (Ehri, 1980). This explanation implies that student reading abilities will increase along with increases in spelling.

In order to analyze the changes in spelling during the intervention, a matrix was created. The matrix was divided into the three stages of spelling development in which students demonstrated the majority of their spelling deficiencies. Misspelled words from the pre-writing compositions were placed in the appropriate stage category on the spelling matrix matching the defined stage of spelling development. When the post writing assessment was analyzed the same procedure was used to look at the stages of spelling where errors most frequently occurred and to determine if there was a difference in the stages from pre to post writing. For example, student R12 made 8 errors in the Letter Name stage in pre-writing and 3 errors in the Within Word stage while on the post writing student R12 made 1 error in the Letter Name stage and 6 errors in the Within Word stage. The decrease in the number of errors in the Letter Name stage and increase in the errors in the Within Word stage indicates a use of more challenging words in writing moving towards mastery of Letter Name stage words.

Progress in Student Writing

Student writing provided the information necessary to answer the first research question, 'what were the outcomes of student spelling and writing based on the developmental stage approach with low performing middle school students in a 6-week intervention?' In order to make the best decisions for instruction regarding spelling, an understanding of linguistics and having insight into speech production will aid a teacher in analyzing spelling errors in student writings. Instruction should be informed by the strengths and weaknesses students may be encountering regarding spelling ability. Strengths in student spellings should be noted to ensure instruction on the appropriate student performance level. Familiarity with and planning well informed instruction for children at the early stages of spelling development will assist them in advancing through the stages more easily. The student who can begin to focus on the semantics of the language at an early age will have a great advantage academically. Teaching students to shift between the processors of phonology, orthography, syntax and semantics effortlessly is the ultimate goal of reading and discourse. Understanding how these processes work, independently or simultaneously, will help teachers to engage students at all levels developing the necessary strengths to focus on the meaning of print. It is not necessary for teachers to explain these processes to students and would probably be a waste of time. The important issue for teachers to grasp is the cognitive abilities of our students, where they are functioning and how to move them along in the learning process.

In their writing, students made obvious decisions to take the risk of misspelling a word that would be the best choice for the context. This finding aligns with the student

interview responses; a majority of the students were risk-takers willing to use the appropriate word even if the correct spelling was not certain or a part of their lexicon. Misspellings were found to be in the midlevel range, within word or syllable juncture stage of developmental spelling. When students are operating at the within word or syllable juncture stages of development they use words with simplex spelling patterns rarely more than two syllables. Spelling errors in the final writing reflected growth beyond reliance on phonological processing, suggesting an understanding of the link between orthography and phonology. Students began to demonstrate an understanding of the higher level spelling patterns, and the use of vocabulary did show an increase over the pre writing assignment. Consideration was made for students to avoid the increasing burden of correct spelling while trying to improve the quality of writing. During the post writing assessment students were encouraged to use newly acquired information about spelling, but to also engage their creative ideas and not feel restricted by the burden of spelling errors. Students were not explicitly told what was being measured on the writing assessment, only that research was being done to assess the effectiveness of Multisensory Reading and Spelling.

The student writings were analyzed using the stages of spelling development defined by Bear, et al (2000). The stage approach to spelling is aligned with stages of reading and writing. The transitional behaviors that occur in a learner's framework are usually in tandem with the other areas of the language arts. Teaching while focusing on the stages of spelling and working at an individual level with students in a classroom provides the continuation of growth at a natural learning pace for students. If a child is struggling or stuck in a specific stage, teaching at a higher level stage or lower level, will

only frustrate the child and may prohibit growth that would be permanent as opposed to superficial for the single purpose of memorizing words for a test. Teaching students at their appropriate level of learning maximizes the learning process leading to application and advancement to higher levels of learning more rapidly. Too often teachers teach to the level of performance on which the majority the class is functioning, not aware of the adjustments that can and should be made to teach all students. Teachers need to be more aware than ever before that students do not learn at the same pace and they arrive in the classroom at all different levels of functioning. The opportunity and the understanding to reach all students at their level is critical for success in the classrooms of today. Teachers have excellent research to draw upon and a large number of resources are being produced today to aid teachers as they embark upon the journey of learning with their students.

Writing Findings Related to Spelling

Student writings spanned the levels of spelling development. In the initial writings, the students were very focused on the sounds of the words and mapping speech to print. Students struggled a great deal with inflected endings trying to determine when to double, drop or change a letter when adding a suffix. A large amount of instruction was focused on these endings to help students eliminate problems with affixes. Students struggled with basic endings ranging from –ing, to –ed to changing a y to i when adding an ending. These errors are not unusual and are frequently seen as students progress through the stages of spelling development. The exception for these errors is the age when they are occurring. Students in second or third grade frequently make these types of

errors and begin to move into standard spelling patterns using inflected endings by the end of 4th grade (Bear et al., 2000). At that point derivational knowledge is used to assist in spelling, provided students have been taught using a developmental process.

Another interesting phenomenon occurring in the writing was the tendency to leave off inflected endings altogether: start for started, kick for kicked, arrive for arrived and trip for tripped. This may be related to the oral language and the common speech patterns used in students home environments (Payne, 1998). Regardless of the fact that these errors may be influenced by oral language, providing instruction in the standard pronunciations and written forms of the language is critical to the success of students.

The within word stage and the syllable juncture stage move in the direction of the deeper meaning of the words, but it is the derivational constancy stage that specifically engages the semantics processor relating it to spelling conventions. The derivational constancy stage was not addressed in the intervention due to time restriction. The students used words in their written work that represented knowledge of derivational constancy and were able to appreciate the higher levels of orthography. The students increased their developmental levels of spelling as evidenced through error levels aligned with the stages of development. Students did not show an increase in the length or overall quality of writing.

Theory of Interactive Learning Processes

It is interesting that during this study spelling improved, but not writing. My theory is that to write well, you must read well, or at least often. Many writers develop

their style, by reading the work of others. Thus, it does not surprise me that the students could improve their spelling in such a short time but not their writing.

The process of interactive learning provided a context for the teaching and a positive and receptive learning environment that developed as result of this study. Explanations of the interactive processes that occur to link sounds and symbols were given in terms that were meaningful and manageable for the students participating in the study. Terminology such as phonology and orthography were never used in the classroom with the students.

An understanding of the spelling patterns emerged more readily for the students as the intervention progressed. During the actual teaching of the Multisensory Reading and Spelling curriculum a large amount of time was spent on student involvement in the learning process. Students were able to comprehend the layering of information that was delivered during the class and then process the information for the next day's lesson.

Students were eager to engage in discussions about reading and writing and all the sub skills that interact to achieve the purpose of reading. The awareness of the knowledge of learning and actively being a part of the process was exciting for the students. They welcomed explanations about the logic of spelling and an instructional process that while being intense and difficult made sense and gave them an understanding to build upon.

Students embraced the discussion of the text, *Tuck Everlasting*, after they began to understand a deeper purpose for looking at the text. The reading and analysis of meaning accomplished with the study of the style Babbitt used in her writing engaged these children. For example, looking at the way characters were described in detail helped students to create visual images through class discussion. Students were then

asked to draw pictures of the characters as described by Babbitt and as they visualized. Students talked excitedly with each other and the teacher as they began to see the link between reading and writing. Students were then asked to write description of a character and the teacher was then to draw the picture based on the details of the writing. Students saw the link very clearly between reading and writing at this time.

Triangulation of Data

Student work and interviews provided the context for the triangulation of the data while linking the findings with the literature and the grounded theory that developed as a result of the study. Student writing was used for data collection across three areas of the study, writing quality and quantity, and spelling levels. Interviews provided the insight into thoughts of the participants in the study (Patton, 1990). Interaction and construction of meaning were the guiding principles of the study using the Multisensory Reading and Spelling intervention. These principles, interaction and construction, link directly to the grounded theory developed as a result of the study. Student learning is an active process. The students in the study seemed to have been only passive recipients of information and learning prior to participating in the program.

Interviews

Recording student responses to the interview questions provided the answers to the question, 'what were the self- perceptions of the students as spellers and writers and

how did the students perceive the intervention?' Student interviews gave insight to their thoughts and perceptions about writing and spelling while considering the relationship to reading. Findings from the interviews were informative in that the students characterized themselves as risk-takers in the spelling process, a willingness to use words they were uncertain about spelling. Several of the students interviewed stated they feel as if poor spelling is acceptable and not an issue to be concerned about. Treiman (1998) states 'some well-educated adults almost seem proud to admit that they are poor spellers. They are too busy and too creative, they imply, to have taken the time to laboriously memorize a large number of irregular spellings' (p. 372). The coding categories for the interview and how they relate to the new theory model based on this intervention are discussed in more depth through the major themes.

Major Themes

A matrix was created to help clarify and to analyze the patterns of relationships (Miles and Huberman, 1994) looking at the common themes and constructs. The matrix organized the major themes characterizing student responses in the interviews and compared them with the writing and spelling stages evidenced in student work. A comparison across themes was made to find any other sub-themes to give insight to future instruction for struggling students. The matrix can be found in Appendix D.

Aspirations

Student's personal aspirations were verbalized in the interview that gave bearing to the value of education and the ability to read write and spell. A consciousness of the importance of academic success was perceptible in their responses reflecting on writing and spelling. Self perceptions regarding the level of ability and functioning in school were a concern in relation to the future and getting a job. The data aligned with the student work showed increases in stages of developmental spelling. Through interactive discussion students began to appreciate the information delivered in the study and wanted to be a part of the learning and teaching process.

Awareness of Risk

The majority of the students looking at the future and employment situation expressed a fear of failure if they were not successful in school. The value of education was validated in their comments. Other students were not concerned about spelling skills and did not see a correlation to future successes.

Students were concerned about future employment demonstrating another link to the value of education and the importance of academic skills and abilities. Student writing showed increases in spelling knowledge and when interviewed students self perceptions reflected their desires to be risk-takers, demonstrating a feeling of confidence about spelling. Students felt they had knowledge of how the language works and they were willing to risk trying to spell a word even if they were unsure of the spelling. Again,

there seemed to be a growing security about their academic abilities. Mastering the engagement of the phonological and orthographic processors to match their developmental levels and increasing their spelling strategies may be the basis for these responses.

Metacognitive Processing

Students offered thoughtful arguments about the reciprocal process of reading and spelling. The perceptions varied from determining spelling was more difficult than reading because of the extra step required encoding a word. Student comments were, 'It is hard to hear the sounds and write them correctly' and 'You can know how to say a word and not be able to spell it.' The technical aspects of spelling showed metacognitive thinking in the connected text. Student corrections offered insight to the thought process occurring during the writing.

The students offered differing arguments relating to the difficulty of spelling and reading. Two opposing views were offered, the majority of the students viewed spelling as a more difficult task than reading. Reasoning to support the claim that spelling requires more complex functioning was demonstrated through student responses. Researchers have validated this finding empirically through well-constructed designs supporting the anecdotal evidence offered by the participants. A number of research studies cite the high correlations between reading and spelling (Ehri, 1980: Gill, 1989: Juel, Griffith, & Gough, 1986: Marsh et al., 1980; Morris and Perney, 1984: Zutell & Rasinski, 1989).

Students showed evidence of metacognitive processing when explaining and elaborating on responses that concur with empirical data.

Those who believed reading was a more difficult task than spelling defended their answers by saying it is easier to write down the sounds when you know what they are rather than trying to string together sounds from print when looking at an unknown word. These students supporting this argument were also the better spellers in the group.

Feelings About Writing

Students verbalized the characteristics of good writers through the clarity of the message and the ability to create visual images in the readers mind. The ability to verbalize the characteristics of good writers was astonishing, but the majority of the students did not perceive themselves as good writers showing a dichotomy. Students were capable of describing quality writing however; they had great difficulty producing quality writing.

Looking at the style of the writer created awareness for the students that words could paint pictures in the minds eye. Students were able to identify with the writer and mimic some of the traits Babbitt used in *Tuck Everlasting* (1975). Students needed to know it was okay to look at the writer's style and follow the pattern. After understanding what they were looking for when they were reading they became more excited about writing. Interactive discussion took place on a regular basis after students understood what they were looking for in the text. There was not an obvious transfer of knowledge

and new learning from the intervention strategies presented regarding written composition.

Ivey (1999) found in her case study that even though a student may struggle as an oral reader the ability to think critically about information and process information through listening was a great strength for her student. Concurrent with these findings students participating in the Multisensory Reading and Spelling intervention were eager to engage in discussion about issues and concepts that may have been too difficult to process through the written channel.

Recommendations

Future studies allowing for long term interventions with middle school students are necessary to determine the full effect of the Multisensory Reading and Spelling intervention. Pairing the intervention with a comprehensive literacy approach to ensure comprehension development, critical thinking and written composition are key components for further study also. Students at the middle school level are receptive to instruction that is meaningful and beneficial. Students showed excitement about learning and even shared concerns about going back into the regular language arts classes next Fall with teachers who did not have the strategies to teach them how to fill in the information that was missed earlier in their educational careers.

Establishing a relationship and building trust with these students is paramount to the success of an intervention of this type. Students failing to function at the expected

grade level have experienced many failures in their school careers and are wary of new strategies or special classes to help increase their abilities.

Teachers need the information and permission to slow down the instruction for students who continue to struggle. The need to meet standards and teach to the test for state testing is not sufficient and does not necessarily mean real learning is taking place. If students were functioning on grade level or above this would not be an issue. Many of the students in inner city schools are behind their grade level peers in suburban district. In order to reverse the growing achievement gap in middle school prudent action should be taken. Students are eager to learn and want to be successful. There are a number of ways to aid these children in their learning. As teachers we face the dilemma of the time frame we have to work with these students and the state standards that drive instruction more frequently than student needs drive instruction. It takes time to help students increase their skills in order to be successful enough to compete academically with their suburban peers. The results are not swift, a number of years have passed since the learning process began for these students and it will take a number of years to fill in the gaps. All children deserve a quality education and every teacher I know is committed to serving our students. It is promising to see results and offer solutions that can make a difference for older students.

Reflections

The brevity of the intervention was not sufficient to make significant change in student performance. Student awareness was activated in the sense that they realized they

were capable of success academically. Spelling gains were evident in their writing. It is important to understand that although spelling errors did not decrease in the writing it was the level of spelling errors where the change did occur. Familiarity with the developmental stages of spelling ability allows a teacher to meet student needs at their instructional level helping to change the perception that all grades are taken on the number of correct responses. In order to have informed instruction it is necessary to understand where students are performing and how to teach to their specific needs.

Limitations

A number of factors contributed to the limitations of this study. Certain elements were beyond the control of the researcher. The time frame for this intervention was a limitation that was a major constraint on the results of this study The time frame for this intervention was a limitation that was a major constraint on the results of this study. The time period of the study was limited to a total of 42 hours of instruction, or 1.5 hours a day for 6 weeks the duration of the summer school session. The school required that any student missing more than three days be removed from the program. Most of the children participating in the study had spent a number of years failing in the school system.

A time period was necessary to build up the trust of the students and establish a rapport with them when beginning the intervention. Students were resistant to the initial instruction of foundational information, focusing on the sounds of the words, and the reliable patterns of the language. Once the students began to see the connections and the progress they were making in their spelling they were more willing to participate in the

program. Learning about the phonology of the language and the reliable orthographic patterns helped the participants to improve their spelling abilities. Terms the students became familiar with were auditory patterns and visual patterns for spelling. With the focus on spelling students were attuned to the new information learned in the intervention.

More data on student reading levels and fluency rates would have enhanced the study. Comprehension and oral language were not measured in this study but for further studies and more research into these areas with older students is necessary. Students who have been restricted by teacher control during book discussions struggle with appropriate behaviors when engaging in literature talks. To help students overcome the resistance to respond with brief or one word answers reciprocal questioning was the strategy used to guide students to develop their own discussions. Hart and Risley (2002) strongly support the importance of oral language interactions, the amount, the endurance and the constancy of engaging in conversations with children to support vocabulary and comprehension. Regular discourse with young children has an effect on their learning throughout life.

The data show discrepancies exist between performance and perception. Students perceive themselves as good spellers, but in relation to students at the same grade level there is still a gap in spelling abilities according to national percentile ranks. Students do have positive self-perceptions making it easier to motivate them and urge them to push themselves a bit further. Attitudes about academic achievement do make a difference in performance. These students were required to attend summer school in order to be promoted to seventh grade. Attendance was good and students remained engaged in the

learning process and even showed interest and excitement about learning new information linking to prior knowledge and activating latent awareness.

The low number of students participating in the study restricts generalizations to the population. This study did not use a control group due to the lack of a demographic match limiting the analysis to strictly qualitative in design. Implementation of a program like *Multisensory Reading and Spelling* (Wickerham & Allen, 1993) requires a committed teacher to be willing to participate in the extended training and the school system commitment to fund the implementation of the program. There is not a great expense to the program except for the teacher materials and training. The key to the program is ongoing implementation and getting students actively involved in the learning process. When they take ownership of learning the possibilities are limitless.

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Appendix A

Institutional Review Board Approval

Oklahoma State University
Institutional Review Board

Protocol Expires: 4/11/03

Date: Friday, April 12, 2002   IRB Application No ED0284

Proposal Title: AMELIORATING ORTHOGRAPHIC ERRORS IN MIDDLE SCHOOL WRITING

Principal
Investigator(s):
Mary Dahlgren   Sandra K. Goetze
2305 Faircloud Lane   250 Willard
Stillwater, OK 74078   . Stillwater, OK 74078

Reviewed and Processed as: Expedited (Spec Pop)

Approval Status Recommended by Reviewer(s): Approved

Dear PI:

Your IRB application referenced above has been approved for one calendar year. Please make note of the expiration date indicated above. It is the judgment of the reviewers that the rights and welfare of individuals who may be asked to participate in this study will be respected, and that the research will be conducted in a manner consistent with the IRS requirements as outlined in section 45 CFR 46.

As Principal Investigator, it is your responsibility to do the following:

1. Conduct this study exactly as it has been approved. Any modifications to the research protocol must be submitted with the appropriate signatures for IRB approval.
2. Submit a request for continuation if the study extends beyond the approval period of one calendar year. This continuation must receive IRB review and approval before the research can continue.
3. Report any adverse events to the IRB Chair promptly. Adverse events are those which are unanticipated and impact the subjects during the course of this research; and
4. Notify the IRB office in writing when your research project is complete.

Please note that approved projects are subject to monitoring by the IRB. If you have questions about the IRS procedures or need any assistance from the Board, please contact Sharon Bacher, the Executive Secretary to the IRB, in 203 Whitehurst (phone: 405-744-5700, sbacher©okstate.edu).

Sincerely,

Carol Olson, Chair
Institutional Review Board

Appendix B

Parent Permission

Mary E. Dahlgren
3240 W. Britton Road, Suite 104
Oklahoma City, OK 73120
(405) 755-4205

May 21, 2002

Dear Parent and Student:

During the summer school session we will be conducting a study to determine the benefits of a specific spelling and writing program when used by the teacher in the Language Arts classes. This is a part of our effort to provide Oklahoma City students the very best teaching and learning opportunities available.

How we approach teaching spelling and writing skills does make a difference, and we are trying to determine what methods can make the most significant impact. The study will consist of two groups of participants. One group will use the *Multisensory Reading and Spelling* program for spelling and writing instruction. The other group will comprise the control group and will be taught in using the traditional language arts methods and curriculum. The results of the Wide Range Achievement Test, pre and post, spelling subtest, for the two groups will then be compared to determine which methods are most effective. A writing sample by all students will be taken before the study begins and at the end of the study. A student interview will be done with 10 students who will be chosen randomly from the group who had the *Multisensory Reading and Spelling* instruction.

When this study is completed the results will be mailed to your home address upon your request. If you would like to see the questions on the interview or the writing sample please let me know and I will make arrangements to share this information with you. The test scores, the writing sample and the interview responses will be destroyed after the study is completed (within 6 months) and all electronic records kept on the computer will be deleted. The summary data and records that will be used in my dissertation will be kept for five years after the study is completed and then will be shredded. Student results will be shared with the teacher and administrator to help determine the effectiveness of this type of instruction for future use in the classroom.

If you and your child do or do not wish to participate, please indicate your answer on the attached form and return the form to me by May 31, 2002. Thank you for your assistance. Your participation will be appreciated, however, there will be no penalties or rewards for participation or non-participation. Your child may withdraw from the research at any time.

Gratefully,
Mary Dahlgren
Researcher

Student Assent Form

For research conducted under the auspices of
Oklahoma State University
For the partial fulfillment of the requirements for the
Degree of Doctor of Education
Mary E. Dahlgren

Name:_____

Why am I getting this paper?

The researcher wants to tell you about a study about spelling and writing. She wants to see if you would like to be in this study. Mary Dahlgren is the researcher who is doing this study.

Why is Mary doing this study?

She wants to see how the training program for sixth grade language arts is working.

What will happen to me?

If you agree to be in the study you will take a writing test on two different days one at the beginning of the study in April and one at the end of this study in May. This writing activity will be like the ones you already know how to do in your classroom. Each time it will take about 30 minutes. Mary may pick you to be interviewed about the *Multisensory Reading and Spelling* instruction.

Who will know what my answers were?

The researcher will study your responses to the writing test. No one else will know your answers but you and the researcher.

Will the study hurt?

The study will not hurt. You will write on a topic you know about. You will be asked to do your very best work when writing.

Will I write and spell better if I am in the study?

This study won't make you spell or write better or worse. The researcher might find out something that will help your school language arts program.

What if I have any questions?

You can ask questions any time. You can ask now. You can ask later. You can talk to teachers, the principal, the researcher or you can talk to someone else.

Do I have to be the study?

You do not have to be in the study. No one will be mad at you if I don't want to do this. If you don't want to be in the study, you just have to tell us. If you want to be in the study, you just have to tell us. You can say yes now and change your mind later. It's up to you.

Signature of Subject	Age	Date

Signature of Researcher		Date

Appendix C

Instrumentation

Student Interview

This interview is to be administered one-on-one by the researcher. The researcher following the student response will record the answers.
Describe someone who is a good speller.

What kind of a speller do you see yourself as?

Friday Speller – you are one who makes 90% – 100% on the test and then forgets how to spell most of the words.
Bizarre Speller – you are never sure how to spell a word and may spell it several different ways in one paragraph.
Safe Speller – you only spell with words you know how to spell even when you know a better word to use in the sentence.
Risk Taker – you feel as if you have a good understanding of spelling and even if you are unsure how to spell a word you are willing to try and risk misspelling a word occasionally.
Other -

Do you think spelling is important? Why?

Is it acceptable to be a poor speller?

Do you think more people have trouble spelling or reading?

Why do you think one is more difficult than the other?

Did you learn something new in the *Multisensory Reading and Spelling* program?

Describe someone who is a good writer.

Do you enjoy writing? Why?

Appendix D

Triangulation Matrix

Themes	Perceptions	Spelling and Writing Data
Aspirations: Value of education and the ability to read, write and spell	Reflected in writing Speller type Self perceptions	Increases in developmental stages of spelling for all students. Student awareness of spelling increases.
Awareness of Risk: Future employment depends on abilities	"If you don't know how to spell you can't get a job." Knowing how to spell means knowing how to read.	Majority of students defined themselves as risk takers in spelling. Word choice was not advanced and rarely fell within the stage of derivational constancy.
Not a Risk: Not a concern	People misspell and don't worry about it "Teachers don't count off for misspelling, why should we care."	
Metacognitive processing: Thoughtful arguments offered	Determined spelling was more difficult than reading because of the extra step required encoding a word. "It is hard to hear the sounds and write them correctly." "You can know how to say a word and not be able to spell it."	Technical aspects of spelling did show metacognitive thinking in the connect text. Student corrections offered insight to the thought process occurring during the writing. Lack of prewriting on both pre and post writing assessments showed limited metacognition during the writing process.
Comprehension to composition: The importance of comprehension is evident in a good writer.	Writers know how to relate messages Writers create visual images with their words. Students do not view themselves as writers.	Student writing does not reflect a well-grounded concept of writing components. Limited use of elements in writing.

Vita $\mathcal{2}$

Candidate for Degree of

Doctor of Education

Thesis: AMELIORATING ORTHOGRAPHIC ERRORS IN MIDDLE SCHOOL
WRITING

Major Field: Curriculum and Instruction

Education: Graduated from Casady High School, Oklahoma City, Oklahoma in May
1979; received Bachelor of Science degree in Home Economics from Oklahoma State
University, Stillwater, Oklahoma, in December 1983; received a Master of Education
degree from the University of Central Oklahoma, in Edmond, Oklahoma, May, 1991.
Completed requirements for Doctor of Education degree at Oklahoma State
University in May 2003.

Professional Experience: Sixth grade classroom teacher at Guthrie Public Schools,
Guthrie, Oklahoma, August 1983 – June 1985; Classroom teacher at Trinity School,
Oklahoma City, Oklahoma, August 1985 – June 1986; Alphabetic Phonics Therapist
at Trinity School, Oklahoma City, Oklahoma, August 1988 – June 1992. Private
Reading Therapist, Oklahoma City, Oklahoma, August 1992-1997. Graduate
Assistant, Oklahoma State University, Stillwater, Oklahoma, January 1996 – August
1999. Associate Director, Payne Education Center, Oklahoma City, Oklahoma,
September 1997 –1998. Executive Director, Payne Education Center, Oklahoma City,
Oklahoma, February 1998 – present. Reading Consultant, Region VII Comprehensive
Center, University of Oklahoma, Norman Oklahoma, August 1999 – present.

Professional Memberships: Academic Language Therapy Association, International
Dyslexia Association; International Reading Association; Society for the Scientific
Studies of Reading; Kappa Delta Pi; Association for Supervision and Curriculum
Development