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Outcome of implementing multisensory instruction with second grade students who struggle with reading

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**OUTCOME OF IMPLEMENTING MULTISENSORY INSTRUCTION
WITH SECOND GRADE STUDENTS WHO
STRUGGLE WITH READING**

by

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Dedication

I dedicate this thesis to my dear husband, Jason.

Acknowledgments

I wish to thank my husband, family and friends for their continued support in this

time of growth and learning.

Abstract

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OUTCOME OF IMPLEMENTING MUTISENSORY INSTRUCTION WITH SECOND
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Students struggling with reading are at risk for academic and reading failure. It is imperative to engage and motivate these students through the use of multisensory instruction which appeals to their learning style. To improve the decoding and spelling of sight words, second grade students in a small group instruction setting were given four weeks of multisensory instruction using various materials. Data was collected in a qualitative framework throughout the study using multiple data sources. What was found was that when the struggling students preferred a multisensory activity, after consistent use with that material, they performed better in weekly assessments. Students also reported increased confidence in their reading skills as well as increased overall enjoyment of reading. Additionally, all students displayed a marked improvement in each target decoding skill and in the spelling of previously un-mastered sight words.

Table of Contents

Table of Contents (Continued)

Table of Contents (Continued)

List of Tables

Chapter 1

Introduction

"I just don't want to read. I don't like school." The words of my fourth grade practicum student rang in my head, stunning me. We were sitting in his classroom working together on an assignment that he had failed to complete as homework. His teacher was frustrated. She knew that at home there was no support, no reinforcement and a general lack of care for education. The student was disengaged, bumping and rolling through the school day with apparent apathy. He was not interested, period. So I sat and talked with him, working quietly on an assignment that had been sent home one, two, three times and always returned home incomplete and more rumpled with each sending. Then, the punch: "I don't like school."

When I had sat in my teacher preparation classes, I had earnestly wrote notes on the importance of student engagement, focus and motivation to increase academic growth. I innocently felt growing confidence that I could easily complete all of these necessary steps with students so that learning could occur and student success could be ensured. I had listened in class, read all my books and created assignments that I felt would engage and focus all the students under my care. A touch on the shoulder, the all-telling "teacher look," empathy for my student's diverse background; I naively felt that I was amply prepared to deal with real students. However, now I had a student in front of me who didn't like to read, who didn't like school and who in all essence appeared to have "given up."

The school was in an urban district and had a high percentage of students on free and reduced lunch. Teachers were kind and educated, but also frustrated with student's

1

lack of growth. The student in front of me was not interested in assignments, reading or

any subject that I could observe. By fourth grade, he was disinterested in school and his

assignments and academic proficiency reflected his seeming apathy. I had been placed in

his classroom for only two weeks. But for those two weeks, I worried over him

constantly and pondered how to engage him. I reread texts and reviewed notes.

However a stern "teacher-look" and a redirecting touch on the shoulder was not

effective. What could be done?

Story of the Question

A series of events occurred in my life that set me on a professional journey of

discovery. I was freshly graduated from my teacher preparation program and ready to

find a job as a general education classroom teacher. The only problem was that there

were no available teaching jobs. That year was both challenging and the beginning of a

time of discovery for me. I worked four jobs that year. I was a teacher's aide in the

school where I would become a teacher the next year. I worked as an academic tutor

with a Down syndrome student whom I had worked with during my student teaching

year. I was also employed by a private occupational therapy practice where I ran social

skill classes for children with oppositional defiant disorder, autism and/or sensory

processing disorder. I also worked as an ABA or assistant behavioral therapist to a

student who traveled from abroad every year to the clinic to receive updated behavioral

and occupational therapy training. As I became a part of the occupational therapy

practice I gained an unexpected mentor. Her tutelage in multisensory techniques was

essential to my growth as a teaching professional. With simple toys, bean bins, chalk and

a multitude of other simple materials, reluctant students learned how to grip pencils, use

2

the appropriate pressure for writing and learned how to become more desensitized to previously unmanageable sensations. I soaked in everything that I saw and heard from this new mentor. Here was something that I had never heard of or seen in my teaching practicum courses. I couldn't learn enough.

The next year found me in my own classroom. I was now a professional teacher; a reading support teacher who instructed several grade levels of students who were unable to meet grade level reading. These students were struggling. Some of them found reading painful, fighting their parents at home. Reports of tantrums and meltdowns were typical from distraught parents who felt helpless. It was clear that these children needed to access reading so that reading became a pleasure and not a chore. Like many first year teachers, I stumbled and fell, grew and failed and ultimately learned the three grade level curriculums I needed to know to teach my students. But I knew that I needed to know more not simply for myself, but for my students.

I became a graduate student to become a reading specialist, to truly immerse myself in the knowledge of how to teach reading. I gained a full and rich understanding of the essential need for reading proficiency in students so that they could access the content and academic skills needed for growth during their school career. I conducted further research regarding the importance of reading engagement and motivation by studying the theories of John T. Guthrie. His words and works were powerful to me and a resonating chord resounded in my own feelings as a teaching professional. On his website providing information on his CORI program, Guthrie (2015) noted that reading engagement was "the interplay of motivation, conceptual knowledge, strategies, and social interaction during literacy activities." I began to see that the interplay of

3

motivation and reading engagement were connected for success. But how to engage students? How could motivation for reading engagement increase, particularly for students who struggled with reading?

My training as an educator with struggling students, my research in graduate school and my past experiences working with diverse students in an occupational therapy practice all began to meld together in a way that felt as natural as it was invigorating. Guthrie's (2000) research noted the importance of key elements which motivate students' reading engagement but stresses the importance of a hands on multisensory experience to galvanize motivation and academic growth.

My job as a reading support teacher with struggling kindergarten through third grade students is my passion. Understanding regarding the necessity of building reading skills so that students can succeed across all content areas is imperative, as are the optimal techniques that can be used to enhance instruction. Vacca et al. (2014) aptly describes literacy as "the spine; it holds everything together" (p. 9).

Statement of Research Problem and Question

Through my studies in graduate school I understand the necessity of student engagement with reading as being critical for student success across content areas. Students can become crushed beneath the amount of content, vocabulary and understanding that they must have for their reading and do not have the strategies to access the text. As this occurs, reading and therefore academic failure can occur, leading to frustrated and unmotivated students. With my understanding that reading engagement is key to reading motivation and that multisensory activities are naturally invigorating to students, I began to wonder what the outcome would be if second grade students who

4

struggle with reading were given kinesthetic/multisensory activities to enhance
instruction in sight word and decoding reading skills?

My focus would be combining the knowledge of multisensory techniques and
activities that I had been lucky enough to learn in my past teaching experiences with my
current professional position working with struggling second grade students in a small
group setting. My desire would be to see if students would grow in their decoding and
sight word skills as they learned through multisensory techniques.

Purpose Statement

As the curriculum content and local, state and federal standard demands rise, so
too do the pressures on both teachers and students to continually improve academically.
For students who struggle with reading it is essential to further investigate the ways in
which we can invigorate and implement growth. This research study strives to combine
small group instruction, knowledge regarding learning styles and multisensory activities
with students who struggle with the act of decoding and spelling sight words.

The purposes of the study are varied but with one end goal in mind: to improve
the reading ability and motivation of the study's participants. One purpose of the study is
to use the benefits of small group instruction to increase student growth. When students
struggle with essential literacy skills, the necessity for early and intensive intervention is
essential for growth (Kamps et al., 2008). Studies completed have noted the benefits of
small group instruction, finding that it provides support for growth when the teacher to
student ratio remains small (Kamps, et al., 2008).

The study also seeks to support the research regarding learning styles. Simpson &
Du (2004) describe a learning style as a personal way in which information is accessed

5

and processed, an essential process for the ability to retain and recall information. Through studies completed by researchers, it was found that the dominant way in which teachers taught was through auditory-visual means. However, Roberts et al., (2000) found that this method of learning was not optimal for the majority of students, with age and preference being a large contributing factor. Not only were students not developmentally unprepared to learn through a dominantly auditory-visual learning style, it was a way that may never be a child's most advantageous method of learning. Indeed, for a student who struggles with critical literacy skills, their learning style is dominantly one that features a need for multisensory activities and techniques, which encourage engagement and participation (Lister, 2004).

Research surrounding the use of multisensory activities and their benefits have been seen as a way to improve a number of critical literacy areas. When viewing the struggling student, multisensory research has spanned decades. The benefits can be seen in multitudes of studies from emergent literacy skills, such as learning letter sound correspondence (Labet et al., 2004), to improving reading accuracy (Campbell et al., 2008). Joshi et al. (2002) found that multiple critical areas were improved, including phonological awareness, decoding and comprehension. The use of multisensory techniques are also used flexibly, with the ability to be embedded into instruction in a variety of settings such as summer programs (Magpuri-Lavell et all., 2014).

The current research being completed is meaningful to the addition of knowledge regarding multisensory techniques and reading achievement, as there is a gap in current research studies. While a plethora of research is found prior to the year 2000, current research has not fully explored multisensory techniques in conjunction with decoding and

spelling growth. As there is a plentiful amount of research regarding learning styles, with the auditory-visual style being not the optimal learning style for many students as noted earlier, a need to explore the kinesthetic-multisensory learning style in a full and small group setting would benefit teaching professionals as they seek to improve the academic progress of their students.

Combined with the positive effect of small group intervention, the embedding of multisensory techniques can prove powerful as a source of engagement and motivation when improving the reading skills of struggling readers. It may also prove a method of preventing reading failure, which is of critical importance. Scheffel et al. (2008) noted that the prevention of reading failure is imperative as a goal of school districts, as was the integration of effective teaching practices, featuring multisensory techniques. The benefits of such an integration are numerous, with engagement and motivation increasing as well as increased student reading achievement and less risk of reading failure.

Organization of the Paper

Chapter two presents a review of literature concerning the essential importance of reading success for young students. It also focuses on the benefits of small group instruction, as well as the need to understand and emphasize students' unique learning styles to enhance instruction in the classroom. The benefits and effects of multisensory techniques when used in conjunction with reading growth and success is also investigated. Chapter three focuses on the study design and context. It reports the scope and sequence of the study's activities as well as essential information about the students involved in the study. Chapter four is a discussion of data collected from the study. It involves a close analysis of data from the students involved in the study and

7

what results and information were gained. Chapter five concludes the study by

providing final thoughts and implications found from the study. It also includes a

reflection of limitations for future teaching experiences, student growth and further

research regarding multisensory techniques with students regarding reading growth.

Chapter II

Literature Review

We cannot "teach students as if they all learn the same content in the same way, in the

same amount of time, and with the same instructional resources/materials."

(Lister 2005, p. 24)

Students who struggle with basic decoding and spelling skills are at risk for reading failure. Though a systematic and explicit method of teaching is often employed for students in the classroom, typical instructional strategies and activities may be failing our struggling students. Campbell et al., (2008) provides a possible cause for the continued underachievement of some students, that "too often, students are instructed indirectly, watching and listening to the teacher or other students..." (p. 268). The student who displays a lack of strength in reading is at risk for not only reading failure, but an increase in his dislike of reading versus his academically stronger peers (Campbell et al., 2008). When students are unsuccessful during the early years of reading, a cycle of reading weakness and dislike of reading may continue, increasing the chances that a struggling reader may not reach adequate facility in grade level reading (Campbell et al., 2008).

The struggling reader requires "direct intervention [to] improve in critical early literacy skills," (Kamps et al., 2008, p. 112). To alleviate the gap between grade level readers and those that struggle, as well as to address students with learning disabilities and/or dyslexia, school districts are becoming more attuned to student's individual learning styles as well as turning to supplemental reading programs which often feature multisensory activities and techniques. The kinesthetic approach may also be used in

reference to multisensory teaching and is described by Grant (1985) as, "rely[ing] on students' active, physical participation, allowing children to discover their education and individual capabilities" (p. 455). The multisensory or kinesthetic approach to learning may also be classified as learning through "visual, auditory, and tactile stimulation" (Grant, p. 455). Therefore, the multisensory, hands on approach to learning allows direct stimulation through tactile touch while learning, increasing active participation during a lesson.

This chapter describes the necessity of understanding the struggle and possibility of reading failure for students in early grades and the intervention of small group instruction. It also explores the importance of students' personal learning styles and the benefits of multisensory techniques and activities when used to increase the struggling reader's ability to decode and spell. The chapter discusses how there is a need for a multisensory teaching approach in conjunction with learning preferences and styles as well as the noted effects and benefits of a multisensory approach for struggling students. The research in this chapter provides a broad view of how small group instruction, in combination with a multisensory approach to reading instruction, may aid in addressing the needs of struggling readers in the classroom.

Small Group Instruction

The essential need to address struggling students' reading needs is critical to prevent reading failure. Kamps et al., (2008) noted that students fared much better when "schools were able to manage the intervention for students in these early grades before learning problems became severe and students fell too far behind in reading to ever catch up to typically developing peers" (p. 109). Kamps et al., (2008) additionally discussed

the benefit of small group instruction to address the needs of struggling readers, noting that the diverse needs of a struggling student population can be overwhelming to the general classroom teacher who may not have the time, nor the training to appropriately diagnose and then instruct the struggling students in her classroom. Additionally, "several large-scale intervention studies over the past decade suggest that highly intensive systematic instruction can reduce the rate of severe reading failure" (Kamps et al., 2008, p. 101). Instead, the use of small group instruction and intervention was found to be quite effective for struggling students with Kamps et al., (2008) stating that "prior research has indicated that smaller group sizes are an important contributing factor to the success of reading interventions" (p. 109). Therefore, an essential piece to understanding how to aid struggling early readers may be the inclusion of small group support to increase their chances of meeting grade level literacy standards.

Learning Styles and Characteristics

    Learning style. As well as investigating the importance of small group support to the struggling reader, it is noteworthy to understand the learning style of students. Simpson & Du (2004) describe learning style as, "how a person perceives and internalizes information" (p. 126). It is unique to the individual and it is the manner in which he absorbs information in the most effective manner. Simpson & Du (2004) note in their study the importance of including student learning style for increased student enjoyment, stating that there is "a need to design courses according to students' learning styles to enhance student success" (p. 133). It is clear that an understanding of students' personal learning styles is therefore another crucial element when viewing the struggling student and his enjoyment and ease of completing the literacy curriculum.

Auditory visual learning style in the classroom. A teacher's typical classroom would likely find students of various background, socioeconomic status, gender and learning style. In her classroom she might have a district endorsed curriculum that is noted as being "research based" and common core aligned. She knows that she must follow a particular scope and sequence in order to meet all the objectives for the district, as well as to prepare her students for standardized tests for that school year. This teacher is considered effective and has a firm understanding of pedagogical and classroom management practices. However, if a thorough investigation of teaching practices was completed in most schools, it would likely be discovered that the dominant style of teaching and learning on a daily basis is through auditory-visual techniques. It would also likely be found that some students continued to struggle and fail when reading, even when effective teaching was present. Joshi et al., (2002) notes "several reasons have been advanced to explain reading difficulties...these include family background, paucity of literacy materials available at home, lack of motivation on the part of the learner, and some unspecified cognitive weakness. To this list of factors should also be added the quality of beginning reading instruction provided in many schools" (p. 230). Therefore, the effectiveness and efficacy of using teaching practices strongly grounded in auditory/visual techniques towards our diverse population is questionable and should be further investigated.

Roberts et al. (2000) found that while the dominant method of teaching in the classroom is through auditory-visual procedures, a student may not fully benefit from this method until well after the primary grades, if at all. "Research has demonstrated that many students do not become strongly visual before third grade; auditory acuity first

develops in many after sixth grade, and boys are often neither strongly visual nor auditory even during high school" (p. 14). Therefore, the use of a dominant auditory-visual teaching style to young readers may be less effective than other learning style techniques and may contribute to a struggling reader's difficulty in attaining and meeting the literacy demands of the grade.

The struggling reader's learning style. In her research regarding the learning-style characteristics of students, Lister (2005) noted that the profile of a struggling student differed significantly from those of other students. Some differences between a struggling student and his on-level peer included a desire for stronger guidance as well as a significant lack of motivation regarding learning. As the learning-style characteristics were found to deviate between students, Lister (2005) argued that a single method of teaching was not effective for all students, particularly those who struggled with grade level content. Various teaching approaches were employed to gauge which was most beneficial to the struggling students. Lister (2005) found, "it became apparent that [struggling students] performed significantly better with learning-style instruction that emphasized manipulation of resources and the active engagement of each child with tactual and kinesthetic materials than they did with Traditional instruction that essentially used lectures, discussions, and worksheets" (p. 34).

As noted by the authors, while students vary in their academic strengths and weaknesses, so too do they vary in their styles of learning. To expect all children to learn, retain and apply information in the same manner is to be grossly naive and ineffective as teaching professionals. The struggling student displays an involved, complex profile of literacy development. While the desire for guided instruction exists, it is also coupled

13

with a lack of motivation to learn. Campbell et al., (2008) states that struggling students exhibit the Matthew Effect phenomenon as they "continue to fall behind their peers throughout their educational experiences" (p. 268) and quoted Stanovitch's research that noted, "when children failed at early reading, they began to dislike reading and, therefore, read less than their classmates who were stronger readers" (p. 268). It is apparent that the strain of struggling daily in an educational environment that is not conducive to optimal learning can create a cycle of failure and struggle. Therefore, it is imperative that teaching strategies and techniques should be employed to engage and invigorate the student to ameliorate the chance for continued failure.

Multisensory/Kinesthetic Teaching

Auditory-visual versus multisensory. In Lister's (2005) study, a key element of the research surrounded the idea that learning styles and modalities should not be ignored. In fact, if a learning style is particularly preferred, the strategies and techniques that are most consistent for that type of learning should be strongly present for optimal learning (Roberts et al., 2000).   Roberts et al. (2000) argued that many students are not auditory-visual learners, but would instead benefit from an instructional approach that appropriately incorporated multisensory, kinesthetic tactics. A comparison between a traditional auditory-visual teaching methods approach versus a multisensory approach found that students achieved higher test scores and also scored higher regarding their attitudes toward multisensory learning versus traditional methods.   In a study by Hook et al., (2001), it is noted that "children with reading disabilities have significantly more difficulty than normal readers in processing auditory cues, particularly when dealing with very brief tones and stop consonants" (p. 77). Therefore, a close investigation into our

14

methods of teaching must be completed so that each student's learning style is recognized and ultimately, utilized to ensure the most advantageous conditions for literacy development, particularly for the struggling reader. Additionally, Grant (1985) conducted a study in which she compared the auditory-visual style of teaching to a hands on approach through kinesthetic/multisensory methods regarding skills in spelling. Based upon the positive growth found from students who participated in the multisensory approach, Grant (1985) argued that "not only did the kinesthetic method prove to be more effective, but much more enjoyable for the students as well. The physical movement of this method causes such a strong attraction for the young child" (p. 461). The students were observed to be naturally more motivated to learn through the use of tactile methods and movement, versus a typical auditory-visual style. Children are natural explorers and thrive on the ability to investigate and create. As we view our students for their cultural and ethnic differences and strive to make education a positive reflection of each child's diverse background, it is equally as important to honor each student's unique learning style.

   Multisensory instruction. The use of multisensory techniques to enhance and improve literacy development can be seen in countless areas.   The benefits of using techniques which follow a student's primary learning style, the active movement that is used by students and the excitement the multisensory materials inspires all work together to create increased engagement and motivation. Letter-sound correspondence is an essential, foundational skill for future literacy achievement and it is critical for all students to achieve high proficiency in this area. Labat et al., (2014) illustrated the way multisensory techniques could be utilized to alleviate skill deficiency of 5 year old

students regarding letter-sound correspondence. Labat et al., (2014) found that the combination of visual and hands on multisensory techniques was the most conducive approach to growth in the alphabetic principle and noted that students who received a purely auditory-visual approach of teaching, with no physical contact with letters, exhibited a significantly lower score than those that did. Labat et al., (2014) noted that "highlighting the shape constitutes an effective classroom teaching method and helps young children who are struggling with the alphabetic code" (p. 112). Therefore, the multisensory act of highlighting while practicing a letter was powerful for students, combining action with learning to increase skill proficiency.

Improving reading through multisensory techniques. Multisensory techniques, when incorporated into a literacy curriculum, can increase students' basic decoding skills, particularly with struggling students. Campbell et al., (2008) notes that when using multisensory techniques to aid treatment resistant students, "adding multisensory components (i.e. kinesthetic/tactile to visual-auditory) can assist students in improving reading accuracy" (p. 290). The increased abilities of struggling students in a variety of literacy areas demonstrates the effectiveness of integrating supplemental multisensory techniques into an explicit and direct instruction reading program to increase readers' basic decoding skills. In a study by Joshi et al., (2002), similar growth was found when incorporating multisensory techniques for first grade students. Joshi et al. (2002) notes, "first-grade children taught with the multisensory teaching approach based on OG (Orton Gillingham) principles performed better on tests of phonological awareness, decoding and reading comprehension than the control groups" (p.

237). Clearly, the ability of multisensory techniques to enhance the literacy development of students is evident when appropriately amalgamated into a literacy curriculum.

Multisensory learning in multiple learning settings. Multisensory supplemental programs may also prove beneficial to literacy development in students in a variety of other educational settings/timeframes. Authors Magpuri-Lavell et al., (2014) state that the benefits of "a remedial approach with deep historical roots as an intervention for readers with language difficulties (i.e. dyslexia) is multisensory instruction for language related skills such as sounds, syllables, words, sentences, and written language" (p. 364). Magpuri-Lavell et al., (2014) additionally noted the benefits of using multisensory instruction as a summer program for students and indicated its use as "an effective approach for countering the summer reading setback that most struggling readers face" (p. 370). Therefore, the uses of multisensory techniques and activities may be seen as beneficial to small group intervention, classroom instruction and as a preventative of summer reading loss.

Multisensory techniques and small group intervention. As discussed previously, the benefit of small group instruction is a key element to aiding struggling readers. When students fail to thrive, additional services may be required in intensive reading support groups with specialists. Justice (2006) notes "the need for early and intensive multitier intervention programs is proven by the scientific literature showing that the reading difficulties of a large majority of pupils can be prevented if early and intensive interventions are provided" (p. 294). These intense interventions are critical for a student struggling with literacy development.   However, I would argue that it is equally important that the proper interventions and techniques be utilized during this crucial

small group instruction time to maximize student growth at this critical stage. The use of multisensory techniques and activities for students participating in a response to intervention program is greatly beneficial. The curriculum and teaching professionals chosen to service these children should reflect both an understanding of the learning style characteristics of students who struggle with literacy development, as well as the learning techniques that would enhance instruction, such as multisensory activities to make the small group time as effective as possible.

  Prevention of reading failure. While the critical identification of students who display weakness in foundational reading skills is essential for proper intervention, it should be noted that prevention of reading failure before it begins is a goal for educators and districts to strive for. Scheffel et al., (2008) states that "it is important for early literacy programs to prevent reading difficulties *before* they occur and to rectify them as efficiently as possible once skill deficits are detected" (p. 147). By utilizing proper multisensory instructional practices in the classroom, it may be possible to inhibit some reading weaknesses which could be a key element in preventing reading failure, as well as precluding a child's dislike of reading. Scheffel et al. (2008) found that the use of effective teacher training in multisensory activities to increase the reading skills in first grade students through a supplemental multisensory program proved conducive to student literacy growth. "The IMSE supplemental reading program helped students at treatment schools acquire phonemic awareness (PSF) and alphabetic principle (NWF) skills more effectively than students at comparison schools" (Scheffel et al., 2008, 147). Therefore, it may be possible to prevent frustration in struggling readers if students are given

18

supplemental instruction in literacy curriculum using methods that increase growth in critical reading areas, through effective multisensory instruction.

Conclusion

From reviewing the literature there are multiple key elements that can be utilized to effectively aid struggling readers in the classroom. The importance of small group instruction to carefully diagnose and instruct learners is a key element. Students should be carefully analyzed for various reading weaknesses and grouped appropriately for small group reading instruction. The understanding of students' unique learning styles is also another crucial piece to preventing reading failure. Students' learning styles and characteristics should be reviewed so that instruction and techniques are planned which reflect students' strengths when learning basic decoding skills which are the foundation for their reading successes in the future. This can greatly increase the motivation, engagement and enjoyment of students as they learn material (Simpson & Du, 2004). Additionally, the need to explore the research and benefits of multisensory learning and techniques can be beneficial to teachers and students. The use of multisensory techniques to prevent students from struggling is a powerful tool that may be used to enhance instruction, increase student engagement and motivation and improve core literacy skills.

The combination of small group intervention, learning style and multisensory teaching when successfully merged into a literacy curriculum can be seen in numerous educational areas and settings, from clinical settings to summer programs and can provide numerous benefits and an avenue to prevent reading failure and frustration in struggling readers. This study hopes to illustrate the power of multisensory techniques in a small group intervention setting using the benefits of the multisensory learning style. It

19

attempts to display the growth that struggling readers may have when incorporating

varied multisensory techniques to their basic decoding and spelling skills, as well as how

their motivation increases as their engagement is high. The next chapter of this thesis

explores the design of the research study.

Research Design/Methodology

By using the qualitative research paradigm as the framework of this study, the data gathered is through intimate observations of students, close analysis of information compiled and investigative teacher research. The qualitative nature of the study allows for the teacher researcher to become enmeshed and present in the everyday workings of the study in which the "practitioner himself or herself simultaneously takes on the role of researcher" (Cochran-Smith & Lytle, 2009, p. 41). The in-depth, intimate view from the teacher researcher, which involves the heart and soul of observation and personal data collection is apparent in the study. A quantitative research study would require a more "sterile," clinical setting, in which researcher and participants were not intertwined above a purely statistical nature. Whereas the qualitative research study allows for personal observation and deeper connection between participants, researcher/teacher and outcome, the quantitative research is based on strict measurements and data collection. The personal observations, thoughts and feelings expressed in the qualitative research study allows a deeper understanding and more personal view of the information being collected.

Shagoury & Power (2012) note that teacher research serves as a way of "observing students closely, analyzing their needs, and adjusting the curriculum to fit the needs of all students" (p. 3). Teacher research allows for transformation of self as a teaching professional to allow deeper understanding of students and a forum for discussing information garnered to other professionals (Shagoury & Power, 2012) and is therefore the most meaningful and appropriate mode of research for the study. Cochran-

21

Smith & Lytle (2009) state that practioner (teacher) research is a way to "conceptualize the critical role of teachers' knowledge and actions in student learning, school change, and educational reform" (p. 5). Research begins with an inquiry stance, of which Cochran-Smith & Lytle (2009) state, "when practitioner researchers work from an inquiry stance they are working both within and against the system-an ongoing process, from the inside of problematizing fundamental assumptions about the purposes of the existing education system and raising difficult questions about educational resources, processes, and outcomes" (p. 146). Therefore, the teacher or practitioner research is being conducted in a way so that it questions commonly understood teaching practices, examines current teaching methods for literacy development, analyzes the outcome presented from student data when new practices are implemented and notes the changes that may result from it.

This study analyzes the outcome of utilizing multisensory techniques with students who struggle with reading in second grade. As these students all perform under grade level in decoding and sight words, which greatly hinders their grade level reading progress, the purpose of the techniques used for the study are to enhance the students' abilities to retain and apply decoding skills and sight words with a style of teaching that is both engaging and motivating.

The teacher research framework is well used in this study as students may also express more positive feelings towards reading as an activity and how they feel as a reader in general due to the high motivating activities and growth in skills.

The qualitative inquiry strategies used in this study allow a plentiful amount of data to be collected. This will include a student questionnaire given both before and after

22

the duration of the study. Also, mid-week sight word pretests which will be given which gauge student growth after being initially introduced to multisensory activities, as well as weekly spelling post-tests which will be compared to students' initial testing results. Teacher observations of students' reactions and comments regarding each multisensory activity which has been recorded in my teacher research journal as well as photographic evidence, will also serve as data collected for analysis.

Procedure of Study

Before the study began a careful analysis of the students in my second grade reading support groups was conducted. Of the three groups that I teach for second grade reading support, one group in particular felt right for the study. The group was one of my largest, consisting of five students. Of those five, three of them had had me as a teacher for reading support the previous year. This would mean that the majority of my students and their parents were already familiar with my teaching style and procedures, creating a more seamless beginning to the year. Less time spent on procedures, meant more time with my students, as well as more time for data collection.

Data sources. I investigated the essential data sources that would become a part of my data analysis. The research question focuses on how students might improve regarding their sight word spelling and decoding skills when they use multisensory activities to practice. The first piece of crucial data was in collecting initial assessments that would note students' initial proficiency in several crucial decoding areas. Another assessment would need to be used to gather information about students' sight word spelling skills and will be discussed in further detail.

Initial data collection began at the beginning of the school year, prior to the start of the study. The general education classroom teacher for the students in my study gave the students a teacher created, 120 sight word spelling test. The test was given full class, with the teacher reading each word, in isolation and put into a sentence, while students encoded each word. Each student's 120 sight word test was graded and analyzed for misspellings. Only sight words that received a score of 0% were used for the study to note the maximum growth that the student had between the initial test and the end of week results after working with the multisensory activity for the week.

To gauge the decoding skills of the students involved in the study three tests were given. The first test was a Phonics Screener, given individually to each student. The students were given a list of words featuring specific phonics patterns such as short vowels, blends, magic E or CVCe pattern, etc. The students read each word aloud while I noted miscues.

Two spelling tests were also given to students to note decoding skills. These spelling tests could be compared to students' Phonics Screener reading test to note similarities in patterns of reading versus spelling. The first spelling test was the Second Grade Orton-Gillingham Initial spelling test. The test was given full class to the students, where I read each word featuring a specific phonics pattern aloud and students encoded each word. The test featured phonics patterns that second grade students in our district must acquire and master in their second grade school year and featured short vowels, multisyllabic words, etc.

The second spelling test was the Words their Way Primary Spelling Inventory. The test was again given full class to students, who encoded each spelling word that I

read aloud. The test again featured phonics patterns that the students would need to master in their second grade year, as well as providing an appropriate developmental level that matches with each student's test score. The spelling tests would be used as a way to measure the students' current, beginning of year proficiency with decoding and was a starting point for planning instructional goals for the study as well as serving as an essential comparison to the data collected during the study.

Data collection. Data collection would occur at multiple stages prior to and during the course of the study. As discussed previously, initial testing of essential sight word spelling and decoding skills was completed prior to the study at the beginning of the year. The tests completed by each student would serve as a baseline of data to compare to the growth during and after the completion of the study. Then, during the course of the study, data was collected in several key ways. The students received instruction in my small group classroom every day for two weeks, however four full "weeks" of data were collected. This was possible as these students are generally seen in small group only three days a week. By changing their schedule and seeing them daily for two weeks, it ensured a full four "weeks" of data as students ended a "week" and began the next "week's" data collection on the same day. For example, students would come to small group Monday, Tuesday, Wednesday and that Wednesday would mark the last day of data collection for that week, as well as the initial introduction of materials and concepts of the new "week." Students would then continue that week by coming to group on Thursday and Friday.

Data was collected on a daily, weekly and bi-weekly basis throughout the duration of the study. First, a questionnaire was given at the beginning of the study and

asked the students three key questions: how do you feel you are as a reader, how much do you like reading and how do you feel as a speller. This questionnaire was teacher made and was used at the end of the study as well to note any growth in reading and spelling confidence as reported by the individual students.

A daily teacher research journal was used to collect anecdotal information, note personal reflections, and student reactions to each multisensory activity. The journal would serve as a crucial piece of evidence when looking at the growth of the students daily, weekly and at the completion of the study.

To measure sight word growth, the students were given bi-weekly sight word tests where they were read their sight words and were required to encode each word. As each student was only using sight words during the study in which they had initially scored a 0% in initial testing, the mid-week test served as a way to gauge growth after introduction to the multisensory material. The students were then tested again at the end of the week to note final growth or change in student progress, then compared to the student initial 120 sight word assessment.

The students were assessed on a weekly basis for their decoding skills. An end of week, teacher created spelling test was utilized to note growth in specific decoding skills that the students had shown weakness with in initial testing. After instruction and practice with the key decoding skill with the multisensory material for that week, students took the weekly spelling test. These test scores were compared to the initial spelling assessments given at the beginning of the year. Data collection also occurred on a weekly basis through the use of photographic evidence. Students were photographed

26

while working with each multisensory material. Additionally, parent-teacher conference data was also be utilized as data collection in the month of November.

Data collection by week. Each week of the study consisted of the same general procedures to understanding from the students as well as efficient data collection procedures. The first day of the week students were introduced to the sensory material. Behavioral procedures were reviewed regarding the proper way to handle the material safely and effectively. After teacher modeling the students had time to explore the multisensory material with their hands. This time period ensured that students were able to fully enjoy the sensory material first, so that they could complete the educational activity next without distraction. After the initial exploration of the sensory material, the students were given directions on how would use it to learning their five sight words and decoding skill for that week. The students watched as the teacher modelled the multisensory material and there was time to address student questions. The next session, students took a pretest of the five sight words they were to learn that week. They took this pretest as a whole group, with the teacher reading each student their first word individually and allowing the children time to write the word before moving onto the subsequent words. The students then graded their own test to note where they must study for the next few days. The students then moved to get that week's multisensory activity. After a brief reminder of how they should handle the multisensory material and the behavioral and academic expectations, they were given 10-15 minutes to work with the materials with teacher guidance. The third day of the week, the students are given a last 10-15 minute session to work with the multisensory material. They then returned all materials to their spots and took the posttest weekly spelling test which tested each

27

student on his five sight words as well as real and nonsense words featuring his unique phonics skill. As students mastered their sight words, they were assigned new sight words that they had previously spelled incorrectly from their initial 120 sight word spelling test. The students also progressed through the scope and sequence of phonics skills once they mastered the previous one.

The first week of the study included a teacher made questionnaire which asked the students three questions. The students were asked how did they feel as a reader, how much they liked reading and how they felt as spellers. This questionnaire served as a very quick inventory for each student. The first day consisted of a thorough introduction of what it meant to use multisensory techniques to learn. We discussed what we knew about our senses and how they might help us learn. An introduction regarding the proper behaviors expected with the multisensory bins was discussed as the students would be working with bean bins that week. The students were allowed a few minutes to dig their hands deep into their individual bean beans and to thoroughly explore the textures and weight of the beans on their hands and fingers. The students were instructed on how to dig their five sight words and phonics skill deep into the bean bin without causing beans to fly out of the bins. The students were shown how they could dig out a sight word or phonics skill, for example digraph ch, then write it on their small white board. Words that were mastered the first time were taken from the bean bin and placed just outside of it. Words that proved difficult for each student were again dug down into the bean bin for further practice and exploration. In the second session, students were given a pretest for their five sight words, then asked to grade them by highlighting the incorrect words. The students were then given 10-15 minutes with the multisensory bean bins. At

this point, teacher guidance was given to students still significantly struggling with the majority of their words. The last day of the week was used for a final 10-15 minute session with the multisensory bean beans, in which students dug out their sight words and wrote them on white boards. The students were then given a post-test weekly spelling test featuring their individual five sight words and their particular decoding skill.

The second week of the study consisted of similar procedures, however a new multisensory activity was introduced: wiki sticks. Based upon the results of their spelling test from last week, students received five new sight words, or a combination of new sight words and repetitions of misspelled words from the previous week. Students also had the potential to move forward in their decoding learning after mastering the previous week's lesson on digraphs and short vowels. The students who showed mastery in these areas moved onto two syllable compound words, while the other students used this week as another review period for digraphs and short vowels. The first day of the week served as an introduction to the new materials as well as the behavioral and academic expectations. The teacher modeled how the flexible and colorful wiki sticks could be bent into various shapes, forming letters. By using the wiki sticks, the students could create each letter of their sight words. The bristled texture of the wiki sticks was also utilized as the students were then asked to trace the letters of their sight word after creating it five times as they spelled it aloud. In the second session, students were given a pretest for their five sight words, then asked to grade them by highlighting the incorrect words. The students were then given 10-15 minutes with the multisensory wiki sticks. Teacher guidance was given to students who demonstrated difficulty creating or spelling their words. The last day of the week was used for a final 10-15 minute session with the

29

multisensory wiki sticks, in which students continued to create their sight words, trace the bristled texture with their finger and then spell the word aloud. The students were then given a posttest weekly spelling test featuring their individual five sight words and their particular decoding skill.

The third week of the study involved a new multisensory material: salt trays. As noted in previous weeks, the students were given either five new sight words, or a combination of old and new sight words for this week's spelling test. The students were also assigned a new decoding skill if they demonstrated mastery in the two syllable compound word test. This week some students would be working on the concept of CVCe words, or magic E. The procedures for the week were similar as students began the first session. The students were introduced to the salt trays and given explicit behavioral and academic instructions regarding the multisensory material. The students were then given a free period of time to explore the sensory material before being required to focus on academic work. The teacher modeled how to use her pointer finger to trace the letters of the sight word into the salt on the tray. The students were also showed how to gently shake the tray to clear the tray of the previous letters so that a new word could be written. Students were asked to spell their sight word, trace the letters five times then say the word aloud. In the second session, students were given a pre-test for their five sight words, then asked to grade them by highlighting the incorrect words. The students were then given 10-15 minutes with the multisensory salt trays, tracing their words into the salt, stating the word, then gently shaking the tray to clear the tray of letters. At this point, teacher guidance was given to students still significantly struggling with the majority of their words. The last day of the week was used for a final 10-15

30

minute session with the multisensory salt trays. The students were then given a posttest weekly spelling test featuring their individual five sight words and their particular decoding skill.

In the fourth and final week of the study, students were introduced to the last multisensory activity: shaving cream. As noted in previous weeks, the students were given either five new sight words, or a combination of old and new sight words for this week's spelling test. The students were also assigned a new decoding skill if they demonstrated mastery in the two syllable compound word test. This week some students would be working on the concept of syllabication using the VCCV pattern and open and closed syllables. The procedures for the week were similar as students began the first session. The teacher gave step by step instructions regarding the proper use of the shaving cream as well as strict behavior instructions for its proper usage in the classroom. The students were given t-shirt smocks and were allowed to use the shaving cream that was spread on the table to make shapes and figures with their hands. The teacher then modeled how the students would trace their sight word into the cream using their fingers, trace over the word five times and then spell the word aloud. The students were then asked to repeat these procedures with their own sight words under teacher guidance and support. In the second session, students were given a pretest for their five sight words, then asked to grade them by highlighting the incorrect words. The students were then given 10-15 minutes with the multisensory shaving cream. Teacher guidance was given to students who demonstrated difficulty creating or spelling their words. The last day of the week was used for a final 10-15 minute session with the multisensory shaving cream, in which students continued to create their sight words, trace the word

31

with their finger and then spell the word aloud. The students were then given a posttest weekly spelling test featuring their individual five sight words and their particular decoding skill. The final day of the fourth week was also used to complete the teacher created survey which asked the students the same initial three questions that were asked prior to the study: how do you feel as a reader, how much do you like reading and how do you feel as a speller. Students were also asked if they liked multisensory activities, which multisensory activity they liked the best and why.

Data Analysis

The data sources selected were rigorously chosen as part of the research portion of this study. Multiple points of data were selected to ensure a more complete view of the students' learning profile in regards to spelling sight words and decoding. Prior to the study, I used the test results from the 120 sight word spelling assessment given by the classroom teachers. This assessment served as an essential starting point regarding sight words that each student in the study did and did not know how to independently spell. The 2nd grade Initial Orton-Gillingham spelling test and Words their Way Primary spelling test were also utilized to gain critical information regarding the students' mastery of basic decoding skills and were also utilized to plan the instructional goals for the study. Using the teacher created questionnaire prior to and after the completion of the study allowed me a greater understanding of how, if at all, students felt about their abilities as a reader.

Triangulation. The data collected was analyzed through a process of triangulation. To mark the growth made by students in their sight word skills, the students initial 120 sight word spelling test was compared to their individual mid-week

32

and end of week sight word test to note growth. This was also compared to the teacher research notes taken daily to reflect upon how easily students were able to master their sight words using the multisensory practice.

Students' decoding skills were analyzed through multiple data sources. The initial testing was analyzed to find what common areas of decoding weakness could be found. Teacher created spelling tests were chosen to guide the instruction for the course of the study. The initial test results for each student were compared to both the teacher research journal and the students' end of week spelling test which measured the students' growth in a particular decoding skill, such as magic E or two syllable compound words.

Students' attitudes and self-reported feeling of confidence towards reading and spelling were also noted in the pre and post survey questionnaire. This information was also compared to anecdotal notes made by the teacher regarding student comments throughout the study, as well as returning to the teacher research journal. Photographic evidence was also used to compare student reactions to multisensory materials to their growth as readers and spellers.

At the conclusion of the study, the creation of detailed graphs featuring each student's growth in both spelling and decoding allowed me to see the progress made by each student, as well as to see how the small group did as a whole throughout the study. My teacher research journal allowed me ample opportunity to add personal anecdotes, observations and reflections regarding the study, myself and my students as the study progressed. It also served as excellent archival information as I compared student progress to their weekly comments or actions. The photographic evidence taken each week during the multisensory portions of the lesson also served as powerful

33

reminders of how students reacted to each activity and their engagement and motivation with each multisensory material.

Context

Community. Martin Elementary School is one of three elementary schools in the Martin Township public school district. The population of the district is 20, 726 and is located in southwest Burlington County, New Jersey. In the 2010 Census, of the 20,726 people residing in Martin, there were 7,862 housing units. Of the households in Martin, 61.7% of them have married couples and 38.1% of the households in Martin have children under the age of 18 and the average household size was 2.74.

The racial makeup of Martin Township as seen in the 2010 Census was 84.50% Caucasian, 6.42% African American, .09% Native American, 6.00% Asian, .02% Pacific Islander, .81% from other races and 2.16% from two or more races. Additionally, the Hispanic population was 3.48% in Martin Township as noted in the 2010 Census.

The median household income was $108,655 and the median family income was $129, 217. As stated in the 2010 Census, the per capita income in Martin Township was $58, 458 with 1.4% of families and 2.5% of the population as seen below the poverty line. This included the 3.0% of the population that is under the age of 18.

Martin Elementary School has nearly 300 students from grades Kindergarten to third grade with 40 teachers, paraprofessionals and support staff. The ratio of teacher to student is 1 to 12. The ethnic makeup of the school population is 85.5% Caucasian, 6.4% African American, .1% Native American and 6.0% Asian. Of the students serviced, 3.0% of them are considered below the poverty line. Martin Elementary School is the only elementary school of the three that reside in Martin Township that is a Title I school,

34

receiving extra funds for academic programs and also services all of the elementary level English Language Learners students in the district.

Students. The students chosen for the study come from the same second grade classroom. All were identified through multiple measures: teacher recommendation, 2nd grade Initial Orton-Gillingham Spelling Test and a Running Record. Additionally, if the students were previously receiving small group support with me in first grade, they were automatically eligible for services with me in second grade. There are five total students for this support reading group. Three are boys and two are girls. The ethnic makeup of the group is 3 Caucasian students, 1 African American student and 1 Iranian student. Of the total five students, the three boys were students with me last year: Cam, Tom and Henry. The two girls, Vanessa and Beth are new to reading support this year and were identified in September as needed extra support in reading. None of the students at this time have an IEP or are in the process of going through Child Study Team testing. However, both Cam and Beth may likely be recommended for such testing by myself and their classroom teacher by mid-year.

All of the students in the reading support group were identified as they performed under grade level in reading. Regarding the Orton-Gillingham assessment, Cam scored 33%, Beth scored 13%, Tom scored 13%, Victoria scored 13% and Henry scored 33%. The students additionally were unable to read at grade level standards. The beginning of second grade should see students reading at a J or K level. However, the students in this reading group read in levels ranging from G-I and often present poor comprehension skills.

35

The students are seen mid-morning when their energy and ability to concentrate is still high. Henry is a calm, mature student who is also extremely shy. He is very intelligent but often lacks confidence when reading. He is also an ELL student and often must go back between my classroom and his ELL teacher's classroom as we share him at the same period of time. His ELL status does not affect his reading, rather his confidence is a major concern. Tom is also a very calm and mature student. He has grown much more comfortable in the small group classroom since last year and now smiles easily and tells jokes. He too presents a similar profile to Henry as he is highly intelligent with strong parental support, but simply lacks confidence while reading. Tom, however, is not an ELL student. Cam struggles greatly with focus and attention and is the student in need of the most redirection and guidance. He is the most impulsive of the group and is also the student with the least parental support. He is one of four children at home and is also a twin. His mother has confessed that her young daughters, Cam's older sisters, are the ones to guide the younger boys in their studies. Cam is still somewhat motivated to read though it can be laborious for him. Of all the students he struggles the most significantly and his inattention and failure to thrive is of great concern. Beth is quiet and hardworking. She is seated next to me as she also suffers from attentional issues. In small group she thrives as she is able to have her attention redirected easily and quickly. However, in conversations with her classroom teacher, she is frequently behind the general classroom procedures and is dreamily staring into space or confused as to the directions. Her mother recently met with me to discuss Beth's lack of literacy progress from 1st to 2nd grade and also let me know that she had been fighting cancer which reduced reading practice time to zero last year. Beth works diligently and she and her

mother are committed to her growth this year as a reader. Vanessa is a mature student who is usually compliant, though she can be found to drift off task without gentle reminders. She is very aware of "the rules" and will let the other students know the right thing to do by both her actions (completing tasks as directed) and with occasional comments. She appears to enjoy small group instruction as full class work is overwhelming to her because there are gaps in her skills from last year. In the small group she shines as a student who is able to follow directions easily the first time and complete all work and activities with little to no mistakes. All students in the group are kind to each other and supportive. They work well together both independently as well as a group, with no behavioral issues. Students are seen three times a week for forty minute sessions.

Chapter Four of the thesis will discuss the data collected from the four weeks of the study. Student initial tests, pre and posttest, teacher research journal and photographic evidence will be displayed.

Data Analysis

Introduction

Chapter four examines the findings of my study and discuss how the research question, "How will multisensory experiences aid the learning of key decoding skills and sight words?" was answered. The study was made up of five students struggling with grade level reading skills. Based upon initial assessments given at the beginning of the year, the students were given weekly decoding and spelling skills to master. To practice these skills, they were also given opportunities working with various multisensory activities to enhance their instruction. The data consisted of a variety of sources such as my teacher research journal, student questionnaires and conversations as well as pre and posttests, yielding a plethora of data to analyze. When viewing the data across the scope of the entire study 6 themes were identified as well as some surprising outcomes.

Revisiting the Study

In chapter three, a thorough review of study procedures was conducted. The data was collected over a two week period, but yielded four "weeks" of data. This is due to the fact that students in my small group are generally only seen three times per week for forty minute sessions. I was able to instead see them every day for the entire two weeks, yielding four "weeks" worth of data. First, students were asked to complete a questionnaire which was used to gauge the students' attitudes regarding reading at the beginning of the study. Through this information I was able to create a chart which identified a pattern of reading motivation and like/dislike among the five students. I

38

utilized the various initial assessments of spelling and reading skills given to the students at the beginning of the school year. These included a teacher created 120 sight word spelling test, a second grade Phonics Screener which had students read words featuring common phonics patterns seen in second grade and two spelling tests. The first spelling test was the second grade Initial Orton Gillingham spelling test, while the second was the Words their Way Primary Spelling Inventory. From these initial tests, I was able to note the second grade levels of reading that my students began the year with to target my instruction for key phonics skills that would be used in the study. By recording student comments and using my teacher research journal, I was able to analyze students' individual engagement and note student preferences of the various multisensory activities used as they practiced spelling their sight words each week. This would allow me to see if their preference for working with a multisensory activity led to higher testing results at the conclusion of the week. Students' weekly spelling tests featuring key phonics skills and sight words, were used to gauge student progress and change from their initial testing results. Additionally, parent-teacher conferences and conversations were also utilized to note home support trends. These trends were compared against students' overall academic progress. Finally, students were given a post questionnaire to gauge any change in reading motivation/engagement and attitude after utilizing multisensory techniques.

Sight Word Retention and Preference of Multisensory Activities

One theme that I found during the first three weeks of the study was the connection between a student's enthusiasm and enjoyment of the multisensory activity and his/her ability to retain the spelling of sight words during the end of the week

spelling test. I found that each student had a general preference for a multisensory activity which appeared to invigorate him or her during the week. This engagement seemed to boost not only that student's enjoyment of practicing their sight words, but additionally the retention of those words in future sessions. Ultimately the end of week's spelling test score reflected a higher rate of retention and application. The connection between engagement and academic growth was clear in my students' individual preferences for certain multisensory activities which appeared to allow them a greater chance at retaining sight words that they could previously not spell as seen in a chart at the end of this discussion.

During the first week of the study, the students were introduced to bins filled with beans. I explained to the students that they would be burying their five un-mastered sight words deep into their bean bin, then pulling one out, reading it to me and writing it on their white board. I explained to the students that they should get their hands deep into their individual bean bins and explore the textures, smells and sounds of the beans. While all of the students eagerly dug their hands into the bins, Henry enjoyed this activity most of all. Of all the students, he was able to most easily dig his sight word out of his bean bin, state what the word was and then write it independently on his white board. He not only completed each activity; digging, saying and writing his words independently but his mannerisms also indicated he was more confident. His shy smiles were more and more common as we completed this activity each day.   He typically finished each task more quickly and neatly than his peers and was eager to show his work. At the end of the week, his test scores also indicated growth, moving from a score of 0% accuracy for his five sight words, to a score of 20% accuracy during the mid-week test, then a score of

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100% mastery over his five sight words after utilizing the bean bin activities. The chart

below illustrates Henry's growth in week one.

Table 1

Henry's Sight Word Growth in Week 1

Sight Word Data	HENRY'S SIGHT WORD DATA	as	were	when	will	long
	Initial Test	NO	NO	NO	NO	NO
	Mid-Week	YES	NO	NO	NO	NO
	Posttest	YES	YES	YES	YES	YES
Mid Week Test for Sight Words	Henry data 1 midwk 1 as 2 Wer were 3 Whin when 4 Wil will 5 lang long					
End of Week Sight Word Posttest	1 as 2 Were 3 when 4 will 5 long					

In the second week, the students were introduced to the wiki sticks as their multisensory activity. The students were given bags of colorful, bendable sticks which they could mold into letter shapes. The students would then trace the letters of their word while saying the letters aloud three times. For this activity, Vanessa showed not only an aptitude for making words with the wiki sticks, but also appeared to enjoy the activity the most of all the students. She would neatly shape each wiki stick into a letter before carefully placing it down next to the others. While Cam complained that the making of the words was difficult, Vanessa was able to share some tricks with him to shape his letters more neatly. "Here is how to make a W," she would say, proudly holding her letter up for her classmates to see. Each of Vanessa's words were spaced beautifully and made with precision and detail. Throughout the entire week Vanessa worked diligently on each of her sight words. After making all of the letters in one sight word, she then traced and said the letters carefully, with no teacher reminder of the procedures. Again, her test scores also indicated high growth, moving from a 0% accuracy for the five sight words, to 60% accuracy in her mid-week test and finally a 100% mastery in her end of the week test. The chart below illustrates Vanessa's growth.

Table 2

Vanessa's Sight Word Growth in Week 2

Sight Word Data	VANESSA'S SIGHT WORD DATA	with	what	was	when	how
	Initial Test	NO	NO	NO	NO	NO
	Mid-Week	YES	NO	NO	YES	YES
	Posttest	YES	YES	YES	YES	YES
Mid Week Test for Sight Words	Mrs. Fisher's Rad Readers Name: Vanessa My 5 Sight Words: *Practice SPELLING* 1. With 2. wath 3. was 4. When 5. how					
End of Week Sight Word Posttest	1. With 2. What 3. was 4. When 5. how Vanessa posttest data 2 awesome!					

The third week of the study, the students engaged in a multisensory salt tray. The students were given their own salt tray where they could trace letters and words into the grainy surface with the tip of their finger. A small shake of the tray easily cleared the tray's contents to be used again. The students were asked to write their sight words into

43

the salt tray individually, then trace over each letter while reading aloud, then finally to read the entire word.   For this week, Vanessa, Beth and Tom all excelled and repeatedly told me how much they liked this activity. Vanessa said, "I like it 1,000%!" When I asked her to explain she said, "That means a lot!" When asking Beth she stated with huge, bright eyes, "A LOT! I like it!" Tom had a similar reaction saying, "I like it a lot, A LOT, A LOT!" becoming louder with each repetition. Though Cam had used his fingers and hands eagerly in the salt trays, he expressed no real interest in the activity, stating "I don't like it a lot." Henry took his time answering and I gently told him that if he did not like the materials, he could tell me the truth. "Well," he began, "I like it a bit, but not as much as other things." In one entry during week three I noted, "The students eagerly took to the academic instructions. We practiced our sight words by first writing them in the salt, then saying their letters, then saying the word. Cam and Victoria excel at this kind of activity, needing no further direction or prompts. Beth became more aware of the procedure and began doing it more independently, however Tom needed frequent reminders. Overall the second part of the session was quite successful. The students were eager for the salt trays and had increased confidence in their ability to spell sight words." Therefore, it was Beth, Vanessa and Tom who indicated and stated a noticeable enjoyment of the activity each day and who also had the most growth at the end of the week in their spelling test regarding their sight word accuracy. Beth scored a 0% accuracy for her five sight words, then moved to a score of 100% accuracy mid-week, as well as a 100% accuracy score at the end of the week. Vanessa also scored 0% for her five sight words, then a 100% accuracy in her mid-week test and an 80% at the end of the week. Additionally, Tom also showed high growth as he scored a 0% for his five sight

words, then an 80% accuracy in his mid-week test and a score of 100% at the end of the week. Both Henry and Cam scored lower at the end of the week with an 80% accuracy and 60% accuracy respectively for their sight words during the end of the week spelling test, seeming to parallel their lack of enjoyment of the multisensory activity this week. To illustrate the differences between the engaged students and unengaged students when working with this activity, all of the student's data from week three is shown below.

Table 3

Beth's Sight Word Growth in Week 3

Sight Word Data		BETH'S SIGHT WORDS	when	have	your	has	him
		Initial Test	NO	NO	NO	NO	NO
		Mid-Week	YES	YES	YES	YES	YES
		Posttest	YES	YES	YES	YES	YES
Mid Week Test for Sight Words							
End of Week Sight Word Posttest							

Table 4

Cam's Sight Word Growth in Week 3

Sight Word Data	CAM'S SIGHT WORD DATA	each	would	because	how	just
	Initial Test	NO	NO	NO	NO	NO
	Mid-Week	YES	NO	NO	YES	YES
	Posttest	YES	NO	NO	YES	YES
Mid Week Test for Sight Words						
End of Week Sight Word Posttest						

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Table 5

Henry's Sight Word Growth in Week 3

Sight Word Data	HENRY'S SIGHT WORD DATA	would	because	does	said	read
	Initial Test	NO	NO	NO	NO	NO
	Mid-Week	NO	NO	NO	YES	YES
	Posttest	YES	YES	NO	YES	YES
Mid Week Test for Sight Words						
End of Week Sight Word Posttest						

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Table 6

Tom's Sight Word Growth in Week 3

Sight Word Data	TOM'S SIGHT WORD DATA	where	have	she	then	by
	Initial Test	NO	NO	NO	NO	NO
	Mid-Week	NO	YES	YES	YES	YES
	Posttest	YES	YES	YES	YES	YES
Mid Week Test for Sight Words						
End of Week Sight Word Posttest						

Table 7

Vanessa's Sight Word Growth in Week 3

Sight Word Data	VANESSA'S SIGHT WORD DATA	from	they	now	long	same
	Initial Test	NO	NO	NO	NO	NO
	Mid-Week	YES	YES	YES	YES	YES
	Posttest	YES	YES	YES	YES	NO
Mid Week Test for Sight Words						
End of Week Sight Word Posttest						

After analyzing the students test scores across the duration of the four week study, I found that this theme is significant to the study as it indicates a strong correlation between student engagement and student retention and application of skills. As the study's research question seeks answers to the outcome of using multisensory activities to enhance struggling students' performance in reading, it would appear that a positive outcome of the study is that when struggling students are given activities they prefer to practice their sight word spelling, they perform better in assessments. The chart below illustrates all the multisensory activities used for the study as well as how each student liked that activity. It appears that when students use a material they find particularly engaging, their test results can also improve as a result of their motivation and engagement when practicing that skill.

50

Table 8

Multisensory Activities and Student Preference and Growth by Week

Key:				
☺ **Student felt neutral about activity**		**+ Student indicated more enjoyment**		
☺ **Student liked activity**		♡ **Student loved activity**		
X Student did not enjoy the activity				

	Sight Word Mid-Week	Sight Word End of Week	Attitude
WEEK 1: **Bean Bins**	Beth: 40 Cam: 20 Henry: 20 Tom: 40 Vanessa: 20	Beth: 100 Cam:100 Henry:100 Tom: 80 Vanessa: 40	Beth: ☺ Cam: ☺ Henry: ☺ + Tom: ☺ Vanessa: ☺
WEEK 2: **Wiki Sticks**	Beth: 80 Cam: 60 Henry: - Tom: 60 Vanessa: 60	Beth: 100 Cam:100 Henry:80 Tom: 100 Vanessa: 100	Beth: ☺ Cam: ☺ Henry: ☺ Tom: ☺ Vanessa: ☺+
WEEK 3 **Salt Trays**	Beth: 100 Cam: 60 Henry: 40 Tom: 80 Vanessa: 100	Beth: 100 Cam: 60 Henry:80 Tom: 100 Vanessa: 80	Beth: ☺+ Cam: ☺ Henry: ☺ Tom: ☺+ Vanessa: ☺+
WEEK 4 **Shaving Cream**	Beth: 100 Cam: 80 Henry: 100 Tom: 80 Vanessa: 80	Beth: 100 Cam: 20 Henry:100 Tom: 100 Vanessa: 100	Beth: ♡+ Cam: ♡+ Henry: ☺ Tom: ♡+ Vanessa: ♡+

Repetition and Growth

Repetition and student growth in decoding was a category that emerged from the data analysis which was noted during the duration of the study in all students. In initial

testing, students were given a variety of assessments to gauge second grade reading readiness skills. The target skills pulled from the Orton-Gillingham and Primary Words their Way Spelling Assessments for the purposes of this study included a student's ability to hear and spell words featuring short vowels, digraphs, magic E and words featuring multiple syllables. Reflecting upon the student tests scores across the duration of the study with regard to decoding, I found that all students grew from their initial tests in each of the targeted areas after repetition with multisensory activities was completed over three days. The chart below reflects the students' initial test scores at the beginning of the year. The chart is broken down into the instructional decoding skills that would be addressed during the study.

52

Table 9

Initial Student Assessment Scores Prior to Study

	Beth	Cam	Henry	Tom	Vanessa
O.G. + WTW Spelling *Short Vowels* *buzz, strand, skill, sprill, slaff, plont, gress, flunt, fan, pet, dig, rob, gum, sled, stick	12/15 or 80% used correctly **BUT** 7/15 or 46% spelled correctly	13/15 or 86% used correctly **BUT** 7/15 or 46% spelled correctly	10/15 or 66% used AND spelled correctly	14/15 or 93% used correctly **BUT** 6/15 or 40% spelled correctly	15/15 or 100% used correctly **BUT** 6/15% or 40% spelled correctly
READING **Phonics Screener:** *Short Vowels* *jab, vet, dim, fog, hug, tag, wed, bit, cob, bun	9/10 or 90%	10/10 or 100%	10/10 or 100%	9/10 or 90%	6/10 or 60%
WTW Spelling *Digraphs* *shine, coach, chewed, wishes, thorn, shouted, third	6/7 or 85% correct digraph used **BUT** 1/7 or 14% spelled correctly	5/7 or 71% correct digraph used **BUT** 0/7 or 0% spelled correctly	7/7 or 100% correct digraph used **BUT** 3/7 or 42% spelled correctly	7/7 or 100% correct digraph used **BUT** 2/7 or 28% spelled correctly	6/7 or 85% correct digraph used **BUT** 0/7 or 0% spelled correctly
READING **Phonics Screener: Digraphs** *chat, shine, wheel, thin, punch	1/5 or 20%	3/5 or 60%	5/5 or 100%	4/5 or 80%	4/5 or 80%
WTW Spelling: *Magic E* *hope, shine	0/2 or 0%	0/2 or 0%	2/2 or 100%	1/2 or 50%	0/2 or 0%
READING **Phonics Screener:** *Magic E* *safe, Pete, wide, bone, cube	4/5 or 80%	2/5 or 40%	5/5 or 100%	1/5 or 20%	3/5 or 60%
O.G. + WTW Spelling *Multisyllabic words* *indent, vacant, standstill, climax, bombastic, discuss, compact, wishes, shouted, clapping, riding	1/11 or 9%	2/11 or 18%	3/11 or 27%	2/11 or 18%	2/11 or 8%

Short Vowels and Digraphs

In Beth's initial assessments, she received a score of 80% accuracy regarding her correct usage of short vowels and an 85% accuracy when using digraphs. After instruction and use of multisensory activities, Beth scored a 100% accuracy in spelling one syllable words featuring both short vowels and digraphs. Cam scored an 86% accuracy in correctly using short vowels and 71% accuracy when using digraphs in his initial assessments. After instruction and use of multisensory activities, his spelling test

53

featuring digraphs and short vowels dipped, featuring only 60% accuracy. However, after an additional week of review, Cam retook the test and received a score of 100% accuracy. Henry's initial test scores had a score of 66% accuracy when using short vowels and 100% accuracy when using digraphs. After multisensory instruction, he scored 100% accuracy on words featuring short vowels and digraphs. Tom had a high score of 93% accuracy when using short vowels and an 80% when using digraphs during initial testing. His spelling test score after instruction and use of multisensory activities was 100% accuracy. Vanessa had similar scores, with a 100% accuracy when using short vowels and a score of 80% when using digraphs during initial testing. Her first spelling test featuring short vowels and digraphs received a score of 85% accuracy and like Cam, she was given an additional opportunity to retake the test. After a week of further repetition and practice using multisensory activities, Vanessa also received a score of 100% accuracy regarding words with digraphs and short vowels.

Multisyllabic Words

The ability to accurately spell multisyllabic words was challenging for all students who participated in the study. Beth scored a 9% accuracy when attempting to spell multisyllabic words during initial testing. Cam, Tom and Vanessa all scored an 18% accuracy and Henry had a score of 27% accuracy during initial testing regarding the spelling of multisyllabic words. After a week of using shaving cream in the fourth week of the study to practice the VCCV syllabication pattern featuring open and closed syllables, the students showed growth from their initial testing scores featuring multisyllabic words. During their end of week spelling test Beth scored a 100% accuracy, Cam scored an 80% accuracy, Henry scored an 89% accuracy, Tom scored a

54

98% accuracy and Vanessa scored a 91.5% accuracy when identifying the VCCV pattern

in multisyllabic words. The students also showed aptitude in being able to write words

featuring the VCCV pattern during student-teacher practice. The chart below indicates

the beginning of year initial test scores and then compared them to weekly spelling tests

which addresses each skill and which illustrates growth for each student.

Table 10

Initial Student Assessment Scores vs. Weekly Spelling Test Growth

	Beth	Cam	Henry	Tom	Vanessa
O.G. + WTW Spelling *Short Vowels* *buzz, strand, skill, sprill, slaff, plont, gress, flunt, fan, pet, dig, rob, gum, sled, stick	12/15 or 80% used correctly **BUT** 7/15 or 46% spelled correctly	13/15 or 86% used correctly **BUT** 7/15 or 46% spelled correctly	10/15 or 66% used AND spelled correctly	14/15 or 93% used correctly **BUT** 6/15 or 40% spelled correctly	15/15 or 100% used correctly **BUT** 6/15% or 40% spelled correctly
READING **Phonics Screener:** *Short Vowels* *jab, vet, dim, fog, hug, tag, wed, bit, cob, bun	9/10 or 90%	10/10 or 100%	10/10 or 100%	9/10 or 90%	6/10 or 60%
WTW Spelling *Digraphs* *shine, coach, chewed, wishes, thorn, shouted, third	6/7 or 85% correct digraph used **BUT** 1/7 or 14% spelled correctly	5/7 or 71% correct digraph used **BUT** 0/7 or 0% spelled correctly	7/7 or 100% correct digraph used **BUT** 3/7 or 42% spelled correctly	7/7 or 100% correct digraph used **BUT** 2/7 or 28% spelled correctly	6/7 or 85% correct digraph used **BUT** 0/7 or 0% spelled correctly
READING **Phonics Screener: Digraphs** *chat, shine, wheel, thin, punch	1/5 or 20%	3/5 or 60%	5/5 or 100%	4/5 or 80%	4/5 or 80%
WEEKLY SPELLING TEST Digraphs and Short Vowels	100%	60% Retake: 100	95%	100%	85% Retake:100%
WTW Spelling: *Magic E* *hope, shine	0/2 or 0%	0/2 or 0%	2/2 or 100%	1/2 or 50%	0/2 or 0%
READING **Phonics Screener:** *Magic E* *safe, Pete, wide, bone, cube	4/5 or 80%	2/5 or 40%	5/5 or 100%	1/5 or 20%	3/5 or 60%
O.G. + WTW Spelling *Multisyllabic words* *indent, vacant, standstill, climax, bombastic, discuss, compact, wishes, shouted, clapping, riding	1/11 or 9%	2/11 or 18%	3/11 or 27%	2/11 or 18%	2/11 or 8%
WEEKLY SPELLING TEST: 2 SYLL COMPOUND WORDS	100%	*Retaking Digraph and SV test	100%	100%	*Retaking Digraph and SV test
WEEKLY SPELLING TEST: MULTISYLLABIC WORDS + MAGIC E	100%	80%	70% *due to ELL time share Retake post study	100%	90%
WEEKLY SPELLING TEST: MULTISYLLABIC VCCV STRATEGY	100	81%	94%	94.5%	91%

Further Growth: Reading Levels

   To fully understand the findings for the students' growth in the targeted decoding skills, I carefully graphed and compared their official initial test scores with their weekly spelling test results, referred to my teacher research journal notes and also noted any changes that I saw in their reading levels since our sessions began at the beginning of the year. I wished to fully investigate my students' growth over the four week period in both acquiring, retaining and applying the decoding skills that were targeted for the study's duration. Typically, students in second grade in reading support have limited growth in the beginning of the year and instead make steady progress after the holiday vacations and in the spring.   Below is a chart mapping the change in each student's reading level from the beginning of the year to the end of the study.

Table 11

Pre and Post Study Student Reading Levels

Name of Student	Pre Study Reading Level	Post Study Reading Level
Beth	H	J
Cam	H	I
Henry	I	K
Tom	I	J
Vanessa	G	I

Starting the year at a level G, I was happy to see that Vanessa grew to a level I during the beginning of the school year until the end of the study. Cam also had similar growth, moving from a level H to a level I. Both Henry and Tom started the year at a higher level, accessing text at a level I and quickly moving to a K and J respectively. Beth also grew from her initial level H, now reading level J books with ease. It was wonderful to see and hear the students reading words featuring the targeted decoding word skills that we had been practicing in sessions, with more ease in the context of a full text. The students were more easily able to decode and identify parts of unfamiliar words, pointing out digraphs and magic E. When coming across a multisyllabic word, the students also now had the ability to stop and attempt to syllabicate it, first noting if it was a compound word, or if it could be broken down into the VCCV pattern that we had learned. When we read his book during one of our sessions, Cam eagerly spoke up and said, "It's a digraph! I see it! It's digraph CH!"

Multisensory Activities and Reading Enjoyment

I also compared the students' academic growth after repetition with multisensory activities to my notes in my teacher journal. In one entry I noted the students' growing enjoyment as readers. "After quickly grading their spelling tests I introduced the new skill that they would be completing this week. They were so proud of themselves when I told them how well they all did on their tests and were saying, "YESSSS!" The air sounded like a thousand excited snakes! I was just happy that they were learning, happy snakes." I also found that when grading their spelling tests initially during the beginning of the study, I found myself worried that a student had not gotten a 100% accuracy score. I had to remind myself to look back at the student's initial tests to truly understand where

58

that student had begun the school year. A score of 80% accuracy with regard to multisyllabic words may not mean mastery, but when compared to its beginning of year score of 18% accuracy, the implication is clear that the student is learning and benefitting from instruction.

The Messier the Better

Another category that I found throughout the study was with regard to the messiness of the multisensory activities. I planned each activity from least messy to most messy with week one and two being of similar messiness. The following is a chart of the multisensory activities conducted throughout the study.

Table 12

Multisensory Activities Organized by Week and Messiness and Compared to Student Preference

Messiness	Activity	Attitude
Least Messy	WEEK 1: Bean Bins	Beth: ☺ Cam: ☺ Henry:☺ + Tom: ☺ Vanessa: ☺
Somewhat Messy	WEEK 2: Wikki Sticks	Beth: ☺ Cam: ☺ Henry: ☺ Tom: ☺ Vanessa: ☺ +
Messy	WEEK 3 Salt Trays	Beth: ☺ + Cam: ☺ Henry: ☺ Tom: ☺ + Vanessa: ☺ +
Most Messy	WEEK 4 Shaving Cream	Beth: ♡ + Cam: ♡ + Henry: ☺ Tom: ♡ + Vanessa: ♡ +

We began week one with bean bins. Each student would receive his own individual bean bin and messes and spills would be at a minimum. Students would dig their hands into the bean bin and no clean-up of the students' hands or the classroom was necessary at its end. The second week the students each received a bag of bendable wiki sticks. While this activity required that the students spread out across their work area to create their sight words, it was easy to bend the sticks back into straight lines to be reused

60

again. Again, no cleanup was necessary and students did not need to wash up afterwards.

The third week ushered in our first messy activity, salt trays. The students would be given an individual salt tray and would use their index finger to write their sight words into the grainy texture. The potential for more mess was more prominent as salt was more likely to be sprinkled on the table and floor. The students would also need to gently shake their trays to clear them of letters, thus creating another opportunity for a few more messes. The last week featured our culminating sensory activity: shaving cream. For this activity the table was covered with layers of press and seal for easier clean up at the end of the session. Also, each student received a cookie tray, gloves, a smock and a dollop of shaving cream for their cookie tray. This was by far the most messy and entertaining of the sensory activities. The potential for shaving cream to end up on clothes and arms was very real and almost 100% guaranteed. During this activity the students squished and smashed the shaving cream between their glove covered fingers and onto the surface of their cookie tray. They ran their fingers through the cream to make letters and words.

What I discovered over the course of the study was that the number of students who loved an activity increased with how messy it was. I was able to chart the students' enjoyment of the activity and compare it to the messiness of the multisensory instruction. In our first week, we all five of the students said that they "liked" the bean bin activity. No student claimed that they either loved nor hated it, though all engaged in it enthusiastically. Turning to my teacher research notes I even discovered, "The students enthusiasm had not stopped and I realized that using the same multisensory bin for one week is beneficial both in learning how to use the item as well as keeping the students interested in the material." The following chart displays week one's comparison of

students' engagement to the messiness of the activity.

Table 13

Week 1 Multisensory Activity Messiness and Preference

Least Messy	WEEK 1: Bean Bins	Beth: ☺ Cam: ☺ Henry: ☺ + Tom: ☺ Vanessa: ☺

The next week featured our wiki sticks multisensory instruction and Beth, Cam, Tom and Vanessa all stating they "liked" the wiki sticks, with Henry stating the activity was simply "ok." However, I did note that the students seemed to enjoy sharing their creations, the novelty of which may have inspired how well they liked the activity. I wrote in my teacher research journal, "I found that with this multisensory activity the students engaged in more classroom conversation. While observing them, I found that they talked more with each other. The conversation was educationally/activity based and I found that they were helping each other." While no one loved this activity, more social engagement commenced, increasing student enjoyment. The following chart displays week two's comparison of student engagement to the messiness of the activity.

Table 14

Week 2 Multisensory Activity Messiness and Preference

Somewhat Messy	WEEK 2: Wikki Sticks	Beth: ☺ Cam: ☺ Henry: ☺ Tom: ☺ Vanessa: ☺ +

Our next week featured our first truly messy multisensory activity, salt trays. Of the three multisensory activities tried so far in the study, this was the first time that students voiced that they loved an activity. Beth, Tom and Vanessa all stated that they "loved" this activity while Henry found that he liked it and Cam expressed a general dislike of the salt trays. After reviewing pictures of the students as they worked with the salt trays I found that Cam's words in his salt tray were poorly spaced and illegible compared to his peers. I turned to my teacher research notes and found my notes stating, "Observing the students, I found that Beth, Tom, Vanessa and Henry were carefully writing each of their words in the salt. They had the ability to appropriately space their words with little help from myself and they were absorbed in their task. Cam had more trouble, writing two large letters in the salt and then not having enough room to continue." The following chart displays week three's comparison of student engagement to the messiness of the activity.

Table 15

Week 3 Multisensory Activity Messiness and Preference

Messy	WEEK 3 Salt Trays	Beth: ☺ + Cam: ☺ Henry: ☺ Tom: ☺ + Vanessa: ☺ +

In the last week of our study, we began our instruction with the messiest
multisensory activity of all, shaving cream.   Referring to my teacher research journal, it
states, "When I squirt the first dollop of shaving cream onto Beth's cookie tray they erupt
in giggles. "It smells good!" Beth says. "Oh, I could smell this all day," moans
Cam. The students all look comical, their hands raised away from the table and covered
in gloves, their bodies drowning in t-shirts which serve as my temporary smocks, their
eyes lit with anticipation and practically bouncing in their seats." This activity was the
one that students enjoyed the most, with the exception of Henry. Beth, Cam, Tom and
Vanessa stated that they "loved" this activity, while Henry thoughtfully told me, "My
mother put me in a nice outfit today. She said I looked handsome. I like it [shaving
cream], but I don't like it getting on my clothes." Clearly, the messier the activity, the
more the majority of my students enjoyed it. The following chart displays week four's
comparison of student engagement to the messiness of the activity.

64

Table 16

Week 4 Multisensory Activity Messiness and Preference

Most Messy	WEEK 4 Shaving Cream	Beth: ♡+ Cam: ♡ + Henry: ☺ Tom: ♡+ Vanessa: ♡+

Attention and Retention

An additional pattern that I found throughout the course of the four week study period was with regard to attention/focus and retention of decoding and sight word accuracy skills. When reviewing the students' overall test scores, I found that Beth and Tom performed higher on spelling tests and sight word accuracy. Overall, Beth had a score of 100% for overall growth in decoding over the course of the four week study. She additionally had a score of 100% accuracy for learning 20/20 potential sight words. Tom had a score of 98% for his overall growth in decoding as seen in his spelling tests, as well as a score of 90% accuracy for learning 18/20 potential sight words. However, the student who most frequently needed redirection was Cam, who additionally scored the lowest in both his decoding and sight word accuracy, with scores of 80% and 70% respectively for each skill

Looking back at pictures of my students as they completed their work, as well as notes from my teacher research journal, the attention and focus of certain students jump out at me. In my teacher research journal I write, "…I work with Cam and Vanessa. The two latter students did not master their short vowels and digraphs. Vanessa illustrated

some trouble with digraphs sh and ch, while Cam had difficulty with almost all of the digraphs. This is troublesome as this was a major skill learned last year. Again his attention and focus are not as strong as I would wish it and I continue to worry about his slow progress and lack of retention." Looking at pictures, I see that Beth is engaged, eyes focused on her task and her writing in her sand tray, or the letters made with wiki sticks are neatly organized and tidy. Several pictures of Cam has his eyes moving around the room and when practicing with the wiki sticks, his words look watery and loose, spilling into his neighbors work space.

Comparing the concrete total academic progress of the aforementioned students with trends in pictorial and anecdotal form in my teacher research journal, attention/focus and the ability to retain and apply skills appears to correlate. The student who is able to not only be engaged in a sensory manner, but who is also able to maintain his attention during the duration of the activities, appears to more likely succeed when independently assessed. Additionally, the focused student appears to be able to progress more rapidly and maintain higher academic levels during assessments.

Home Support and Decoding Growth

An additional and surprising pattern that emerged from the study was in my observations of student growth and home support. Of the five students, Beth has the strongest home support, which is both consistent and constant. Her mother is readily available through email, phone or face-to-face conference and she is a definitive, positive presence in her daughter's life. Tom, Vanessa and Henry follow with parents whom I can contact easily and who respond quickly to conference requests. While the home support for these students is fairly strong, it can be somewhat inconsistent. Hectic work

66

schedules, families with multiple children and sport schedules all contribute to the somewhat fluctuating home support and also influences the observed fluctuation in academic growth. Cam is the only student who has no consistent home support. My teacher research journal notes, "Cam's home support is minimal, with his adolescent sisters, only one and two years older than he, providing minimal support for practice at home with reading. Lack of consistent home support and attentional issues has hindered his growth. He frequently wears disheveled clothes, has hands and fingernails that are quite dirty and can sometimes smell of cigarettes and/or urine. His attention is often pulled from instruction and he will slump in his seat, looking somewhat tired. Mom has also noted that the boys pretty much have their own schedule at home to do as they like as both parents must work, therefore bedtime is inconsistent and is whatever time they feel like going to bed."

After analyzing the students' academic progress for consistency, retention and application and comparing it to my teacher notes and conferences with my parents, I find that the students with the most consistent support have excelled the most during the four week study. Beth initially showed consistent progress and was able to maintain mastery of each decoding skill and of her sight words each week. During the four weeks of the study she has scored a total of 400/400 potential points for the four spelling tests, resulting in an overall 100% accuracy for the her decoding skills as seen in her four weekly spelling tests. Tom was the next highest student, scoring 394.5/400 potential points for his decoding skills, resulting in 98% accuracy for the four spelling tests. Vanessa scored the next highest in her decoding skills with a score of 366/400 potential points, resulting in an overall score of 91.5% accuracy for the duration of the study.

Henry was the fourth best student with a score of 89% accuracy overall for decoding skills as seen in his four spelling tests, or 359/400 potential points. While I find Henry a naturally intelligent and capable student, I noted fluctuations in his test scores, jumping from a 100% on one test, to a 70% on another and then back to a 94%. Turning to my teacher research journal I found this entry, "My thoughts are more directly related to Henry this morning.   After noting his test scores, I wanted to ensure that there was more time to spend with him individually. I asked him how reading and studying was going at home as his mother stated that she was working better hours now. He said, "Well it is like 1st grade. At the beginning of the year it is good and we remember. But now…now we forget and it gets harder." The fluctuation in support clearly affects him and his ability to maintain his academic growth.

Cam had an ending score of 80% after the four weeks of the study, with a score of 320/400 potential points. He too had greatly fluctuating scores over the course of the study jumping from 100% to 60% then to 80%. Below is a chart illustrating Cam's academic growth with his initial testing, his weekly spelling tests and then overall growth for the duration of the study.

Table 17

Cam's Overall Academic Growth

	Weekly Spelling Test	Sight Word Mid-Week	Sight Word End of Week
WEEK 1 Digraphs and Short Vowels	Cam: 60%	Cam: 20%	Cam:100%
WEEK 2 Digraph and Short Vowel	Cam: 100% (retake)	Cam: 60%	Cam:100%
WEEK 3 2 Syllable Compound Words + Magic E	Cam: 80%	Cam: 60%	Cam: 60%
WEEK 4 VCCV Multisyllabic Pattern	Cam: 81%	Cam: 80%	Cam: 20%
Overall Growth	Cam: 80% or 320/400 points	Cam: 80%	Cam: 70% or 14/20

I turn to my teacher research journal to recall specific thoughts on his lack of practice, "Sometimes he will come in and tell me, "I had football practice so I was out really late and didn't do any homework."   I often wonder-is it more difficult that his mother is very kind and affable or worse? She seems to perfectly understand that her son is struggling and when he was in kindergarten several years ago approached me and said, "You will be seeing both of my boys in your classroom. They are really not doing anything academically."

I also compared my students' academic progress with the notes from my students' first parent-teacher conference of the year, in November. Beth and Henry's parents answered quickly to the conference requests and we met, discussing further strategies to aid and support their child as well as ways that the parents can also be supported. Turning to notes from my conference I wrote, "Beth's mother stated that, "Beth is less intimidated

by reading at home and she seems to enjoy reading much more now. She will actually bring a book to me at bedtime to read together now." Also, Henry's mother says that Henry's growth since first grade continues into second. When we discussed other ways to continue to have Henry practice at home she stated, "Henry loves to vlog. He reads books to a friend who lives in Africa. He sends her videos of himself reading." Together we worked together to devise a strategy to allow Henry to vlog (video talking about topic) about one book per week so that he doesn't feel overwhelmed by reading, but also continues to practice it. Tom's mother meets with me next stating that she too has seen Tom's growth, not only academically, but socially as well. He is excelling at things outside of school as well as in his studies. Cam's mother is a joint conference between myself and his full classroom teacher and is one where we express our concerns. She is not surprised and when we make suggestions on how to help Cam, airily waves them away saying, "Oh, each of the girls [her daughters] has adopted one of the boys. They work together almost every night now."

From comparing the students' overall growth from the duration of the study period, with notes from my teacher research journal, as well as conferences with parents, the correlation between a student's continued and maintained growth and home support is more solidified. The high level of support that is received by the student appears to both boost a student's confidence in and out of the home, as well as enabling that student to meet success in the classroom and when performing on academic tests.

Enjoyment of Reading, Confidence Growth and Multisensory Activities

At the beginning of the study, I met with each student individually to complete an informal questionnaire prior to the beginning of the study. I explained to students that

they should be as honest as they could and any answer they gave would be fine with me. When comparing my students' responses to the first question with their responses to the same question at the end of the study, I found a theme that suggested that students' enjoyment of reading grew after completion of the multisensory activities. The question was, "How much do you like reading?" The students' responses prior to the study were:

Tom said, "Yes-um, like some."

Beth shyly stated, "Yeah, a little."

Though he could not articulate more what he meant by this, Cam said, ""Yeah, um…like 50%!"

Henry said, "Like not all the time, but sometimes."

Vanessa said, "Sometimes…I don't really know."

Clearly, prior to the study, the students found that they were only somewhat interested in reading. They found it hard to describe if they liked it very much and only occasionally did they find themselves enjoying the activity as seen in Henry's comment of, "Like not all the time, but sometimes." The chart below marks the student's self-reported enjoyment of reading at the beginning of the study.

Table 18

Students' Enjoyment of Reading Prior to Study

Key	
♡ Student loves reading	
☺ Student somewhat likes reading	
X Student does not like reading	
Student Name	Self-reported Enjoyment of Reading Prior to Study
Beth	☺
Cam	☺
Henry	☺
Tom	☺
Vanessa	☺

After completion of the study, I brought the students in for our final day to ask the

students the same questions from our initial questionnaire to note any patterns and

growth. After being asked again, "How much do you like reading?" The students'

responses were quite different from their initial statements:

Tom said, "I love it!"

72

Beth stated, "A lot!"

Cam said, "Medium!" When I asked him to elaborate, he then changed his answer to "90%!"

Henry said, "I like it a lot. First I actually didn't because I had trouble. Now, I like it a lot."

Vanessa said, "A lot."

After analyzing their responses I found that all of the students appear to have grown significantly in their positive feelings regarding reading. They changed their initial statements describing their enjoyment of reading from "a little," or "sometimes," to excited exclamations of "a lot!" The chart below marks the changes in student's attitudes towards reading.

Table 19

Students' Enjoyment of Reading Post Study

Key		
♡ Student loves reading	X Student does not like reading	
☺ Student somewhat likes reading		
Student Name	Self-reported Enjoyment of Reading Prior to Study	Self-Reported Enjoyment of Reading After Study
Beth	☺	♡
Cam	☺	☺ to ♡
Henry	☺	♡
Tom	☺	♡
Vanessa	☺	♡

An additional pattern I found was after asking the students additional questions in the post questionnaire after experiencing multisensory instruction for the past four weeks. The students were asked if they liked our multisensory activities and if they thought it helped them as readers and spellers after instruction.

All students stated that they liked all of the multisensory activities, with the exception of Henry who said, "Well…I didn't like the shaving cream a lot. But everything else I liked."   When asked if they felt the multisensory activities helped them as readers and spellers, all students agreed that they had at least helped them grow as spellers, but not necessarily that it helped them as readers. However, after carefully

74

reviewing their responses of how confident they *felt* as a reader in the pre and post

questionnaires, all students except for Beth felt they had improved as readers. At the end

of the study, Cam went from stating, "I'm not a very good reader," to feeling "great!"

Vanessa also moved from feeling she was a "good" reader to stating, "I feel great." Tom

moved from, "I'm a good reader," to saying to me with pride, "I'm good, maybe great."

Henry also changed in his perspective of himself, moving from his initial statement of,

"I'm not the best, but I'm not saying I'm not good," to shyly telling me that he felt his

reading was, "In the middle-between good and great." Beth was the only student who

felt she was a good reader prior to the study and who felt she remained a good reader at

the end.

After analyzing the student responses in surveys given prior to and after the study

was completed I also analyzed the students' weekly and overall test scores and my

teacher research journal notes. I found that there appeared to be a connection between

growth in reading enjoyment, positive attitudes towards the students' feelings as readers

and spellers and the use of multisensory activities. The majority of the students enjoyed

all of the multisensory activities completed during the four week study period and after

analyzing the students' test results, I noted that they also all improved significantly in

both their sight word spelling and decoding skills. In comparing students' personal

responses to the pre and post questionnaire, I found that the students' might not feel that

the multisensory activities directly affected their reading abilities, but it did seem to

positively affect their feelings about themselves *as* readers. The use of multisensory

activities, therefore, appeared to increase both the students' enjoyment of reading as well

as their feelings regarding their spelling and reading abilities.

Summary of Data Analysis

   The purpose of this study was to investigate if the use of multisensory instruction and activities could enhance the decoding and spelling of sight words for struggling students. By analyzing the data sources that I collected over the four weeks of my study I was able to find that students' individual preferences for certain multisensory activities enhanced their abilities to perform on academics tests measuring their decoding skills, such as those seen in our weekly spelling tests. I was also able to note that students have grown significantly in all targeted decoding areas and with regard to previously un-mastered sight words after multisensory instruction and practice. Additionally, the majority of students indicated that the messier the multisensory activity was, the more they enjoyed it. It seemed that the messier the activity was, the better. Students also displayed an increasing amount of aptitude to retain and recall skills according to the amount of focus that was observed. Students who were able to focus on the multisensory tasks during the duration of the study were also those that showed significantly higher test scores and the ability to retain and apply information later on. The data also yielded a theme which suggests that a student's amount of home support has a direct positive correlation to his/her academic continued and maintained growth. Students who had parents who were highly engaged in their lives and who offered academic support were also those who were able to perform at a higher academic level. Also, when comparing the students' questionnaire statements prior to and after the study's completion, a pattern emerged that appeared to link the use of multisensory activities to both an increase in reading enjoyment, as well as increased self confidence in the areas of reading and spelling. The data suggests that the students' high enjoyment of the multisensory

activities could correlate to their increased confidence in reading activities, as well as their overall enjoyment of the act of reading.

Chapter five discusses the conclusions and implications of the study as well as recommendations for further research.

Summary, Conclusions, Limitations and Implications for the Field

Summary

At the conclusion of my study, I discovered that my students had grown in many critical areas after using multisensory activities to enhance their instruction. Each week they had worked to master a specific decoding skill as well as accurately spell five sight words that they had been unable to spell at the beginning of the school year. The five students engaged in bean bins, wiki sticks, salt trays and shaving cream activities during the course of the four week study. After analyzing the data from the four weeks, I found that a student's preference for a particular multisensory activity was matched by increased scores on his end of week test for sight words. His engagement with the materials used allowed for greater enjoyment of learning and ultimately greater growth in learning and retaining skills.

During the course of the four weeks, I found that the students benefitted from the repetition of our instruction through the course of the week. The act of continually practicing their sight word and decoding skills in the multisensory materials allowed the students to grow from their initial assessments at the beginning of the year by displaying increased mastery and accuracy at the end of each week. Students increased in both their sight words and decoding skills by the end of each target week. Students were also found to have grown between one and three reading levels.

Analysis of the four weeks of data collected indicated that mess was best. The students' attitudes and comments regarding each week's sensory material indicated that

78

the majority of students liked the messiest activities the best, with practice in shaving cream being the favorite for the majority of the group. While students' expressed a general enjoyment of all activities, the messier the activity was, the more students verbally and physically displayed their enjoyment of the activity.

An additional finding for the study illustrated that when students were more actively engaged in their learning, as seen through the multisensory activities, their learning and retention of skills increased. For students who were focused and engaged throughout the entirety of our practice of sight words and decoding skills with our multisensory materials, a higher score was reflected in their final end of week test scores. An unfocused student meant less concrete academic growth and progress was illustrated each week and overall throughout the study.

A correlation between a student's home support and his academic growth was also illustrated through the duration of the study. Of the five students, one student had the most consistent home support and her growth was ultimately the highest and most consistent of the students. Three of the students had high-moderate home support, however it was also inconsistent. The more inconsistent the home support, the more the student experienced highs and lows throughout the study when analyzing their test results. For the student with the least amount of home support, it corresponded to having the least amount of growth during the study in decoding.

Lastly, I found that when conducting the study's post study questionnaire that a positive correlation could be made between the use of multisensory activities and students enjoyment of reading and a higher self-report of confidence as a reader. Prior to

the study, the students were given a pre-study questionnaire asking how they felt as a reader, did they like reading and how did they feel as a speller. All students reported liking reading as well as feeling they were not good-to-being a good reader. At the conclusion of the study the students were asked the same questions. All students reported loving reading at the end of the study and all students except one reported feeling that they felt that they had improved as readers.

Conclusions. After analysis of the data was complete, I found that the study was beneficial to my students in a variety of ways. I found that my students, who struggled initially with grade level decoding and spelling skills had all grown significantly from their initial beginning of year test scores. As quoted in chapter two, the student who displays a lack of strength in reading is at risk for not only reading failure, but an increase in his dislike of reading versus his academically stronger peers (Campbell et al., 2008). By utilizing multisensory activities, I found that students increased their engagement and their ability to retain and apply skill in decoding and spelling. I also found that the more engaged the student was, the higher they tested at the end of the week.

I found that my research also supported the idea given by Campbell regarding underachievement of students. As noted in chapter two, Campbell et al., (2008) provides a possible cause for the continued underachievement of some students, that "too often, students are instructed indirectly, watching and listening to the teacher or other students..." (p. 268). The multisensory activities that the students used throughout the four week study were hands on, with students directly in charge of their learning. They were able to communicate amongst themselves in academic conversations, sharing their

creations or enjoyment of the activity, as well as expressing to me their likes, enjoyment, etc.

I felt that this study was able to embody methods and an environment which a struggling reader would thrive in. The small group setting, coupled with multisensory activities is one where a student who struggles with grade level reading could learn and grow, as discussed in chapter two. Additionally, I felt that I was able to utilize my knowledge regarding the struggling students' learning profile by incorporating multisensory techniques in their learning of sight words and targeted decoding skills. As noted in chapter two, Lister (2005) found, "it became apparent that [struggling students] performed significantly better with learning-style instruction that emphasized manipulation of resources and the active engagement of each child with tactual and kinesthetic materials than they did with Traditional instruction that essentially used lectures, discussions, and worksheets" (p. 34). Therefore, I feel the study benefitted my struggling students greatly by having instruction that was created with their learning styles in mind for maximum academic and emotional growth.

Furthermore, the result of the study, which found that the students increased in both their enjoyment of reading as well as their overall feelings as readers was extremely beneficial to the students. For these students who had stated that they only "somewhat liked" reading, or thought of themselves as "not good" as readers, to state in the end of study questionnaire, "I love reading," is a benefit that I hope allows the students to continue to grow and thrive as readers.

Limitations. A major limitation affecting this study is the duration of the research. The study took place in a small group classroom with second grade students.

Sessions would normally be 40 minutes in length, three days a week. This was changed to five days a week for two weeks to complete the four total "weeks" of data. Therefore, the sheer limitation to how often I could see students, as well as the rapid pace of the study schedule could have affected students. It is not possible to see students for longer than 40 minute sessions as I share the students with their general classroom teacher. Furthermore, small group is additional support rather than replacement of literacy instruction. Therefore, the time that I have with students is precious as it pulls them from their general education classroom.

An additional limitation to the study would be in the number of students engaged in the data collection. Five students were used in the creation of this study, with plentiful data taken daily and weekly. However, the use of these activities and testing procedures on such a limited amount of students could greatly affect the overall results. If completed in a full classroom, or within a school, a more thorough collection of data could be completed investigating the benefits of multisensory instruction for students struggling with reading and spelling.

Implications for the field. Further investigation could occur in a variety of areas after analysis of the data in this study. One area that could benefit from further investigation is the role of gender, personality and multisensory activities. My study consisted of three boys and two girls. It would benefit the research available to discover if certain multisensory techniques were best used with a particular gender or personality to maximize instruction and growth.

Additionally, another implication for the field regarding this study would be in the increased usage of multisensory activities with additional academic areas. Could students

82

benefit from multisensory trays, bins and materials in math, science or history? How can multisensory learning be incorporated successfully into a busy classroom schedule and curriculum?

Further investigation could be conducted regarding the home support and multisensory activity connection. The investigation of teaching and training parents with various multisensory activities and their use in the home could also be of great use in the field to gauge if student engagement in academics, academic improvement, or motivation towards academics could be measured. If student motivation could continue to be nurtured and grown at home through use of multisensory activities in collaboration with parents, could there be increased growth in academics as seen in weekly and annual testing?

In summary, the use of multisensory activities in the small group setting for struggling second grade readers can aid them in decoding, spelling and engagement. It also can increase their enjoyment of reading as well as their confidence in themselves as readers. By understanding the learning styles of the struggling reader and incorporating consistent practice in activities and materials that engage the student, increased motivation and academic progress can be seen. The result may be a first step to alleviating reading failure in struggling students and increasing overall academic achievement.

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Appendix A

Initial Student Assessment Data

Beth

Cam

Screener — Phonics Assessment

Name: Cam

Rdg Support previous year

Short Vowels	Long Vowels	R Controlled	End Clusters	
jab ____	wait ____	card ____	bang	bink
vet ____	leaf ____	herd ____	felt	delft
dim ____	die ____	dirt ____	hint ____	
fog ____	seat _Set_	sort _soft_	pond ____	
hug ____	toad _tad_	burn _burn_	dust ____	

		Blends	Digraphs	
tag ____	safe ____	brag ____	chat _cat_	
wed ____	Pete _pet_	stem ____	shine ____	
bit ____	wide _wild_	flip ____	wheel ____	
cob ____	bone ____	spot _sport_	thin _thing_	
bun ____	cube _cute_	drum ____	punch ____	

---

ems (331) Cam O.G.

Name: ____

1. bvee
2. tobort
3. vacat — vacant
4. standstill
5. bambastic
6. bombosti
7. sute — strand
8. skrit
9. buscosor — discuss
10. cofof — compact
11. cprille
12. stot — slaff
13. plot — plont
14. cars — gress
15. flot — flunt
16.
17.
18.
19.
20.

Words Their Way Primary Spelling Inventory Feature Guide

Initial

Cam

Teacher: WOOD Grade: ____

Words Spelled Correctly: 5/26 Feature Points: 32/56 Total: 37/82 Spelling Stage: LN Mid

Features	Consonants Initial	Consonants Final	Short Vowels	Digraphs	Blends	Common Long Vowels	Other Vowels	Inflected Endings	Feature Points	Words Spelled Correctly
1. fan	f	n	a						3	1
2. pet	p	t	e						3	1
3. dig	d	g	i						2	0
4. rob	r	b LR	o						2	0
5. hope	h	p							2	0
6. wait	w	t							3	1
7. gum	g	m	u						2	1
8. sled			e		sl				2	0
9. stick			i		st				1	0
10. shine				sh					1	0
11. dream					dr				1	0
12. blade					bl				0	0
13. coach				ch					1	0
14. fright					fr				0	0
15. chewed				ch				ed	0	0
16. crawl					cr				0	0
17. wishes				sh				es	1	0
18. thorn				th					1	0
19. shouted				sh				ed	0	0
20. spoil									0	0
21. growl									1	0
22. third				th					0	0
23. camped								ed	1	0
24. tries					tr				1	0
25. clapping								pping	0	0
26. riding								riding	0	0
Totals	17	17	17		17	17			32/56	5/26

Words Their Way Primary Spelling Inventory

Name: Cam

1. fan
2. pet
3. did — dig
4. rollr
5. hop — hope
6. wut — wait
7. gum
8. sled
9. stik — stick
10. shin — shine
11. dream — dream
12. Blad — blade
13. coc — coach
14. frut — fright
15. cod — chewed
16. croll — crawl
17. wishis — wishes
18. thor — thorn
19. shotid — shouted
20. soll — spoil
21. gole — growl
22. thotid — third
23. copt — camped
24. tris — tries
25. clapin — clapping
26. ridin — riding

87

Henry

Screener — Phonics Assessment

Name: Henry

93

Rdg Support previous year

Short Vowels	Long Vowels	R Controlled	End Clusters
jab ___	wait ___	c a r d ___	bang ___
vet ___	leaf ___	h e r d ___	felt ___ fly
dim ___	die ___	d i r t ___	hint ___
fog ___	seat ___	s o r t ___	pond ___
hug ___	toad ___ -dk	b u r n ___	dust ___ (-1)
100	(-1) 100		100

		Blends	Digraphs
tag ___	safe ___	b r a g brak	chat ___
wed ___	Pete ___	s t e m ___	shine ___
bit ___	wide ___	f l i p ___	wheel ___
cob ___	bone ___	s p o t ___	thin ___
bun ___	cube ___	d r u m ___	punch ___
60	100	(-1)	100

RMS (33.1)

Name: Henry O.G.   25

1. buzz
2. Adent — vacant
3. the cat
4. standstll
5. climex
6. bombastick — bombastic
7. strend
8. skth
9. diskus — discuss
10. com-pak — compact
11. sprit — sprill
12. svef — staff
13. plat — plant
14. brass — gress
15. flat — flunt
16.
17.
18.
19.
20.

Henry

Words Their Way Primary Spelling Inventory Feature Guide

Teacher: WOOD   Grade: ___

Words Spelled Correctly: 12 / 26   Feature Points: 40 / 56   Total: 52 / 82   Spelling Stage: WWP — early

SPELLING STAGES →	EMERGENT	LETTER NAME–ALPHABETIC		WITHIN WORD PATTERN		SYLLABLES AND AFFIXES			
Features →	Consonants Initial / Final	Short Vowels	Digraphs	Blends	Common Long Vowels	Other Vowels	Inflected Endings	Feature Points	Words Spelled Correctly
1. fan	f n	a						3	1
2. pet	p t	e						3	1
3. dig	d g	i						3	1
4. rob	r b	o						3	1
5. hope	h p				o-e			2	0
6. wait	w t							3	1
7. gum	g m	u						2	1
8. sled		e		sl				2	1
9. stick		i		st				2	1
10. shine			sh		i-e			1	0
11. dream				dr				1	0
12. blade				bl				1	0
13. coach			ch					1	0
14. fright				fr				1	0
15. chewed			ch					1	0
16. crawl				cr				1	0
17. wishes			sh					2	1
18. thorn			th			or		1	0
19. shouted			sh			ou		0	0
20. spoil								0	0
21. growl								2	0
22. third			th			ir		0	0
23. camped								0	0
24. tries				tr				0	0
25. clapping							-pping	0	0
26. riding							-ding		1
Totals	/7 /7	/7	/7	/7	/7	/7	/7	40 / 56	12 / 26

Words Their Way Primary Spelling Inventory

Name: Henry

1. fun
2. pot
3. dig
4. rob t
5. hope
6. whaet — wait
7. gum
8. sled
9. stick
10. shine
11. dreom — dream
12. blayd — blade
13. cowch — coach
14. friyt — fright
15. chood — chewed
16. cruul — crawl
17. wishis — wishes
18. thon
19. shawtid — shouted
20. spooild — spoil
21. grou — growl
22. third
23. scapt — camped
24. tris — tries
25. claping — clapping
26. riding

Tom

Name: Tom

RMS
previous year

Short Vowels		Long Vowels		R Controlled		End Clusters	
jab	___	wait	went	card	cub	bang	brag
vet	___	leaf	left	herd	___	felt	___
tim	___	die	did	dirt	dry	hint	hit
fog	___	seat	set	sort	snow	pond	poled
hug	___	toad	told	burn	/	dust	___
	100		(-5)				(-3)

				Blends		Digraphs	
tag	___	safe	ok safe / save	brag	___	chat	___
wed	web	Pete	pen	stem	___	shine	___
bit	___	wide	wait	flip	___	wheel	will
cob	___	bone	___	spot	___	thin	___
bun	___	cube	cub	drum	___	punch	___
	(-1)		(-4)		100		(-1)

RMS (31)

Name: Tom   O.G.

1. bus 4x buzz
2. indet indent
3. vackate vacant
4. standstill
5. clomaxs climax
6. bumbackstick bombastic
7. tread strand
8. sill skill
9. discus discuss
10. coat compact
11. srpill spill
12. saf staff
13. pat plant
14. gress
15. flut flunt
16.
17.
18.
19.
20.

Tom

Words Their Way Primary Spelling Inventory Feature Guide

Teacher: Wood   Grade:
Words Spelled Correctly: 10/26   Feature Points: 38/58   Total: 48/82   Spelling Stage: WWP - early

SPELLING STAGES →	EMERGENT		LETTER NAME—ALPHABETIC			WITHIN WORD PATTERN			SYLLABLES AND AFFIXES		
									Feature Points	Words Spelled Correctly
Features →	Initial	Consonants Final	Short Vowels	Digraphs	Blends	Common Long Vowels	Other Vowels	Inflected Endings		
1. fan	f	n	a						3	1
2. pet	p	t	e						3	1
3. dig	d LR	g	i						3	0
4. rob	r	b	o						3	1
5. hope	h	LR							2	0
6. wait	w								3	0
7. gum	g LR	m	u						2	1
8. sled			e		sl				2	1
9. stick			i		st				2	1
10. shine				sh		i-e			1	0
11. dream					dr				1	0
12. blade					bl				1	0
13. coach				ch					1	0
14. fright					fr				1	0
15. chewed				ch					1	0
16. crawl					cr				1	0
17. wishes				sh					2	1
18. thorn				th			or		1	0
19. shouted				sh					0	0
20. spoil									0	0
21. growl									1	0
22. third				th					0	0
23. camped								-ed	0	0
24. tries									0	0
25. clapping								-ing	0	0
26. riding					tr				0	0
Totals	/7	/7	/7	/7	/7	/7	/7		38/58	10/25

Words Their Way Primary Spelling Inventory

Name: Tom

1. fan
2. pet
3. dig — dig
4. rob
5. hop — hope
6. wate — wait
7. gum — gum
8. sled
9. stick
10. shine
11. dream — dream
12. blad — blade
13. coch — coach
14. frut — fright
15. chod — chewed
16. crul — crawl
17. wishis — wishes
18. thorn
19. shatid — shouted
20. spoill — spoil
21. growl — growl
22. thrd — third
23. camt — camped
24. tris — tries
25. claping — clapping
26. riding

Vanessa

Screener
Phonics Assessment

(63.)7
NEW
Rdy
Supp

Vanessa

Short Vowels	Long Vowels	R Controlled	End Clusters
jab _job_	wait _write_	c a r d	bang
vet _visit_	leaf ____	h e r d _hard_	felt _field_
dim _drum_	die ____	d i r t	hint _hunt_
fog	seat _side_	s o r t _short_	pond _poned_
hug	toad ____	b u r n	dust _dress_
(-3)	(-2)	(-2)	(-2)

		Blends	Digraphs
tag _tug_	safe ____	b r a g	chat
wed	Pete ____	s t e m _sleep_	shine
bit	wide ____	f l i p _fleep_	wheel
cob _clob(&)_	bone _bun_	s p o t _spote_	thin
bun	cube _club_	d r u m _drain_	punch _peach_
(-1)	(-2)	(-4)	(-1)

do RR ✱ (3.) O.G. □ △ ✱

Name: Vanessa

1. Buzze _buzz_   11. skil _sprill_
2. indent   12. shf _slaff_
3. (vacant)   13. blont _4x plont_
4. spandsn _standstill_   14. gros _gress_
5. rimaxs _climax_   15. flunt
6. bombastik _bombastic_   16.
7. shape   17.
8. skild _skill_   18.
9. dihgas   19.
10. ctmpat _compact_   20.

Vanessa

Words Their Way Primary Spelling Inventory Feature Guide

Teacher A.32 Grade ____
Words Spelled Correctly 6 /26 Feature Points 34 /56 Total 40 /82 Spelling Stage: WW P- Early

	Consonants		Short Vowels	Digraphs	Blends	Common Long Vowels	Other Vowels	Inflected Endings	Feature Points	Words Spelled Correctly
Features →	Initial	Final								
1. fan	f	n	a						3	
2. pet	p	t	e						3	1
3. dig	d	g	i						3	1
4. rob	r	b	o						3	
5. hope	h	p				o-e			2	0
6. wait	w	t				ai			2	0
7. gum	g	m	u						3	
8. sled			e		sl					0
9. stick			i		st				2	0
10. shine				sh		i-e			1	0
11. dream					dr	ea			1	0
12. blade					bl	a-e			1	0
13. coach				ch		oa			1	0
14. fright					fr	igh			1	0
15. chewed				ch			ew	-ed	1	0
16. crawl					cr		aw		1	0
17. wishes				sh				-es	1	0
18. thorn				th			or		1	0
19. shouted				sh			ou	-ed	2	0
20. spoil							oi		0	0
21. growl							ow		0	0
22. third				th			ir		1	0
23. camped								-ed	0	0
24. tries								-ies	0	
25. clapping					tr			-pping	0	
26. riding								-ding		4
Totals	17	17	17	17	17	17	17	34 /56	6 /26	

Words Their Way Primary Spelling Inventory

Name: Vanessa _____ 15 _____

1. fan
2. Pet
3. dig
4. rob
5. hop _hope_
6. Wait _wait_
7. gum
8. Send _sled_
9. Stik _stick_
10. Shin _shine_
11. dreme _dream_
12. blad _blade_
13. couch _coach_
14. frite _fright_
15. chood _chewed_
16. crol _crawl_
17. wishs _wishes_
18. tonr _thorn_
19. shout _shouted_
20. spool _spoil_
21. craol _growl_
22. therr _third_
23. cumd _camped_
24. crise _tries_
25. claping _clapping_
26. riding

Appendix B

Data Analysis: Initial Testing Breakdown of Skills

	Beth	Cam	Henry	Tom	Vanessa
O.G. + WTW Spelling *Short Vowels* *buzz, strand, skill, sprill, slaff, plont, gress, flunt, fan, pet, dig, rob, gum, sled, stick	12/15 or 80% used correctly **BUT** 7/15 or 46% spelled correctly	13/15 or 86% used correctly **BUT** 7/15 or 46% spelled correctly	10/15 or 66% used AND spelled correctly	14/15 or 93% used correctly **BUT** 6/15 or 40% spelled correctly	15/15 or 100% used correctly **BUT** 6/15% or 40% spelled correctly
READING **Phonics Screener:** *Short Vowels* *jab, vet, dim, fog, hug, tag, wed, bit, cob, bun	9/10 or 90%	10/10 or 100%	10/10 or 100%	9/10 or 90%	6/10 or 60%
WTW Spelling *Digraphs* *shine, coach, chewed, wishes, thorn, shouted, third	6/7 or 85% correct digraph used **BUT** 1/7 or 14% spelled correctly	5/7 or 71% correct digraph used **BUT** 0/7 or 0% spelled correctly	7/7 or 100% correct digraph used **BUT** 3/7 or 42% spelled correctly	7/7 or 100% correct digraph used **BUT** 2/7 or 28% spelled correctly	6/7 or 85% correct digraph used **BUT** 0/7 or 0% spelled correctly
READING **Phonics Screener: Digraphs** *chat, shine, wheel, thin, punch	1/5 or 20%	3/5 or 60%	5/5 or 100%	4/5 or 80%	4/5 or 80%
WTW Spelling: *Magic E* *hope, shine	0/2 or 0%	0/2 or 0%	2/2 or 100%	1/2 or 50%	0/2 or 0%
READING **Phonics Screener:** *Magic E* *safe, Pete, wide, bone, cube	4/5 or 80%	2/5 or 40%	5/5 or 100%	1/5 or 20%	3/5 or 60%
O.G. + WTW Spelling *Multisyllabic words* *indent, vacant, standstill, climax, bombastic, discuss, compact, wishes, shouted, clapping, riding	1/11 or 9%	2/11 or 18%	3/11 or 27%	2/11 or 18%	2/11 or 8%

Student Questionnaire Pre-Study

STUDENT NAME: Pre-Study Questionnaire

1. How much do you like reading?

_____

_____

2. How do you feel you are as a reader?

_____

_____

3. How do you feel you are as a speller?

_____

_____

Appendix D

Pre-Study Questionnaire Results

STUDENT NAME: Beth   Pre-Study Questionnaire

1. How much do you like reading?

   Yeah. A little.

2. How do you feel you are as a reader?

   I'm good.

3. How do you feel as a speller ?

   Good (speller)

STUDENT NAME: Cam   Pre-Study Questionnaire

1. How much do you like reading?

   Yeah! Um - like 50%. !

2. How do you feel you are as a reader?

   I can work on it. I'm not a very good reader.

3. How do you feel as a speller ?

   OK speller

STUDENT NAME: Henry   Pre-Study Questionnaire

1. How much do you like reading?

   Yeah -um- I like it - not all the time, sometimes.

2. How do you feel you are as a reader?

   Not the best, but I'm not saying I'm <u>not</u> good.

3. How do you feel as a speller?

   I think I am a worse speller than reader.

STUDENT NAME: Tom   Pre-Study Questionnaire

1. How much do you like reading?

   Yes -um like some.

2. How do you feel you are as a reader?

   (Nods) yes - I'm a good reader.

3. How do you feel as a speller?

   OK - I'm ok. Not like, super but ok.

STUDENT NAME: _Vanessa_   Pre-Study Questionnaire

1. How much do you like reading?

   Sometimes.   I don't really know.

2. How do you feel you are as a reader?

   I think I'm a good reader

3. How do you feel as a speller?

   I feel ok [as a speller].

Week 1 Data

Beth: Week 1 Data

Sight Word Data	BETH's SIGHT WORDS	From	Good	Long	May	same
	Initial Test	NO	NO	NO	NO	NO
	Mid-Week	NO	YES	YES	NO	NO
	Posttest	YES	YES	YES	YES	YES
Mid Week Test for Sight Words	Beth data 1 mid wk 1. frum from 2. good 3 long 4 mae may 5. sam same					
End of Week Spelling Test	Beth Date: 10/8/15 Week 1 data +20 / 20 100! (2syll) **Weekly Spelling Test** Assigned Pattern Words / Mystery Words Apply the Spelling Pattern! Great job! mesh / 1. sish thin / 2. thib this / 3. thut quiz / 4. quam chin / 5. sach shut / 6. posh path / 7. tath that / 8. chob quit / 9. quat much 100 / 10. chaq 100%					
End of Week Sight Word Posttest	1. from 2. good 3. long 4. may 5. same					

Cam: Week 1 Data

Sight Word Data	CAM'S SIGHT WORD DATA	of	then	have	long	same
	Initial Test	NO	NO	NO	NO	NO
	Mid-Week	NO	NO	NO	YES	NO
	Posttest	YES	YES	YES	YES	YES

Mid Week Test for Sight Words	
End of Week Spelling Test	
End of Week Sight Word Posttest	

Henry: Week 1 Data

Sight Word Data	HENRY'S SIGHT WORD DATA	as	were	when	will	long
	Initial Test	NO	NO	NO	NO	NO
	Mid-Week	YES	NO	NO	NO	NO
	Posttest	YES	YES	YES	YES	YES

Mid Week Test for Sight Words	Henry data 1 midwk 1 as 2 Wer were 3 Whin when 4 Wil will 5 lang long

End of Week Spelling Test	Henry Date:___,___,15 Week 1 data **Weekly Spelling Test** +19 / 20 95% 2syll Assigned Pattern Words / Mystery Words Apply the Spelling Pattern! mesh 1. sish thin 2. thib this LR +x 3. thut quis quiz 4. quan chin 5. soth shut 6. Pash posh ✓ path 7. teth that 8. chob quit 9. quat much -1 10. chaq 100%

End of Week Sight Word Posttest	1 as 2 Were 3 When 4 Will 5 long

Tom: Week 1 Data

Sight Word Data	TOM'S SIGHT WORD DATA	its	from	they	your	same
	Initial Test	NO	NO	NO	NO	NO
	Mid-Week	YES	NO	NO	NO	YES
	Posttest	YES	YES	NO	YES	YES

Mid Week Test for Sight Words	Tom data 1 midwk its frum from thay they yur your 5ame

End of Week Spelling Test	Tom Date: 1 0 / 5 / 1 5 Week 1 data +20 20 100% (23y11) **Weekly Spelling Test** Assigned Pattern Words Mystery Words Apply the Spelling Pattern! mesh 1. sish ·thin 2. thib ·this 3. that quiz 4. quam ·chin 5. soch ·shut 6. posh ·path 7. toth ·that 8. chob ·quit 9. quat).much 100 10. chaq 100

End of Week Sight Word Posttest	its · from thay your Same

Vanessa: Week 1 Data

Sight Word Data	VANESSA'S SIGHT WORD DATA	of	for	with	what	when
	Initial Test	NO	NO	NO	NO	NO
	Mid-Week	NO	YES	NO	NO	NO
	Posttest	YES	YES	NO	NO	NO

Mid Week Test for Sight Words	Vanessa data! mid wk 1 uf 2 for 3 whith 4 wut 5 wen

End of Week Spelling Test	Vanessa Date: 10/8/15 17/20 85% *sh review + 2syll **Weekly Spelling Test** Assigned Pattern Words: Mesh, thin, this, quiz, chin, shut, Path, waf, quit, much *100 Mystery Words Apply the Spelling Pattern!: 1. sh(ⓢⓘⓣ) si sh 2. thrth 3. thut 4. quam 5. shach sach 6. Dosh 7. tath 8. chop 9. qut 10. chage chag

End of Week Sight Word Posttest	1 of 2 for 3 whith 4 wut 5 wen

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Appendix F

Week 2 Data

Beth: Week 2 Data

Sight Word Data	BETH's SIGHT WORDS	of	what	one	where	was
	Initial Test	NO	NO	NO	NO	NO
	Mid-Week	YES	YES	YES	YES	NO
	Posttest	YES	YES	YES	YES	YES
Mid Week Test for Sight Words						
End of Week Spelling Test						
End of Week Sight Word Posttest						

Cam: Week 2 Data

Sight Word Data	CAM'S SIGHT WORD DATA	or	what	my	were	your
	Initial Test	NO	NO	NO	NO	NO
	Mid-Week	YES	NO	YES	YES	NO
	Posttest	YES	YES	YES	YES	YES

Mid Week Test for Sight Words	
End of Week Spelling Test	
End of Week Sight Word Posttest	

Henry: Week 2 Data

Sight Word Data	HENRY'S SIGHT WORD DATA	of	from	by	each	what	
	Initial Test	NO	NO	NO	NO	NO	
	Mid-Week **ABSENT for TEST**	x	x	x	x	x	
	Posttest	YES	YES	YES	YES	NO	

Mid Week Test for Sight Words	**Henry was pulled for his ELL session before the pretest could occur**
End of Week Spelling Test	
End of Week Sight Word Posttest	

103

Tom: Week 2 Data

Sight Word Data	TOM'S SIGHT WORD DATA	what	was	they	my	when
	Initial Test	NO	NO	NO	NO	NO
	Mid-Week	NO	NO	YES	YES	YES
	Posttest	YES	YES	YES	YES	YES

Mid Week Test for Sight Words	Mrs. Fisher's Rad Readers Name: Tom My 5 Sight Words: *Practice SPELLING* 1. Whut 2. wus 3. they 4. my 5. whan

End of Week Spelling Test	Tom Data 2 +18 / 18 Wow! 100% **Weekly Spelling Test** **Assigned Pattern Words** **Mystery Words Apply the Spelling Pattern!** Canhot 1. mishmosh upset 2. Sunfish bathtub 3. Cutup cutup pigpen 4. inlet cashbox 5. rambd hotbed 6. Oshcan madcap 7. Setup setup Sunset 8. boxtop catnip 9. Suntan 10.

End of Week Sight Word Posttest	Tom posttest data 2 1. whut 2. was 3. they AWE 4. my 5. when

Vanessa: Week 2 Data

Sight Word Data	VANESSA'S SIGHT WORD DATA	with	what	was	when	how
	Initial Test	NO	NO	NO	NO	NO
	Mid-Week	YES	NO	NO	YES	YES
	Posttest	YES	YES	YES	YES	YES

Mid Week Test for Sight Words	
End of Week Spelling Test	
End of Week Sight Word Posttest	

Appendix G

Week 3 Data

Beth: Week 3 Data

Sight Word Data	BETH'S SIGHT WORDS	when	have	your	has	him
	Initial Test	NO	NO	NO	NO	NO
	Mid-Week	YES	YES	YES	YES	YES
	Posttest	YES	YES	YES	YES	YES
Mid Week Test for Sight Words	Mrs. Fisher's Rad Readers Name: **Beth** My 5 Sight Words: *Practice SPELLING* 1. When 2. have 3. your 4. has 5. him					
End of Week Spelling Test	Beth Name: ___ **Weekly Spelling Test** +10 / 10 100% Assigned Pattern Words 1. sun shine 2. cup cake 3. for gave 4. outside 5. timeline Mystery Words Apply the Spelling Pattern! 1. tenside 2. fire hope 3. shipmate 4. take make 5. lake bate					
End of Week Sight Word Posttest	Beth posttest data 3 1. When 2. have 3. your 4. has 100% 5. him					

Cam: Week 3 Data

Sight Word Data	CAM'S SIGHT WORD DATA	each	would	because	how	just
	Initial Test	NO	NO	NO	NO	NO
	Mid-Week	YES	NO	NO	YES	YES
	Posttest	YES	NO	NO	YES	YES

Mid Week Test for Sight Words	Mrs. Fisher's Rad Readers Name: **Cam** My 5 Sight Words: _Practice SPELLING_ 1. e~~ach~~ 2. w~~oul~~ would 3. ~~house~~ because 4. who 5. Just
End of Week Spelling Test	Name: Cam 8/10 (80%) **Weekly Spelling Test** Assigned Pattern Words Mystery Words Apply the Spelling Pattern! 1. Sunshin — sunshine 1. tenside 2. cupcace 2. firehope 3. forgave 3. shipmate 4. outside 4. take make 5. timeline +3 5. Lanw pate +5 (good magic e only(-1))
End of Week Sight Word Posttest	Cam posttest data 3 1. each 2. wolte — would 3. besuse — because 4. how 5. Just (+3)

Henry: Week 3 Data

Sight Word Data	HENRY'S SIGHT WORD DATA	would	because	does	said	read
	Initial Test	NO	NO	NO	NO	NO
	Mid-Week	NO	NO	NO	YES	YES
	Posttest	YES	YES	NO	YES	YES

Mid Week Test for Sight Words	

Mrs. Fisher's Rad Readers

Name: Henry

My 5 Sight Words:
Practice SPELLING

1. whod   would
2. becoos   because
3. dose   does
4. said
5. read

End of Week Spelling Test	

Name: Henry

$+\frac{7}{10}$ 70%

Weekly Spelling Test

Review magic e

Assigned Pattern Words	Mystery Words Apply the Spelling Pattern!
1. sunshine	1. tenside
2. cupcoke	2. fire hope
3. forgove	3. shipmapt take make
4. outside	4. tick macke
5. timlinc	5. lockbatt
time line (+4)	lake bate +3

End of Week Sight Word Posttest	

Henry posttest data 3

1 would
2 because
3 dose   does
4 said   (+4)
5 read

Tom: Week 3 Data

Sight Word Data	TOM'S SIGHT WORD DATA	where	have	she	then	by
	Initial Test	NO	NO	NO	NO	NO
	Mid-Week	NO	YES	YES	YES	YES
	Posttest	YES	YES	YES	YES	YES

Mid Week Test for Sight Words	Mrs. Fisher's Rad Readers Name: **Tom** My 5 Sight Words: _Practice SPELLING_ 1. Whrer where 2. have 3. She 4. then 5. by

End of Week Spelling Test	Tom Name **Weekly Spelling Test** +10 / 10 100% **Assigned Pattern Words** 1. SunShine 2. cupcake 3. forgave 4. outside 5. timeline 100 **Mystery Words** Apply the Spelling Pattern! 1. tenSide 2. firehope 3. Shipmate 4. takemake 5. late boate 100

End of Week Sight Word Posttest	Tom posttest data 3 1. Where 2. have 3. She 4. then 5. by 100%

Vanessa: Week 3 Data

Sight Word Data	VANESSA'S SIGHT WORD DATA	from	they	now	long	same
	Initial Test	NO	NO	NO	NO	NO
	Mid-Week	YES	YES	YES	YES	YES
	Posttest	YES	YES	YES	YES	NO

Mid Week Test for Sight Words	Mrs. Fisher's Rad Readers Name: **Vanessa** My 5 Sight Words: *Practice SPELLING* 1. from 2. they 3. now 4. long 5. same
End of Week Spelling Test	Name: Vanessa **Weekly Spelling Test** $\frac{9}{10}$ (90%) Assigned Pattern Words 1. sunshine 2. cupcake 3. forgive 4. outside 5. time line Mystery Words — Apply the Spelling Pattern! 1. ten side 2. for hope five 3. ship mate 4. take mate 5. take bate +4
End of Week Sight Word Posttest	Vanessa posttest data 3 1. from 2. they 3. now 4. long 5. came Same (+A)

110

Appendix H

Data Week 4

Beth: Week 4 Data

Sight Word Data	BETH'S SIGHT WORDS	By	Now	How	Each	would
	Initial Test	NO	NO	NO	NO	NO
	Mid-Week	YES	YES	YES	YES	YES
	Posttest	YES	YES	YES	YES	YES
Mid Week Test for Sight Words						
End of Week Spelling Test						
End of Week Sight Word Posttest						

111

Cam: Week 4 Data

Sight Word Data	CAM'S SIGHT WORD DATA	would	because	school	use	very
	Initial Test	NO	NO	NO	NO	NO
	Mid-Week	YES	YES	YES	YES	NO
	Posttest	NO	NO	NO	NO	YES

Mid Week Test for Sight Words	

End of Week Spelling Test	

End of Week Sight Word Posttest	

Henry: Week 4 Data

Sight Word Data	HENRY'S SIGHT WORD DATA	does	people	first	been	use
	Initial Test	NO	NO	NO	NO	NO
	Mid-Week	YES	YES	YES	YES	YES
	Posttest	YES	YES	YES	YES	YES

Mid Week Test for Sight Words	

End of Week Spelling Test	

End of Week Sight Word Posttest	

Tom: Week 4 Data

Sight Word Data	TOM'S SIGHT WORD DATA	now	how	will	her	long
	Initial Test	NO	NO	NO	NO	NO
	Mid-Week	YES	YES	YES	NO	YES
	Posttest	YES	YES	YES	YES	YES

Mid Week Test for Sight Words	

End of Week Spelling Test	

End of Week Sight Word Posttest	

Vanessa: Week 4 Data

Sight Word Data	VANESSA'S SIGHT WORD DATA	each	would	because	does	some
	Initial Test	NO	NO	NO	NO	NO
	Mid-Week	YES	YES	YES	NO	YES
	Posttest	YES	YES	YES	YES	YES

Mid Week Test for Sight Words	
End of Week Spelling Test	
End of Week Sight Word Posttest	

Appendix I

End of Study Overall Growth

	Beth	Cam	Henry	Tom	Vanessa
O.G. + WTW Spelling *Short Vowels* *buzz, strand, skill, sprill, slaff, plont, gress, flunt, fan, pet, dig, rob, gum, sled, stick	12/15 or 80% used correctly **BUT** 7/15 or 46% spelled correctly	13/15 or 86% used correctly **BUT** 7/15 or 46% spelled correctly	10/15 or 66% used AND spelled correctly	14/15 or 93% used correctly **BUT** 6/15 or 40% spelled correctly	15/15 or 100% used correctly **BUT** 6/15% or 40% spelled correctly
READING **Phonics Screener:** *Short Vowels* *jab, vet, dim, fog, hug, tag, wed, bit, cob, bun	9/10 or 90%	10/10 or 100%	10/10 or 100%	9/10 or 90%	6/10 or 60%
WTW Spelling *Digraphs* *shine, coach, chewed, wishes, thorn, shouted, third	6/7 or 85% correct digraph used **BUT** 1/7 or 14% spelled correctly	5/7 or 71% correct digraph used **BUT** 0/7 or 0% spelled correctly	7/7 or 100% correct digraph used **BUT** 3/7 or 42% spelled correctly	7/7 or 100% correct digraph used **BUT** 2/7 or 28% spelled correctly	6/7 or 85% correct digraph used **BUT** 0/7 or 0% spelled correctly
READING **Phonics Screener: Digraphs** *chat, shine, wheel, thin, punch	1/5 or 20%	3/5 or 60%	5/5 or 100%	4/5 or 80%	4/5 or 80%
WEEKLY SPELLING TEST Digraphs and Short Vowels	100%	60% Retake: 100	95%	100%	85% Retake:100%
WTW Spelling: *Magic E* *hope, shine	0/2 or 0%	0/2 or 0%	2/2 or 100%	1/2 or 50%	0/2 or 0%
READING **Phonics Screener:** *Magic E* *safe, Pete, wide, bone, cube	4/5 or 80%	2/5 or 40%	5/5 or 100%	1/5 or 20%	3/5 or 60%
O.G. + WTW Spelling *Multisyllabic words* *indent, vacant, standstill, climax, bombastic, discuss, compact, wishes, shouted, clapping, riding	1/11 or 9%	2/11 or 18%	3/11 or 27%	2/11 or 18%	2/11 or 8%
WEEKLY SPELLING TEST: 2 SYLL COMPOUND WORDS	100%	*Retaking Digraph and SV test	100%	100%	*Retaking Digraph and SV test
WEEKLY SPELLING TEST: MULTISYLLABIC WORDS + MAGIC E	100%	80%	70% *due to ELL time share Retake post study	100%	90%
WEEKLY SPELLING TEST: MULTISYLLABIC VCCV STRATEGY	100	81%	94%	94.5%	91%

116

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Appendix J

Post Survey Questionnaire Form

STUDENT NAME:

1. How much do you like reading?

_____

_____

2. How do you feel you are as a reader?

_____

_____

3. How do you feel you are as a speller?

_____

_____

4. Did you like our multisensory activities?

_____

_____

5. Which one did you like best? Why?

_____

_____

6. Did they help you learn to be a better reader? A better speller?

_____

_____

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Appendix K

Post-Survey Questionnaire Student Results

STUDENT NAME: Beth   Pre-Study Qu[...]

1. How much do you like reading?

   Yeah. A little.

2. How do you feel you are as a reader?

   I'm good.

3. How do you feel as a speller ?

   Good (speller)

STUDENT NAME: Beth   POST STUDY

1. How much do you like reading?

   A lot!

2. How do you feel you are as a reader?

   Good

3. How do you feel as a speller ?

   Good

4. Did you like our multisensory activities?

   Yeah.

5. Which one did you like best? Why?

   Shaving cream. Because it keeps getting on my hands.

6. Did they help you learn to be a better reader? A better speller?

   Yes (reader)
   Yes (speller) It helps me spell.

STUDENT NAME: Cam   Pre-Study Questionnaire

1. How much do you like reading?

   Yeah! Um - like 50%.!

2. How do you feel you are as a reader?

   I can work on it. I'm not a very good reader.

3. How do you feel as a speller ?

   OK speller

STUDENT NAME: Cam   POST STUDY

1. How much do you like reading?

   Medium - a 90%.!

2. How do you feel you are as a reader?

   A good reader!

3. How do you feel as a speller ?

   Great!

4. Did you like our multisensory activities?

   Yeah!

5. Which one did you like best? Why?

   Shaving cream - because it's sticky and messy.

6. Did they help you learn to be a better reader? A better speller?

   Yeah (reader)
   Uh huh (speller) it helped with spelling words.

118

STUDENT NAME: Henry   Pre-Study Questionnair

1. How much do you like reading?

Yeah -um- I like it - not all the time, sometimes.

2. How do you feel you are as a reader?

Not the best, but I'm not saying I'm not good.

3. How do you feel as a speller?

I think I am a worse speller than reader.

STUDENT NAME: Henry

1. How much do you like reading?

I like it a lot. First I actually didn't bc I had trouble. Now, I like it a lot.

2. How do you feel you are as a reader?

The middle - between good & great.

3. How do you feel as a speller?

I think I'm good. Bc I know I'm better at rdg a word, but I have trouble sometimes spelling it.

4. Did you like our multisensory activities?

Well... I didn't like the shaving cream a lot. But everything else I liked.

5. Which one did you like best? Why?

I think ... beans or salt. They were not very dirty.

6. Did they help you learn to be a better reader? A better speller?

It actually helped me spell. Mostly spelling

STUDENT NAME: Tom   Pre-Study Questionn

1. How much do you like reading?

Yes -um like some.

2. How do you feel you are as a reader?

(Nods) yes - I'm a good reader.

3. How do you feel as a speller?

OK - I'm ok. Not like, super but ok.

STUDENT NAME: Tom   POST STUDY

1. How much do you like reading?

I love it!

2. How do you feel you are as a reader?

I'm great

3. How do you feel as a speller?

I'm good, maybe great.

4. Did you like our multisensory activities?

Yes!

5. Which one did you like best? Why?

Shaving cream - because it was messy!

6. Did they help you learn to be a better reader? A better speller?

Well it helped me spell. I felt like I spell better.

119

STUDENT NAME: Vanessa   Pre-Study Que

1. How much do you like reading?

   Sometimes... I don't really know.

   _____

2. How do you feel you are as a reader?

   I think I'm a good reader

   _____

3. How do you feel as a speller ?

   I feel ok [as a speller] .

   _____

STUDENT NAME: Vanessa

1. How much do you like reading?

   Um. A lot.

2. How do you feel you are as a reader?

   Great

3. How do you feel as a speller ?

   I feel great.

4. Did you like our multisensory activities?

   Yes!

5. Which one did you like best? Why?
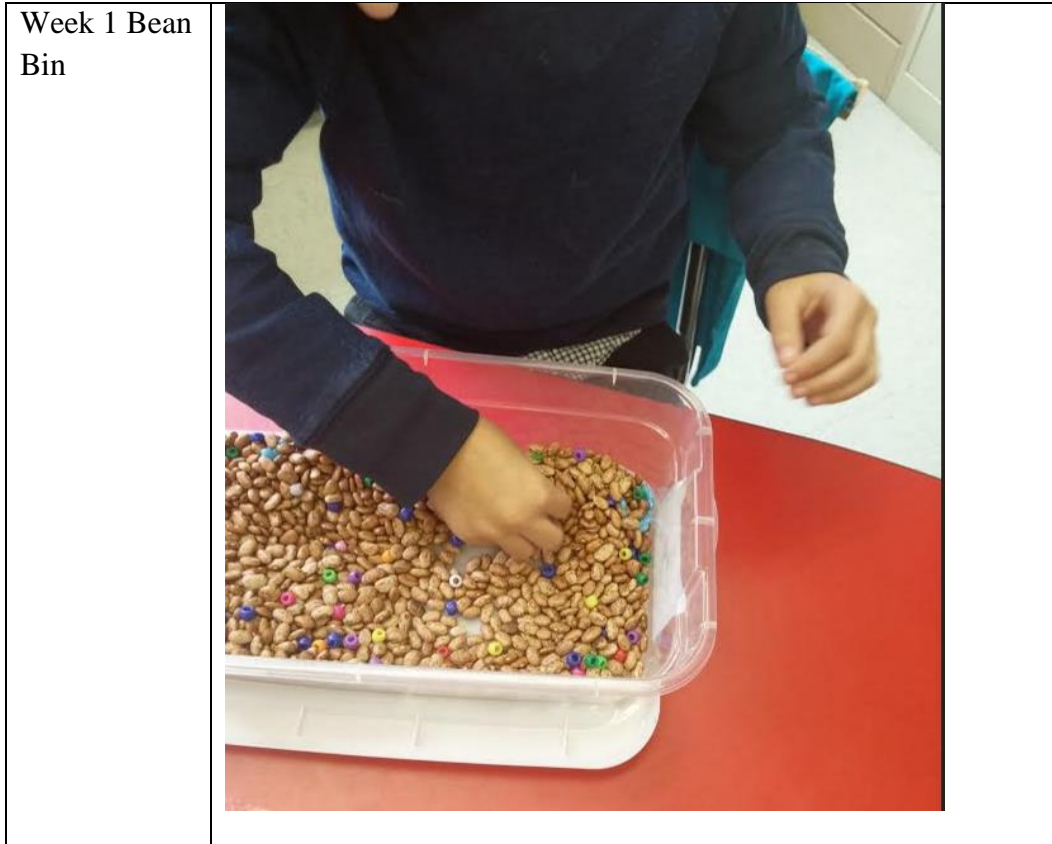
   Shaving cream! Bc it's really fun and sticky !

6. Did they help you learn to be a better reader? A better speller?

   Yes (reader)

   Um. Yes, um... I think because since we've been
   learning, we I can do it with the group.

120

Appendix L

Photos of Student with Multisensory Activities

Week 1 Bean Bin	

Week 2 Wiki Sticks	
Week 3 Salt Trays	

| Week 4 Shaving Cream | |