Title
The Effects of Video Self-Modeling on the Decoding Skills of Children At Risk for Reading Disabilities

Author
Ayala, Sandra M

Publication Date
2010

Peer reviewed|Thesis/dissertation

UNIVERSITY OF CALIFORNIA
RIVERSIDE

The Effects of Video Self-Modeling on the Decoding Skills of Children At Risk for Reading Disabilities

A Dissertation submitted in partial satisfaction
of the requirements for the degree of

Doctor of Philosophy

in

Education

by

Sandra M. Ayala

June 2010

Dissertation Committee:
Dr. Rolland E. O'Connor, Chairperson
Dr. H. Lee Swanson
Dr. Sharon B. Duffy

The Dissertation of Sandra M. Ayala is approved:

Committee Chairperson

University of California, Riverside

Acknowledgements

To Carol: Thank you for your knowledge, time, thoughtful conversations, editing, school, ideas, meals, love and support. I greatly value our chats about reading, children, social capital, technology, while in the pool doing laps, or at the movies, on vacation and so on. You brought the burger the night before comps. You kept me on my game. You really helped me climb this hill and I appreciate how hard you worked so that I could.

To My Family: Your love and unconditional support has always been my foundation for being able to do anything. Thank you with love, Mom and Dad, Steve, Linda, Chris and all of our beloved attachments.

To Dr. Rollanda O'Connor: Thank you for your excellent guidance, editing and research. The best part of my UCR education was getting to know you. You provided opportunities and the perfect model of how to be a great college professor. Your expertise in teaching reading has been invaluable. Your integrity partnered with your sense of humor really made for an excellent PhD experience. In the years to come, looking back on this time I predict my fondest memories will always include you.

To Dr. Sharon Duffy: I will always be grateful for your mentoring right from the start. It was a pleasure to sit with you and develop ideas for research and chat about technology changing the lives of children with disabilities. You always made time for me and you never ran out of brainstorming ideas. Your support, guidance and academic friendship will always be treasured.

To Dr. H. Lee Swanson: Thank you for the opportunity to work with you on the Journal of Learning Disabilities. You are an outstanding editor, researcher, author, and professor and it’s been a privilege and an honor to be mentored by you. Thank you for being a part of my committee and guiding me through single subject design.

To the GSOE Faculty: In particular Dr. Bob Ream, Dr. Jan Blacher, and Dr. George Marcoulides - Thank you for the various courses and academic exchanges over the past four years. Each of you provided an expertise that brought depth and direction to my studies and I appreciate your guidance, good nature and hard work.

To the CDS Faculty at University of Hawaii, Manoa: Mahalo for the research grant work opportunity. The experience was invaluable. To Dr. Peter Dowrick: Mahalo for being the pioneer of Video Self Modeling and for your incredible work, which paved the way for mine. To Caryl Hitchcock: Mahalo for sharing your ideas and experiences with me and helping me to find my way to my research topic.

To the Team at my Research School: In particular Judy, Mary, Carol, Frances, Leslie and Jen. Thank you for the opportunity and assisting me with conducting research at your school. Judy, you are a progressive, hands-on leader and I have great respect for the work you do for children. Carol and Frances, you are excellent data collectors.

To My Friends at UCR: Thank you for all the fun engaging evenings of learning: theories, frameworks, concept maps, statistics and SAS. I will always remember you and I wish you well in your future endeavors. In particular, my dearest friend Xinhua, Tori, Vanessa, Stacy, Tiffany, Lisa, Jen, Kay, Courtney, Kyle, Igor, Scott and Sarah.

To My Friends: Thank you for cheering me on and for being good friends.

Finally, To Capo: You sat under my desk for 500 gazillion, paper writing hours. You are the best pup ever. (PhD = Perfect happy Dog)

Dedication

This dissertation is dedicated to the children in my life. I cherish you. You are my teachers. Especially: Erica, Greg, Alex, Shannon, Louie, Steven, Sasha, Raina, Tommy, Cole, Brad, Charlie, Natalie, my sweet James, Logan, Brody, and Josh. May you live life passionately and chase your dreams whole-heartedly. To my Mother: for giving me life and enough laughter and love to accomplish anything. To June, James and JoAnn: you left too soon, and you each did something way harder than me.

ABSTRACT OF THE DISSERTATION

The Effects of Video Self-Modeling on the Decoding Skills of Children
At Risk for Reading Disabilities

by

Sandra M. Ayala

Doctor of Philosophy, Graduate Program in Education
University of California, Riverside, June 2010
Dr. Rollanda E. O’Connor, Chairperson

Ten first grade students, participating in a Tier II response to intervention (RTI) reading program received an intervention of video self modeling to improve decoding skills and sight word recognition. The students were video recorded blending and segmenting decodable words, and reading sight words taken directly from their curriculum instruction. Individual videos were recorded and edited to show students successfully and accurately decoding words and practicing sight word recognition. Each movie was two minutes or less and included 5 decoding segments and 5 new sight words. Decodable words were selected for each student based upon identified decoding deficits assessed weekly. Sight words were selected based upon the upcoming set of words in each student's RTI instruction lesson. Viewing of the video self-modeling movies occurred 4 times per week prior to RTI instruction. Data were collected twice per week using curriculum-based measures that included decodable and sight words printed in black and white on index cards and the Dibels Nonsense Word Fluency (NWF) assessment. A single subject multiple baseline across participants design was used. Pre- and post-test measures included the Fountas and Pinnell Benchmark Assessment, the Basic Phonics Skills Test, the Systematic Instruction in Phoneme Awareness, Phonics, and Sight Words Assessment and the standardized Woodcock-Johnson III subtests: Word Attack and Letter Word Identification. Results indicated an increase in decoding skills and sight word recognition for all participants. A two-week post-test maintenance assessment showed that 70% of the participants retained their highest decoding and sight word recognition skill levels or further increased their scores. The remaining 30% scored lower than their highest score but still remained above baseline. All 10 students improved their NWF scores from baseline to maintenance indicating a generalization of skills. Treatment integrity and inter-observer reliability were established with an equal rating of 98%. Social validity was recorded on video through an interview process that addressed both student and teacher feelings about the use of video self-modeling to improve reading skills and reading in general. Results from the study offer promise of an early response, specific intervention that may reach particular students who struggle with Tier II reading instruction.

Table of Contents

List of Figures

List of Tables

Chapter I

Introduction

Ensuring literacy for all children has been a National goal for many years. As examples, No Child Left Behind (NCLB, 2005) has sought to improve educational standards to support this goal and the Individual with Disabilities Education Act (IDEA, 2007) has mandated that this goal include all children. In response to NCLB, schools have enacted response to intervention (RTI) programs as a way of addressing the need for early intervention to improve literacy and to address the specific needs of students at risk for reading disabilities. Over the past five years the implementation of RTI has been the driving force behind delivering early intervention services to children at risk for reading disabilities (Berkeley, Bender, Peaster, & Saunders, 2009; Fuchs & Fuchs, 2006). The structure of RTI consists of collecting data for screening and monitoring, the use of evidence based curricula, and multi-tier service delivery (Adelman & Taylor, 1998; Fuchs & Fuchs, 2006; Vaughn, Linan-Thompson, & Hickman, 2003). An RTI multi-tiered program comprises three tiers. The first tier is general delivery of a structured reading program to all children. Tier two consists of small group instruction for students requiring additional reading assistance. Tier three is special reading services for individual students who do not respond well to tier two instruction. The most successful evidence based curricula used in RTI programs are those that follow the standards set forth by the National Reading Panel (2000) and include the following six components essential to reading skill acquisition: phonemic awareness, letters or letter patterns, reading text (decoding skills), vocabulary, fluency, and comprehension (National Educational Goals Panel, 1995; National Reading Panel, 2000).

In kindergarten and first grade, the emphasis of reading instruction is on phonemic awareness and the alphabetic principle (O'Connor, 2005). Phonemic awareness is when students learn the sounds they hear in words without attachment to written letters of the alphabet. It is the skill that is most predictive of reading development in children (Juel, 1988). Evidence based activities used to teach phonemic awareness include: stretched segmenting, stretched blending, onset and rime, positioning, and segmenting words into phonemes (Bradley & Bryant, 1985; O'Connor et al, 1996; O'Connor, 2000; Perfetti, Beck, Bell, & Hughes, 1987; Vaughn, 2003).

The next step in an effective reading instruction program is connecting sounds to letters. The notion that each sound heard in words is represented by one or more letters of the alphabet is known as the *Alphabetic Principle* (O'Connor & Jenkins, 1995; Tangel & Blackman, 1992). Several studies support the idea that the alphabetic principle does not necessarily come naturally to students and therefore needs to be taught through effective activities (Beck & Hamilton, 2000; McCandliss, Cohen, & Dehaene, 2003; Rack, Snowling & Olson, 1992). Children begin to learn to read words by applying the alphabetic principle to words.

Children become fluent readers by first developing strong decoding skills. Decoding requires breaking words into sounds, syllables and letter combinations. It is translating the printed word into the spoken word and is heavily dependent on good instruction (O'Connor, 2007). This process is more commonly known as phonics and is supported heavily by research. Phonics-based activities include: cumulative letter introduction, blending letter sounds, blending consonants and vowels, minimal pairs, and the silent “e” rule (Chall, 1996; Juel & Minden-Cupp, 2000; National Reading Panel, 2000; Perfetti et al, 1987). Because phonics work is so auditory and visual, many standardized, phonics instruction publishing companies provide digital video supplements to accompany their books, which include read-along segments, phonics, and comprehension activities (Edmark, 2003; Fountas and Pinnell, 2006; Pearson, 2009; Scholastic 2004).

Studies have shown that children who begin school with a deficit in early reading skills seem to maintain that deficit throughout the rest of their school years (Adams, 1990; Juel, 1988; Stanovich, 1986). This has been called the Matthew Effect, meaning that the rich get richer and the poor get poorer (Stanovich, 1986). But the idea that students cannot get past a poor start is becoming outdated because research has shown us that well designed early intervention can make a difference for some readers (Chard & Linan-Thompson, 2008; Fletcher & Vaughn, 2009; Foorman, Francis, Shaywitz, Shaywitz, & Fletcher, 1997). Early intervention in an RTI model begins with whole school screening, large group instruction, which is considered Tier I, small group intervention typically called Tier II, and intensive individualized instruction typically called Tier III. The focus is on determining early placement of students into the different tiers and developing successful instructional, monitoring, and assessment strategies for each intervention process (Chard & Linan-Thompson, 2008; Fuchs & Fuchs, 2006). The following are the core principles of RTI: a) early assessment and identification of poor growth in academic or behavioral areas, b) intensive intervention, c) monitoring of student progress, and d) varying instructional techniques based on the results of student progress (Fletcher & Vaughn, 2009; Fuchs & Fuchs, 2006; Vaughn & Fuchs, 2003). At the core of RTI models is the reliance on assessment. Continuous monitoring and proper assessment drive the decision making of RTI interventions. Children who do not respond to Tier III interventions are considered non-responders and may be evaluated for learning disabilities and/or special education placement (Fletcher & Vaughn, 2009; Fuchs & Fuchs, 2006).

Theoretical models of RTI suggest that approximately 15 to 20 percent of struggling readers will need small group instruction, and an additional 5 to 10 percent will need intensive individualized instruction (Fuchs & Fuchs, 2006; Vaughn, Linan-Thompson, & Hickman, 2003). If a child responds to small group instruction, he or she would not be considered at risk for learning disabilities (Catts & Kamhi, 2005; Vellutino et al., 1996). Children who do not responded to direct, explicit instruction using evidenced based materials would be evaluated for having reading disabilities (Gersten et al., 2008). However, a child who is not responding to Tier II instruction might be a good candidate for alternative instruction methods such as video self-modeling. A technology-based academic intervention might engage a child in a way that both motivates and improves learning ability (Edyburn, 2005). Special education placement may be avoided if a child responds successfully to video self-modeling.

Video Self-Modeling

Video self-modeling (VSM) is one of the fastest growing applications of modeling (Dowrick, 2006). It involves the following steps: identifying a task or skill that is a desirable behavior but currently unattainable by an individual; providing prompting and coaching of the task or skill during a video recording session to capture the individual accomplishing the task successfully; editing out prompting and coaching to produce a self-modeled video of the individual demonstrating the task successfully and independently; and finally, having the individual view the video of the successful behavior prior to the next attempt of the desired task or behavior (Dowrick, 1999, 2001, 2004; Hitchcock, Prater & Dowrick, 2004). Due to the unique design of personalized videos, video self-modeling has been proven effective across a wide variety of behaviors and individuals (Hitchcock, Prater & Dowrick, 2004).

Current review of the literature including a synthesis by Dowrick (1999; 2006) and a meta-analysis by Bellini and Akullian (2007) shows that researchers investigating the successful use of VSM have found significant effects in improved academic skills (Buggey, 2005; Edl, 2006; Greenburg, Buggey, & Bond, 2002; Hitchcock, Dowrick & Prater, 2003; Hitchcock, Prater & Dowrick, 2004), improved social skills (Bellini, Akullian, & Hopf, 2007; Dowrick, 1983; Kahne et al., 1990; Simpson, Langone & Ayers, 2004), decreased negative behaviors (Buggey, 2005; Clare, Jenson, Kehle, & Bray, 2000; Possell, Kehle, Mcloughlin & Bray, 1999), and increased functional / vocational skills (Dowrick & Hood, 1981; Lasater & Brady, 1995; McGraw-Hunter, Faw & Davis, 2006).

Studies that have included VSM as a treatment variable have had significant findings with various populations of students including those with mild disabilities (Bray and Kehle, 2001; Hitchcock, Prater, & Dowrick, 2004; Shunck & Hanson, 1989; Whitlow & Buggey, 2003), autism (Apple, Billingsley & Schwartz, 2005; Bellini et al., 2007; Buggey, 2005; Nikopoulos & Keenan 2003, 2004), and other disabilities (Dowrick, 1977, 1999; Lasater et al., 1995). VSM has been effective with preschool children (Bellini, et al., 2007), elementary-aged children (Dowrick, Kim-Rupnow, & Power, 2006; Greenburg, Buggey, & Bond, 2002), adolescents (Alcantara, 1994; Lasater et al., 1995; Mechling et al, 2005), and adults (Dowrick & Ward, 1997).

Statement of the Problem

There is great emphasis today on the implementation of RTI strategies and materials in order to improve reading outcomes for children at risk for reading disabilities. Many programs have demonstrated significant results statistically post implementation. However, there are some children who may not respond to typical direct instruction RTI interventions. Some children may require something tailor-made. Video self-modeling is one type of personalized intervention that has shown positive effects across a variety of skills and situations (Dowrick, 1999). Technology-based tools play a unique role in educating today's children. Utilizing technology is a native skill for young students and it provides opportunities for multi-modality instruction and learning. RTI direct instruction, specifically at the Tier II level, may take place in a classroom setting anywhere from 5 – 45 minutes per day, several days per week. Technology can provide supplemental instruction. Videos in particular can provide extended tutoring. Video self-modeling can provide the best tutor – the self (Bandura, 1969). In this study I am examining the effect video self-modeling can have on decoding skills of struggling first grade readers who receive Tier II RTI instruction.

Research Questions

Although there have been several studies on video self modeling and reading fluency and comprehension, there are no studies that have focused specifically on decoding skills. This study investigated the following research question:

1. Does video self-modeling improve decoding skills of children at risk for reading disabilities?

2. Does video self-modeling improve sight word recognition of children at risk for reading disabilities?

Chapter II

Literature Review

Reading Disabilities

Students with reading disabilities may experience difficulty with decoding, fluency, and /or comprehension. It is common for students with reading disabilities to read slowly and deliberately, re-read lines and phrases, lose their place on a page, guess often and omit or substitute words, letters, and phrases (McCray, Vaughn & Neal, 2001; NCLD, 2009; Swanson & Howard, 2005; Swanson & Siegel, 2001; Wilson, 1999). One of the primary reasons students are placed in special education is reading disabilities (Edyburn, 2003). The results of the 2007 United States National Assessment of Education Progress showed that 34% of 4th graders and 27% of 8th graders tested were reading below achievement level. Additionally, 80% of children identified with a learning disability have difficulty with reading, most commonly due to memory and attention problems as well as poor social skills, low self-esteem, or poor motivation (Gersten, Fuchs, Williams, & Baker, 2001; Mercer & Mercer, 1998). Children with reading disabilities often have deficits in phonological processing skills, including phonological awareness, rapid naming, and phonological recoding (Foorman, Francis, Fletcher, & Lynn, 1996; Smith, Simmons, & Kameenui, 1998a, 1998b; Stanovich & Siegel, 1994; Torgesen, 1996; Wagner, Torgesen, & Rashotte, 1994). These deficits make it difficult for struggling readers to master decoding skills because they limit the ability to read whole words and establish the automatic associations required for fluent reading (Stanovich, 1985). When students are struggling to decode words, little focus remains for comprehension (Stanovich, 1985; Vellutino, Scanlon, & Tanzman, 1994).

Decoding skills require that a student be able to identify letters of the alphabet, match them to their corresponding sound and blend these sounds together to form words. Decoding also involves segmenting formed words into sound parts (O'Connor, 2007). Many studies have shown that the majority of students with reading difficulties have the most trouble with decoding (Ackerman & Dykman, 1993; Badian, 1995; McBride-Chang & Manis, 1996; Meyer, Wood, Hart, & Felton, 1998; Van den Bos, 1997). Children with poor reading skills may inadvertently be placed in special education programs. A number of other studies have shown that early intervention can have a significant effect on the number of students placed in special education for reading or learning disabilities (Berninger, Thalberg, DeBruyn, & Smith, 1987; Blachman, 1994; Clay, 1993; Kennedy, Birman, & Demaline, 1986; Share & Stanovich, 1995). It is reasonable to consider the effect VSM may have on the young struggling reader if it means that such a uniquely identified intervention may improve a child's reading skills enough to ward off an unnecessary special education placement. Greenberg, Buggey and Bond (2002) found that VSM intervention was effective in improving reading fluency of third grade students who had been slow to respond to other reading instruction. However, following the logic of the importance of early intervention, it may be that VSM is well suited for struggling first-grade students to prevent them from becoming non-responsive third-grade readers.

Currently schools are trying to reduce the number of students placed in special education for reading disabilities or learning disabilities specific to reading, employing contemporary reading instructional strategies of RTI programs (Fuchs & Fuchs, 2007).

RTI for students with reading and/or learning disabilities consists of explicit direct instruction that focuses on the reading skills outlined by the National Reading Panel (2000). However, RTI reading programs can vary greatly in terms of instructional group size, types of tutors (community volunteers or teachers), standardization of instructional methods, number of sessions per week and duration of program and fidelity of the treatment program (Wanzek and Vaughn, 2007). One way to offer stability and support to reading intervention programs is to provide technology-based interventions, which by their very nature remain consistent. Many of today's researched-based commercial reading intervention programs include software support. Children with learning disabilities and those at risk tend to feel less threatened by computers and other technologies and respond positively to the multimedia and interactive presentation of learning materials (Altman et al; 2000; Edyburn, 2006; Hasselbring & Glaser, 2000). There are many technology-based reading materials and strategies that are evidence-based and meet criteria to supplement or play a direct role in RTI reading programs (Edyburn, 2001; Edyburn, Higgins & Boone, 2005). A number of these programs include video components to augment the auditory and visual training of reading instruction, which suggests that video, is recognized as a viable teaching tool in the reading instruction process. For example, the following are just a few contemporary reading instruction programs that contain video components:

1. *Read* 180 (Scholastic, 2009) developed at Vanderbuilt University is a comprehensive reading program that includes direct reading instruction methods and materials that are supported by digital video and audio materials. Implementation requires

whole group and small group reading rotations that include instruction, software based activities, and independent reading of leveled books. Hasselbring and Goin (2004) found that students using Read 180 benefited from the multimedia approach to reading by showing gains in listening comprehension, vocabulary, inferential comprehension, and total comprehension.

2. *System 44* (Scholastic, 2009) is another Vanderbuilt University software based reading program. It is a phonemic training program that focuses on the finite system of 44 sounds and 26 letters in the English alphabet. This program also follows the standard for universal design for learning by offering materials in multiple formats including print, audio, and video. This program is geared towards readers who are in Grade 3 and above.

3. *Waterford Early Learning* (Pearson, 2008) is a digital curriculum that works towards building early reading foundations for children at risk from Pre K - 2nd grade. The program is designed to support core curriculum and is aligned with state and National standards. There are over 450 hours of audio and video instruction, 15,000 activities, and 2,500-scaffolded lessons.

4. *My Reading Coach* (MindPlay, 2009) is a computer software teacher tool that provides one-on-one reading instruction to students. It is designed to supplement and support any reading program currently in place. This program is based on the research recommendations outlined by the National Reading Panel (2000). What is unique about *My Reading Coach* is the Teacher Intelligence™ that is embedded in the program. Teachers and speech pathologists have been video recorded to interact with and respond to any student-user based upon common responses. As a student navigates through

selected lessons (based upon initial assessment), a virtual teacher appears via video and provides coaching and guidance.

Video in the classroom has been around since the early 1960's (Wang & Hartley, 2003; Willis & Mehlinger, 1996). Researchers have reported on the use of VSM since the mid 1970s (Dowrick, 1999). For the past fifty years technology has eased its way into the classroom as an evolving tool to supplement or directly provide instruction. The findings of the National Technology Report (2006) show that technology-based instruction improves learning, increases student engagement, improves economic viability of the student, increases relevance with real world applications of academics, closes the digital divide (assuring all students the opportunity to become information literate), and builds 21st century skills. Today's children are native digital learners. Video is standard. Even in homes where children live in poverty and are considered at risk based upon a number of risk factors, videos are available on television and DVD players (Becker, 2000).

Children At Risk

Some students' lives are compounded by poverty, ADHD, Fetal Alcohol Syndrome, English as a second language, and/or cultural differences. Children who face one or more of these additional challenges are considered to be "at risk" for placement in special education or educational failure. Those who experience poverty in particular will be at even greater risk for academic underachievement (Hunt, Soto, Maier, & Doering, 2003; Donovan & Cross, 2002; Finn & Rock, 1997). Students at risk include children living in circumstances of family abuse and neglect. It also includes children who face abuse based upon ethnicity, language, gender or sexual orientation. Students at risk may also be gifted children (Kitano & Lewis, 2005). Although poverty is considered the greatest single risk factor, it is more likely that a child living in poverty will face a second risk factor such as ethnicity or language. A family is considered to be living in poverty when their total income is less than the income marker set by the U.S. Census Bureau. In 2008, the U.S. poverty threshold for a family of four was $22,025. In 2008, 39.8 million people in America are living in poverty (U.S. Census, 2008). In 2002, Park, Turnbull and Turnbull did a study on the impact of poverty on several quality of life domains. The findings show that children who live in poverty have an average of 2.1 fewer years of school than those who live in affluent households and that 34% of children who live in poverty will drop out of high school. Families who live in poverty with a child who has a disability show an even greater reduction in school attendance. In 2006, Christle, Jolivette and Michael corroborated these findings with a quantitative study of students in poor schools in Kentucky with high drop out rates.

Poverty is negatively correlated with school readiness and outcomes. The effect of poverty on education is widespread. Families living in poverty have the highest rates of alcohol, drug and tobacco use. This leads to problems such as low birth weight, Fetal Alcohol Syndrome and other neurological and behavioral developmental disorders. Low birth weight can lead to learning disabilities, among other problems. Fetal Alcohol Syndrome can result in developmental delays and behavior problems. Nutrition has also been identified as an important factor in learning concerning alertness, attention, and developmental growth (Donovan & Cross, 2002). The home environment plays an important role in preparing children for school and supporting them throughout their learning years (Kitano & Lewis, 2005).

Research shows that in order for children to be successful in school they need a nurturing, stable home environment. Also, there is an obvious difference in the reading scores between children who are read to at home and those who are not. By age 4 the average child in a professional family hears about 35 million more words than a child in a poor family. Sixty-two percent of kindergartners from the richest 20 percent are read to at home every day, while only 36 percent of kindergartners in the poorest 20 percent are read to daily. Single parents on average will have less income and less time for a child. Eleven percent of Caucasian children live in poverty, 36 percent of African-American children and 29 percent of Hispanic children are poor. Half of African-American children live in families where no parent has year-round full-time employment (Adams, 1990; Burns, Griffin & Snow, 1999; CEC, 2007; Hart & Risley, 1995). Children also need to feel safe and not worried in order to come to school prepared to participate in learning activities. They need verbal and emotional support to help them achieve expected academic milestones. Unfortunately, children living in poverty experience deficits in most of these areas of concern, which places them at risk for learning disabilities (Donovan & Cross, 2002).

However, children can be resilient. Some children prove resilient early on in their lives by demonstrating self-esteem, self-control, and independent pursuits despite the effects of poverty and other risk factors (Kitano & Lewis, 2005). Others develop resiliency as they are exposed to protective factors over time. Protective factors can include a caring adult, cooperative learning activities, community activities, and organized social groups (Murray, 2003). One key factor that has been identified is "engagement in school" (Kitano & Lewis, 2005). One method of engaging students in school is by utilizing assistive /educational technology to support core curriculum, which may also increase resilience (Edyburn, 2006). The use of educational technology is a vehicle that can provide opportunities for school engagement, cooperative learning, and interacting with a caring adult (Becker, 2000). Video self-modeling is a good example of a technology-based tool. The potential power of video self-modeling includes creating images for children that they typically do not see because they are not reflected in their daily environment – visual and auditory images of successful reading, decoding, oral language, and learning (Dowrick, 2003; Edl, 2006). When self-modeled videos are created at school students typically work with an adult to storyboard (i.e.; sketch a series of panels and sequence them to depict the important segments of the action to be filmed), film, and view videos. The use of a video camera to support reading skill development is considered assistive technology.

Assistive Technology

It is not a novel idea to consider using a video camera with a child at risk for reading disabilities; it is an idea supported by federal educational guidelines. When technology is used in the classroom with students at risk for disabilities, it can be placed under the category of assistive technology services. The Individuals with Disabilities

Education Act (IDEA) defines assistive technology service as "any service that directly assists a child with a disability in the selection, acquisition, or use of an assistive technology device" (IDEA, 2007 section 300.6). Assistive technology has been written into the education code in order to protect the rights of children with disabilities, to ensure equal access to technology. However, in practice, assistive technology can be used with all students, including those at risk. Judith Heumann (2000), while Assistant Secretary of the U.S. Department of Education (DOE), Office of Special Education and Rehabilitative Services, clarified that the term "all" includes children at risk, children in special education programs, and in early intervention programs from infancy through preschool.

The Department of Education (DOE) invests more than $56 million to study the conditions and practices under which technology is used to document its impact on student performance. The National Educational Technology Trends Study (NETTS) will examine technology implementation in schools receiving federal Enhancing Education Through Technology (EETT) grants authorized under NCLB (Bailey, 2004). The development of technology skills has been the objective of many major education initiatives. Goals 2000 (1994) outlined the computer skills that would be required of students by the new millennium and the Technology Literacy Challenge Fund (1997) dedicated 5 billion dollars to training and equipment for schools across the United States (Hitchcock & Noonan, 2000). And even while many school districts continue to struggle for funding, most are willing to dedicate a certain percentage of their budgets to the development of assistive and educational technology (Edyburn, 2002).

The U.S. Department of Education reports that in 1999-2000, 87.5% of students with speech or language impairments, 45.3% of students with specific learning disabilities, and 25.8% of students with emotional disturbance spent 79% or more of the school day in a regular classroom. This suggests that there is a pattern developing of least restrictive environment placements for students with special needs (U.S. Department of Education, 2002). All teachers, special and general education, need to develop skills to work with students with diverse learning styles and needs. Curriculum is not a "one size fits all" commodity. Students who are considered at-risk often do not thrive in traditional classrooms. Teachers who utilize educational and assistive technology to engage students are recognizing the need for contemporary tools to assist contemporary students with special needs. A primary focus of educating children at risk is to actively engage them in their learning. Studies show that high engagement is positively correlated with school achievement and that low engagement is correlated with school failure (Bulgren & Carta, 1993; Greenwood, 1991; Edyburn, 2002). Children are willing to engage in the learning process when technology is the vehicle because technology motivates them. They want to push buttons, interact, watch screens, listen for sound, navigate electronic pages, and be the star of a video. The 21st century child's world is not flat on the desk.

Motivation and Technology

Today's children are motivated by technology. They are native digital learners (Becker, 2000). Children who enter the first grade have been processing television, remotes, Internet, VCRs, DVDs, CD players, cell phones, video games and many other types of interactive technology for most of their lives (Boling et al., 2002). They have an intrinsic interest in learning technology and that interest increases their engagement time leading to better comprehension and application (Dockstader, 1999; Forcier, 1999). Children are motivated by technology because of the multi sensory and creative approach it offers. Unlike the frustration some adults experience with technology, children find this approach non-threatening and very rewarding. Studies have shown that at times some children may find technology less intimidating or confusing than working directly with adults. Even children with behavior problems can be engaged in computer work with a successful on-task experience (Case & Truscott, 1999; Eisenwine & Hunt, 2000; Forcier, 1999). In 2006, Jeffs, Behrmann, and Bannan-Ritland conducted a study on using assistive technology to teach literacy skills to students and their parents. The participants engaged in reading passages and working with online reading activities using computers and the Internet. The findings discussed the high level of motivation demonstrated by both students and parents to work on literacy skills.

Since the early 1920s, educators have used a multi sensory approach for teaching (Chall, 1992). Not only is the multi sensory approach motivating to students, studies have shown it helps students with disabilities keep up with their non-disabled peers (Hasselbring & Glaser, 2000). When students are motivated they are more willing to self manage their own behavior. Children who experience interactive, effective learning experiences develop lifelong learning and thinking skills (Neo & Neo, 2002; Piaget, 1952; Roblyer & Edwards, 2000; Vygotsky, 1978). Technology affords students the opportunity for increased production. For example, the use of a word processor with spell check and word prediction can speed up the production of an essay. The opportunities for technology-based multimedia presentation are numerous and easy to learn allowing students quick and simple ways to present material in more advanced formats. Information presented to students in digital formats can touch upon many sensory areas used in learning, which may speed up the processing and synthesizing of such information (Neo & Neo, 2002). What held the attention of students thirty years ago is not going to hold their attention today (NETTS, 2003). Technology rich environments offer access to knowledge that is presented in multiple formats, which may benefit children who profit from enhanced auditory and visual cues (Mechling et al., 2002). It enables participation in activities that involve modified core curriculum in a successful way. It empowers working independently or collaborating with others. Such environments can motivate students to become active learners (Wozney, Venkatesh & Abrami, 2006).

The process of learning is active. Students are required to participate in a deliberate way. This makes motivation an applicable component (Stipek, 2002). The active process involves the "why" someone will do something, which can affect the level of effort and can also result in different perceived levels of success. Motivation determines what students will learn, and how deeply they will learn it (Graham & Weiner, 1996). Some students are intrinsically motivated and are willing to learn something about everything. Other students are extrinsically motivated and are only willing to learn what is needed to receive acceptance and rewards (Pintrich, 2003). Roblyer and Edwards (2000) encourage the expansion of technology in education of children with varied needs and also offer several justifications. They state that the diversified needs of students require different resources and applications and that technology-based methods have promoted several motivational strategies such as gaining learner attention and learners taking control of their own learning. They believe that technology can facilitate unique learning environments to make traditional learning environments more effective in helping learners visualize problems and solutions and improve learning ability. For example, students with hearing impairments may benefit from an environment that supports the use of frequency modulation (FM) systems and students with speech impairments may benefit from augmentative communication devices (Duhaney & Duhaney, 2000; Roblyer & Edwards, 2000). Students with learning disabilities have benefited from the use of computer-based writing organizers and those with physical disabilities have been successful in the classroom with the assistance of alternative keyboards and touch switches (Edyburn 2006; Roblyer & Edwards, 2000).

There are several theories of achievement motivation that stress the importance of individuals' perception of their ability. Studies have shown that perceptions of ability influence the tasks people choose as well as their perception of success and failure (Stipek & MacIver, 1989). If an individual believes he/she has the ability to succeed at something, he/she is more likely to try (Stipek & MacIver, 1989). If an individual fears failure, he/she either won't try, or will choose an extremely difficult task so that failure can be blamed on the difficulty of the task and not on ability. This notion of perceived ability forms the backdrop for my proposed study using video self-modeling.

Video Self-Modeling

The study of the effectiveness of video self-modeling (VSM) developed out of the work of Albert Bandura and Lev Vygotsky (Buggey, 2003; Dowrick, 1999; Sherer et al., 2001). In the 1960s, Bandura conducted several studies that showed that children who were presented with a model of aggressive toy playing behavior would imitate the behavior, using some of the same behavior patterns and language modeled (Bandura & Hudson, 1961; Bandura, Ross, & Ross, 1961). In the early 1970s, Creer and Miklich introduced VSM to the field of education. By the mid 1970s, Peter Dowrick used VSM across a variety of learning environments with students with disabilities (Dowrick, 2006; Hitchcock, 2001). Currently there are over 300 applications of VSM described in print (Dowrick et al., 2006). Video self-modeling as previously described involves the video recording of a student performing a target behavior while either prompted or coached. The target behavior is typically one that is a desired behavior and/or one that is slightly ahead of the student's current ability. The video recording is edited to remove the prompting and coaching leaving the student with a video of his or her own successfully modeled execution of the target behavior. The video used in this way as an instructional tool is supported by Bandura's social cognitive theory and Vygotsky's theory of the zone of proximal development.

Bandura's work based on his social cognitive theory demonstrated that children learn many skills through modeling with and without reinforcement. His work showed that modeling has a strong influence on effecting behavior and self-efficacy. Bandura states that individuals develop self-efficacy through four pathways: mastery, vicarious, verbal, and affect experiences (Bandura, 1997b). Mastery, he states, is when you experience both failure and success in the same experience; vicarious is when you observe the models (others); verbal is what you hear from others; and affect influences your choices of behavior or action (Bandura, 1989).

Researchers have shown that self-efficacy can be influenced through the use of video modeling by observation of one's own success (Clare, Jenson, Kehle & Bray, 2000; Dowrick, 1983, 1991, 1999). Consider the mastery experience of a student successfully achieving a target skill after watching a self-modeled video while also experiencing the struggle of achieving the skill during the initial recording phases. In the initial creation of a self-modeled video a student will observe the actions of others. During both the recording and the observation phases, a student will hear undoubtedly commentary from others regarding his / her achievement. In these ways, video self-modeling can affect self-efficacy of students. Additionally, video self-modeling has been shown to increase academic, social, and functional skills, as well as decrease behavior problems (Bellini & Akullian, 2007; Dowrick, 1999).

The use of video modeling to acquire a skill just beyond current ability is also supported by Vygotsky (1978), who theorized that learning is most efficient in the zone of proximal development (ZPD); that is, when information to be learned is just beyond current knowledge but closely related to it. By definition, the ZPD covers experiences between a child's unaided performance and the performance that is possible with the help of a teacher or peer (Hausfather, 1996; Vygotsky, 1978). Dowrick (1999) has labeled the method of video recording a person beyond their current ability *Feed Forward*. The notion of Feed Forward is that there may greater impact on learning by providing an image of the future rather than reflecting on past performance such as when using feedback. Feedback, especially teacher and parental feedback, has been documented as important to and linked to the development of self-efficacy of young children (Skinner, Wellborn & Connell, 1990). For young children, feedback matters. However, my study set out to reaffirm Dowrick's (1999) previous work that Feed Forward may have an even greater impact than feedback on both acquiring target skills and self-efficacy.

Perceived self-efficacy refers to a person's belief that he or she can perform an identified task, accounting for different levels of performance under similar teaching/learning conditions (Bandura, 1997). Applying Bandura's theory to learning to read, children with disabilities and high self-efficacy may persevere in the face of difficulties, initiate more opportunities to practice reading, and become better readers than other children with the same level of cognitive ability. It is logical that children with high self-efficacy would be more likely to explore and persist in their ZPD. The bottom line is that children must read in order to improve reading. Unfortunately, children who do not feel they are good readers will not pick up a book (Henk & Melnick, 1995; Margolis & McCabe, 2003). Some children will tell others they are good readers even though they know they do not read as well as their friends (Klassen, 2002). Situations such as these are perfect opportunities for the use of VSM due to the potential positive effects of the visual images of being a good reader (Dowrick, 2006).

Researchers have used VSM to teach new behaviors such as spontaneous requesting, on-task behavior, and answering questions (Charlop & Milstein, 1989; Wert

& Neisworth, 2003); and to decrease problem behaviors such as tantrums and other disruptive behaviors (Buggey, 2005; Clare et al., 2000; Lonnecker, et al., 1994). For example, Buggey (2005) demonstrated that VSM helped to decrease tantrums in two elementary-aged boys with autism. In this study, a script was written to present situations that usually resulted in tantrums. The boys were prompted to react appropriately during the filming. The video was edited and viewed and the tantrum duration decreased. Progress was maintained when the video viewing frequency decreased.

Another participant in Buggey's study was chosen to see if VSM would decrease aggressive behaviors. This participant engaged in pushing behaviors that were reduced using VSM. During the intervention, only once did the participant push another child; the results were maintained after the video viewing was faded. The participant completed the maintenance phase in March of the year of the study and the pushing behavior did not occur for the remainder of the school year.

Dowrick et al. (1997) conducted another study that used VSM to decrease negative behaviors. The participant was a man in his late 20s with an intellectual disability, a type of conduct disorder, and pedophilia. The researchers used VSM to help him develop adaptive coping behaviors when children were in his presence. A VSM tape was created demonstrating two scenarios. The first showed the participant carrying clothes to the laundromat and choosing another route when he saw that children were in the vicinity. A second video showed the participant hearing children playing outside of his window and then walking over to the stereo and turning up his music. The participant viewed the laundry video repeatedly and on his third viewing he generalized the skill by walking in a different direction when he noticed children on his path to take out the trash. After the generalization of the first skill, the second video was shown and within a week, when the participant heard children playing outside his window, he turned up his stereo and did not go to the door.

Lasater et al. (1995) investigated the effect of VSM on task fluency. The participants were two teenage boys who had difficulty with completing tasks such as shaving, making lunch and washing their clothes. They were shown a video of themselves completing these tasks fluently. In the baseline phase the boys completed from 11% to 16% of the steps of each task. After the VSM intervention, the percentage of steps accurately completed increased to 96% and 100%.

In 1978, Dowrick and Hood applied a VSM application to a case of selective mutism. Two children who were never observed to speak at school but spoke freely at home were video recorded in both settings. The conversations from the home setting were edited into the school setting video and the children were given the videos to watch. They viewed themselves for a period of 10 days having conversations with adults and making comments to the other child. Both children significantly increased their rate of conversation in the school setting. The students responded very well to a self-model and not as well to a peer model.

Sherer, Paredes, Kisacky, Ingersoll, and Schreiman (2001) compared video self-modeling and video peer modeling. The researchers evaluated both procedures with high functioning students with autism using a combined multiple baseline across participants and alternating treatment design. The results show that video self-modeling is effective for some participants while video peer modeling is effective for others. Sherer et al. also concluded that VSM was not preferred over video peer modeling. They suggested that there are advantages and disadvantages to either kind of modeling, however they noted that children like seeing themselves in a movie or on the television (when displayed that way), suggesting that they may attend to the video longer and process the information better.

Charlop-Christy, Le, and Freeman (2000) compared live modeling to video modeling to determine which form of modeling was more effective. Researchers filmed adult models demonstrating social verbal skills, such as using greetings. The participants, young children with autism, viewed the video model and the live model. Charlop-Christy et al. determined that the video modeling was more effective in improving social skills for the participants. The researchers studied whether video modeling by familiar adults was as effective in modifying behaviors as live modeling by familiar adults. Five 7 to 11-year-olds with autism participated in an after-school behavior therapy program. All of the participants struggled with verbal skills. The researchers chose four functional skills per participant and modeled two skills using video adult modeling and two skills using live modeling for each participant. For example, one participant, Jeff, was to independently greet the researcher when he walked in the door. This task was modeled through video adult modeling. The second task required of Jeff was to say goodbye when he left the room. This task was modeled through vivo, or live modeling. The results indicated that it took two presentations of the vivo model for Jeff to meet criterion by saying goodbye, and two presentations of the video adult modeling to meet the greeting criterion;

however, the video adult modeling task of greeting generalized while the task of saying goodbye modeled through vivo modeling did not. The researchers concluded that video modeling was less expensive, took less time, and promoted generalization.

Reading and Video Self-Modeling

Hitchcock et al. (2004) used VSM combined with tutoring to increase reading fluency and comprehension skills of four first graders with reading difficulties. Three of the four participants' skills improved dramatically. They used story mapping (i.e., creating a visual depiction of the settings or the sequence of events and actions of story characters) and direct instruction in the tutoring program. Another example demonstrating the effective use of VSM to increase reading skills is a study by Greenburg et al. (2002). Three third-grade participants who struggled in reading and were at least one year below grade level were chosen for the study. These students viewed themselves fluently reading passages that were above each of their current reading levels. To create the video, students received prompts as needed, which were then edited from the final videotape. The students watched their VSM tapes once a day and the study showed an increase in oral reading fluency. Two of the participants increased their oral fluency a full grade level and the third participant increased from the 25th percentile to the 75th percentile of his current grade level.

Dowrick et al. (2006) also demonstrated that VSM could increase reading fluency. Participants included ten first-grade students selected by their classroom teacher as having the most difficulty reading. On average, they increased reading fluency from

7.2 words per minute to 21.2 words per minute. The students were tutored in passage reading, comprehension, vocabulary, sight words, and phonics. Videos were created with participants reading difficult passages and sight word flashcards. The videos were edited to show students a fluent self-model of themselves reading. Dowrick calculated a reliable change index (RCI) for each student, which is like calculating an effect size. Z scores outside the range +/- 1.96 are considered significant. All participants reached criterion in one to three months scoring between +2.70 - +8.34. Dowrick et al. 2000, found that 80% of students who participated in VSM improved reading fluency 2 – 4 times as much as their peers who only received tutoring.

Summary

In order to meet the literacy challenges set by the No Child Left Behind (NCLB) Act (2001), schools have been establishing early screening strategies and response to intervention reading programs. Current research supports early reading instruction and has provided evidence for a sound base of effective activities and materials based upon the recommendations of the National Reading Panel (2000). It has been shown that many children who receive direct reading intervention designed to meet their specific needs will overcome early reading deficits (O'Connor, 2000; O'Connor et al., 2005).

Technology can play a role in early reading intervention. Typical RTI instruction outside of the classroom setting involves 15 – 20 minute sessions with a trained community, school, or professional tutor several times per week. Technology can offer additional support during other hours including at home, after school, and on weekends.

The use of a video camera enables self-modeling opportunities, which allow for students to observe themselves as successful readers and to practice the reading skills that have been recorded and made portable on a CD, DVD, flash drive, iPod, or webpage. Various assistive and educational technologies have successfully provided learning support to struggling students. Motivation seems to be a key factor in the success of technology-based instruction. Today's students are native digital learners and are motivated by technology. Additionally, students with particular deficits may benefit from the multimedia presentation of materials.

A number of studies have shown positive gains utilizing video self-modeling to increase reading fluency and comprehension (Greenberg, Buggey & Bond, 2003; Dowrick, 2006; Hitchock et al., 2003). There has been no evidence to date of studies looking specifically at video self-modeling to improve decoding skills. Decoding skills and recognition of sight words are the foundation of reading fluency and comprehension. In this study I used video self-modeling with second semester first grade students who were receiving RTI Tier II direct reading instruction. The second half of first grade allows for a better assessment of potential reading skills or deficits (O'Connor & Jenkins, (1999).

Overview of the Study

Ten first grade students who were currently responding poorly Tier II RTI instruction received an intervention of video self modeling to investigate whether this instructional tool would affect the target skills: decoding and sight word recognition. A single subject, multiple baseline AB design was used across subjects.

Research Design. Single case designs (SCD) are typically used for interventions such as VSM that are designed for small populations (Dowrick, 1999). They are also best used when there are only a few subjects within a group to study. VSM is a unique and personalized intervention that typically includes 3 – 10 subjects (Greenberg, Buggey & Bond, 2002; Dowrick, 1999; Hitchcock, 2001; Horner et al., 2005) and fits well within the scope of a SCD. The advantage to using a single case design is in identifying useful interventions that may meet the needs of students who are non, or slow responders to typical instruction (Horner et al., 2005; Riley-Tillman & Burns, 2009). The use of a baseline phase in a SCD allows the researcher to obtain a clear picture of an individual level of performance and to visualize discrete data changes as a result of the intervention and marking performance shifts (Riley-Tillman & Burns, 2009; Scruggs & Mastropieri, 1998).

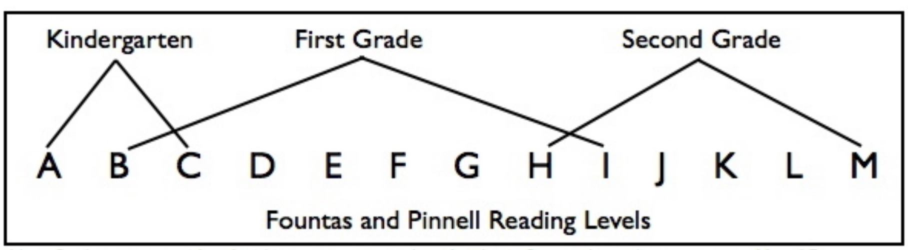
Chapter III

Methods

Participants

This study included ten first grade students from a Title 1, low socio-economic-status (SES) elementary school in southern California. The classroom teachers, reading, and special education resource specialists identified ten students as candidates for this study based upon eligibility criteria of reading below grade level and having demonstrated specific deficits in decoding skills and phonemic awareness throughout kindergarten and the first half of first grade. Scores from the Fountas and Pinnell Reading Benchmark System (2008) beginning year assessment placed each student at reading level A or B, which is below grade level for first graders (See Figure 1).

Figure 1.



Note: Students are considered within average range when they begin first grade reading at or around Level E.

Scores on the Basic Phonics Skills Test (BPST) (Sheffelbine, 2006) administered at the beginning of the Fall 2009 school year showed a non-passing score for each student. These students were drawn from a group of first graders who were receiving Tier II instruction in a pullout setting for part of each day. The students are described for age, gender, and ethnicity, and were considered based upon school record of attendance (See

Table 1).

Table 1.

Participant Demographics

Student	Age	Gender	Ethnicity
Jordan	6.4	M	Hispanic
Skyler	7.5	M	White
Trevor	6.9	M	White
Jason	6.9	M	Hispanic
Sheryl	6.5	F	Hispanic
Drew	6.9	M	Hispanic
Gavin	7.9	M	Hispanic
Danise	6.5	F	Hispanic
Jake	6.10	M	White
Latoya	7.5	F	African American

Note: Age is as of February 2010

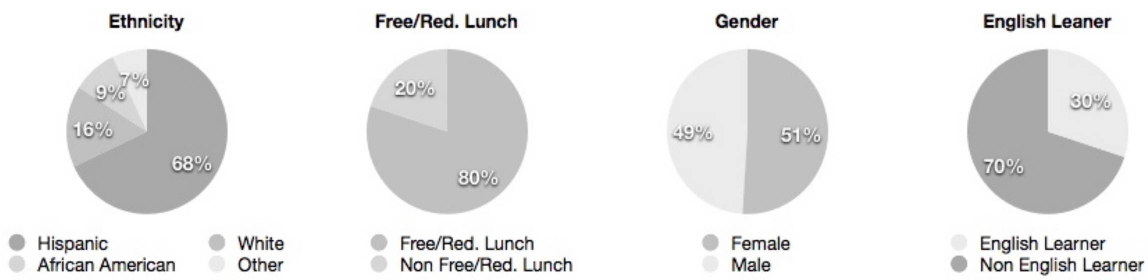
There were 26 first grade students receiving Tier II intervention during this time. All of these students had attended the school since the start of kindergarten and had demonstrated good attendance records throughout the first half of first grade. The criteria for selecting 10 of the 26 students included lowest test scores, least thriving in Tier II, attendance records, and teacher willingness to participate. The ten students selected were considered at risk for reading disabilities and were currently placed in general education first grade programs.

The adult participants consisted of myself, the reading specialist who holds a master's degree and has been at the school for more than 10 years, the reading specialist teaching assistant, the resource room teacher who holds a master's degree and has been at the school for over 10 years, and the resource room teaching assistant. Both assistants have been at the same school for more than 8 years.

Setting

The school is located in southern California in the city of Taylorville. Taylorville is a divided community of older, established, homeowner residents on the north end of the city and the low income housing residents from the south end of the city where most of the students attending this school reside. The school demographics show that approximately one-third of the student population changes at the beginning of each school year with continued changes as the year progresses. Ethnic composition is as follows: 68% Hispanic, 16% White, 9% African American, and 7% Other. Thirty percent are English learners (predominately Spanish speaking but including Burmese, Indonesian, Urdu, Vietnamese, and Filipino). Eighty percent are on free/reduced lunch and 51% are female (See Figure 2).

Figure 2.



The study took place during the morning hours, 4 days per week in the reading specialist's classroom. The classroom was divided into sections conducive to small group instruction with a mix of horseshoe and rectangular tables and room dividers. Along the back wall were computer stations equipped with headphones and divider carousels. There were many windows in the room allowing for natural lighting and a warm, comfortable feeling without being too distracting (e.g., not facing playground). The walls showed displays of reading techniques, incentives, supports and word lists. The students were familiar with this setting because it is where they receive daily reading instruction. During the intervention the students were the only ones in the classroom.

Measures

School administered measures. Data from the beginning of the school year were collected from the classroom teachers of each of the ten students. Scores from the (school wide) Fountas and Pinnell Reading Level Benchmark System (2008) showed that each of the identified students was reading at or below Level B, which is below grade level for first grade students and the level at which Tier II intervention is recommended (e.g, Levels C - I are considered within average range for first grade with Levels F/G considered average for the middle of the first grade school year). Sample reading passages for Fountas and Pinnell are represented in Figure 3.

Figure 3.

Fountas and Pinnell Reading Level Samples:

Level A:

I can ride. I can kick. I can catch. I can jump. I can swing. I can slide. I can run. I can hide.

Level B:

My little dog likes to sleep with me. My little dog likes to eat with me. My little dog likes to run with me. He likes to play with me. He likes to ride with me. He likes to jump with me. He likes to read with me. My little dog likes me.

Level C:

Socks was sleeping on the bed. Socks was sleeping on my chair. I said, "Wake up Socks!" She was sleeping on the couch. "Wake up, Socks," I said. She was sleeping on the rug. I said, "Wake up Socks! She was sleeping by the window. I said, "Wake up Socks! Socks was sleeping by the door. "Wake up!" I said. Socks was sleeping under the table. "I can wake Socks up," I said.

Level D:

The horse went in the little house. "What a nice little house!" said the horse. The cow went in the little house. "What a nice little house!" said the cow. The pig went in the little house. The pig said, "What a nice little house!" The chicken went in the little house.

“What a nice little house!” she said. The duck went in the little house. She said, “What a nice little house!” The skunk went in the little house. Then… The horse went out of the little house. The cow went out of the little house. The pig went out of the little house. The chicken went out of the little house. The duck went out of the little house. “What a nice big house said the skunk!”

Level E:

Kate had a loose tooth. Her tooth was very loose. Kate played with her tooth. But it did not come out. “Don’t play with your tooth,” said Kate’s mom. “Eat your breakfast.” “I want my tooth to come out,” said Kate. “Your tooth will fall out,” said Mom. Kate wiggled her tooth. But it did not come out. Kate brushed her teeth after breakfast. She wanted her tooth to come out. She wanted it to come out now. She brushed and brushed. She brushed her loose tooth. But it did not fall out. Kate went to school. She played with her tooth at school. “Don’t play with your tooth,” said Kate’s teacher. Kate played with her tooth at lunch. She wiggled it and wiggled it. “Don’t wiggle your tooth,” said Ben. Kate went home. Her brother played with his blocks. Kate played with her tooth. “It is time to eat,” said Mom. “Come and have some soup.” Kate had some soup. She said, “Now I want a big, big apple. Kate took a big, big bite of her apple. “Look, Mom!” Kate said. “Look at my tooth now!

Level F:

I am ready for school,” said Ann. She had a new red backpack and new shoes. “We have one more thing to do,” said her mom. “You may need to get some glasses.” “I don’t need glasses!” said Anna. “You may need to get glasses to help you read,” said her mom. “Do you want to read at school?” “I want to read,” said Anna. “I love books! But I don’t want glasses.” Anna went to the doctor. “You do need glasses,” said the doctor. Anna looked at the glasses. “I don’t like these glasses,” she said. “Look at the purple glasses,” said Mom. Anna put on the purple glasses. Ann put on some red glasses. “I like red and I like these red glasses,” she said. “You look great in those glasses,” said Mom. It was the *first day of school. Anna put her new red glasses in her red backpack. "Don't forget your glasses," said Mom. "I put them in my backpack," said Anna. "Put your glasses on at school," said Mom. Anna and her mom walked to school. Anna looked at her new teacher. She opened her backpack and put on her new glasses. "I am Mrs. Bell," the teacher said. "I am your new teacher. We have the same glasses!" Anna smiled. "Yes, these are great glasses!"*

Level G:

Nick was looking at his book. His mom came in and said, "It's time for bed." "Okay, Mom," said Nick. Nick put on his pajamas. He washed his face and brushed his teeth. He was ready for bed Nick got into his bed. "Will you read me a story?" Nick asked his mom. Mom read the story to Nick. Nick liked the story about the magic fish. When the story was over, Nick's mom turned off the light. "Good night. Nick," his mom said. "Will you turn on the nightlight?" asked Nick. "Okay, Nick," his mom said. She turned it on. "Good night, Nick," his mom said. "Now it's time to go to sleep." "I can't go to sleep," said Nick. "I will give you a goodnight kiss," said Nick's mom. "Good night, Nick," his mom said. "Go to sleep now." "I can't go to sleep," said Nick. "Will you open the door?" he asked. Nick's mom opened the door. Light came into the room. "Good night, Nick," his mom said. "I can't go to sleep," said Nick. "Something is missing." He looked around the room. Something came in the door. "Wags! You're late," said Nick. "Now we can go to sleep." "Good night. Nick," said mom. "Good night Wags." "Good night Mom," said Nick.

Level H:

Big trucks are on the road. They are going to many different places. They are going to do many important jobs. This is a fire truck. Fire trucks help put out fires. This truck has a long hose that shoots water on the fire. This truck picks up trash. The trash goes in the back of the truck. The truck crushes the trash to make it smaller. Then the truck carries the trash away. This is a mail truck. It picks up mail from the post office. Then the truck carries the mail all over town. This big truck is a snowplow. It pushes the snow to the *side of the road. These bog trucks come to carry the piles of snow away. This truck carries all kinds of food. The truck picks up corn at the farm. Then it takes the corn to the market. This is an ice cream truck. The ice cream truck plays a song. Children hear the song and run to get ice cream. All kinds of trucks are on the road. Some trucks are for work. And some trucks are for play.*

Level I:

This is a koala. It comes from Australia. Koalas live in tall trees call gum trees. Koalas have sharp claws. The claws help them to climb the trees. Koalas have thick fur and white chests. They have fluffy ears and big noses! The koala's nose helps it find food. Koalas eat gum leaves. Koalas sleep in the day. At night, they wake up to eat. Koalas do not drink water. There is water in the leaves koalas eat. They get food and water at the same time. This is a baby koala. A young koala is called a joey, just like a baby kangaroo. When a joey is born it has no hair. A koala joey is very small. The little koala stays in its mother's special pouch. In the pouch, the baby koala drinks its mother's milk. This joey is seven months old. It is as long as a loaf of bread. The joey travels on its mother's back. It uses its thumbs to hold on. Koalas "talk" to each other Mothers and babies make soft sounds. Koalas make deep sounds when they are far away. Koalas have a problem today. Some people are cutting down trees to make room for house. Many people want to save these trees. Koalas need a safe place to call home.

Scores from the Basic Phonics Skills Test (BPST) (Sheffelbine, 2006), which was administered at the beginning of the school year, showed a non-passing score for each student. All 10 students were able to name the letters but were unable to produce the sound for each letter. The students are expected to know 21 letter sounds. However, the BPST is an informal assessment and is used primarily to gather information on each student reading below a 3rd grade level. There are a total of 100 possible points on the

BPST including letter sounds, vowels, diagraphs and word reading. Samples of the BPST follow below (See figure 4).

Figure 4.

Consonant sounds and names: Record <u>sounds</u> on <u>top</u> of each letter and <u>names</u> <u>under</u> each letter; do all sounds before doing letter names; you might skip names for sounds that are correct; mark correct answers with √, incorrect answers with actual response, and no response with **NR**; note which sounds are distorted, e.g., "fuh."

m s f l r n h v w z (continuous sounds)

b c d g p t j k y x q (stop sounds) ___/21

Students are given a sheet with 5 short vowel sounds and are expected to be able to identify and produce 5 short vowels. None of the 10 students were able to produce all 5 short vowels during the pre test period (See Figure 5).

Figure 5.

Short vowel sounds: "Tell me the sounds of these letters." If the students give a long vowel sound, prompt them by asking if they know another sound. Do not specifically ask for short vowel sounds. Record incorrect answers with actual response or NR if no response. Mark on top with ˘ for short, ¯ for long. Since you are only interested in the short vowel sounds, there is no need to prompt students if they do not give the long sounds.

i o a u e ___/5 short

Students are asked to read clusters of words. Each set has a specific focus such as /c/ blends, short vowels and final /e/. This section of the test is meant to offer discrete information regarding reading ability (See figure 6).

Figure 6.

Reading words with phonic patterns: Record incorrect answers with actual response or NR.
Note: Consider stopping when **total** number correct on **two consecutive rows** is 0-1.

a)	van	mop	fell	sun	fix	
	lot	kid	hug	wet	map	___/10 short
b)	chin	bath	when	shut	song	___/5 cd
c)	left	must	frog	flip	snack	___/5 c blnd
d)	filled	letting	rested	passes	licked	___/5 inflect
e)	fine	hope	cute	kite	rake	___/5 final e
f)	soap	leak	pain	feed	ray	___/5 lvd
g)	burn	fork	dirt	part	serve	___/5 r-c
h)	coin	soon	round	lawn	foot	___/5 ovd

The Systematic Instruction in Phoneme Awareness, Phonics, and Sight Words (SIPPS) (Sheffelbine, 2008) program assessment to determine instructional level placement was administered to each student. All 10 students were able to identify all 26 letters of the alphabet. Results showed that 3 students were placed at the first lesson of the beginning level (Level 11) of the SIPPS Phonics program. These results meant that the students did not achieve 5 correct consonant sounds and/or diagraphs; did not achieve 1 correct short vowel sound; did not achieve 3 “tell me the sound of each letter;” and did not achieve recognizing 7 identified sight words. Results also showed that 4 students were placed at the second level (Level 21), which meant that students were able to produce most consonant letter sounds but were unable to achieve all 5 short vowel sounds and diagraphs. They would also be able to read simple words made up of 8 consonants and 3 short vowels and recognize up to 8 new sight words. Three students were placed at SIPPS Level 31, which included an additional 4 consonants, all 5 short vowels and a longer list of new sight words. All 26 students receiving Tier II RTI instruction started at the first lesson in the beginning of the school year. Those who were responsive to the program were performing at Level 41 or better by the month of February. By the December holiday break, 7 of the 10 selected students were still at Level 11 in the SIPPS program (Level 31 was considered average performance for December). Lessons 1-10 contain the phonemes /s/, /n/, /t/, /m/, /a/ and sight words: *I, see, the, you, can, me, and, we.* The 10 students identified as poor responders (Level 11 – 31) were given the opportunity to participate in the video self-modeling intervention.

Standardized reading measures. Following parental permission, reading skills were further established by the Woodcock Johnson III Reading Mastery subtests Word Attack and Letter - Word Identification prior to the baseline phase of this study. The Word Attack subtest assessed phonics related skills by requiring students to pronounce regular psuedowords (e.g., wif). The standardization sample for the Woodcock Johnson III shows that the internal consistency coefficient for the Word Attack subtest is .87 and the test reliability is .83. The Letter-Word Identification subtest is primarily a sight recognition task, which requires identifying and reading isolated letters and words. The internal consistency coefficient for the Word Attack subtest is 0.94 and the test reliability is 0.95. The Woodcock Johnson III was administered a second time at the end of the study.

In this study, I examined the effect that VSM might have on decoding skills and sight word recognition of 10 students. These students had been slow and /or non-responders to the reading instruction they had been receiving. There can be many reasons for slow response such as language problems (all students speak English), motivation problems, learning disabilities, behavior issues, auditory processing problems, and a host of other possibilities. Based upon the success of VSM in the area of reading fluency in other studies, I wanted to see if VSM could improve decoding skills and sight word recognition of these struggling students.

Baseline and progress measures. Two measures were used to collect baseline and progress data. The first was a curriculum-based measure (CBM) from the SIPPS reading instruction program that included decodable word cards, sight word cards and reading passages that consisted of both word types (Sheffelbine, 2006). The second was the Nonsense Word Fluency (NWF) probe from the Dynamic Indicators of Basic Early Literacy Skills (DIBELS) assessment tools (Good, Kaminski, Smith, Laimon & Torgeson, 2001; Kaminski & Good, 1996). What was measured during this study were the number of CVC words correctly decoded and the number of sight words recognized. CBM from the SIPPS program was used to assess words decoded and sight words recognized twice weekly along with the Nonsense Word Fluency (NWF) probe. Reports on DIBELS have indicated interrater reliability at around .90 and concurrent validity with standardized achievement measures and teacher ratings from .60 to .70 (Elliot, Lee, & Tollefson, 2001) (See figure 7).

Figure 7.

***Sample of DIBELS**

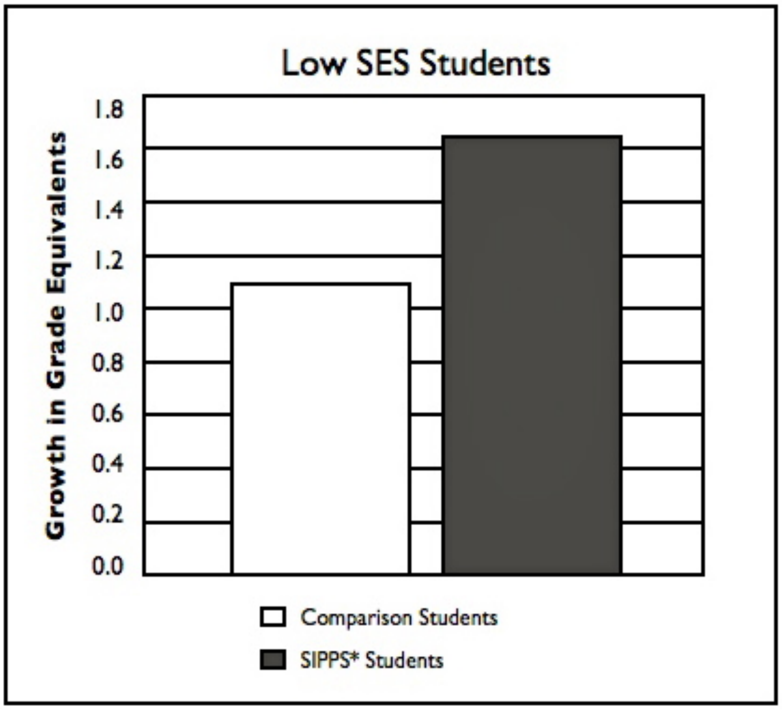
um	jac	zoj	oc	kom
kic	raj	lon	zeb	ig
mes	juk	et	noj	vin
jic	wuj	om	hul	mid
bes	pek	moz	um	ut
pej	waj	rej	jul	nej
lat	puz	des	ud	nam
mid	tuf	num	yaz	dod
bok	feg	yud	haj	uv
huj	os	kel	rif	yuk

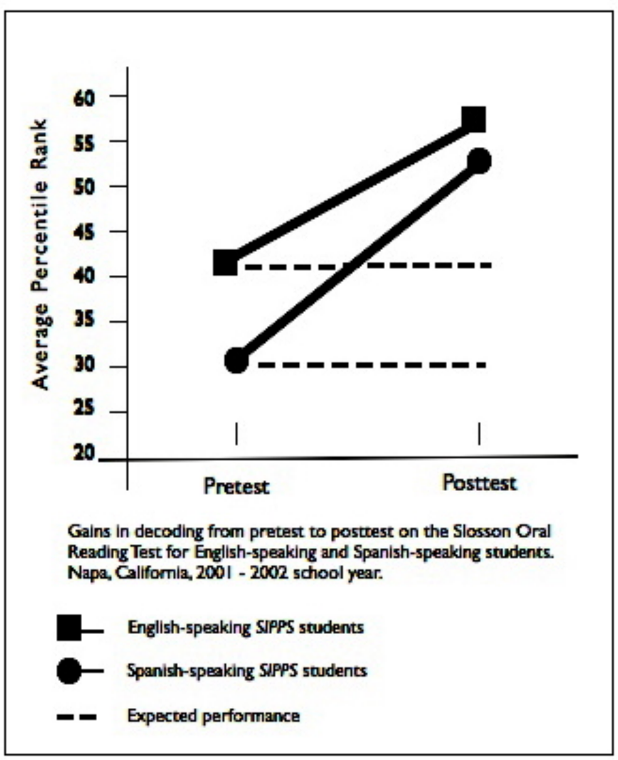
NWF:

SIPPS is a systematic phonics program developed by John Shefelbine (2004, 2006) that focuses on phonemic awareness, single syllable decoding, short vowels, simple consonants, complex vowels, consonant digraphs, polysyllabic strategies, and high-frequency sight words. SIPPS includes an assessment tool that determines placement and the (k-1) beginning level is for children who are considered non-readers. The assessment was re-administered during the first week of the study. The SIPPS first grade instruction consists of oral blending, segmenting of syllables and consonant–vowel–consonant (CVC) words and sight word recognition. Lessons 1 - 20 include phonemes: /s/, /n/, /t/, /a/, /r/, /i/, /f/, and sight words: *I, see, the, you, can, me, and, we, on, is, yes, are,* and *no*. Lessons 21 – 40 include phonemes: */h/, /u/, /d/, /c/, /k/, /ck/, /o/, /b/, /y/, /p/, /g/, /l/, /e/, /w/* and sight words: *he, she, get, can't, under, to, was, go, down, saw, my, where, here, they, little, put, what, do, like, have, home, said, her, of, out, some, come, make, says, say* and *be.*

SIPPS research results (Sheffelbine, 2006). Two schools in Napa, CA were provided the SIPPS program for grades 1-3. Two other schools using other phonics programs were used as comparison schools. A total of 547 students were assessed in the fall and again in the spring after 7 months of SIPPS instruction. Students using the SIPPS program showed significant gains in decoding on a normed assessment test. Across all students, low SES students had the highest gains. English language learners improved even faster than English speakers (See figure 8).

Figure 8. Results of SIPPS Validation Study





A sample of the SIPPS instruction follows (See figure 9).

Figure 9.

Lesson 15

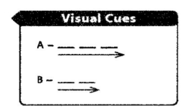
1) Reread Story Chart 14

For the *first reading* of a sentence in a story chart: For a sight word at the beginning of the sentence, "Read." For sight words that follow, just sweep under the word. For all decodable words, "Sound." "Read." For the *rereading* of a sentence in a story chart: "Read" for the first word in the sentence. Sweep under all the words that follow.

2) Phoneme Play

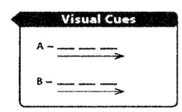
■ **Oral Blending of Phonemes** (Say the parts.) "Put them together."

A – sat, sit, fan, fin, fat, fit
B – at, it, an, am, if



■ **Segmentation** "Say ______." "Sound ______."

A – rat, Sam, mat, ran, sit, miss
B – ant, sat, ran, mitt, sit, rat



3) Phonics and Decodable Words

■ **Introduce** [1] Present a sample word in a sentence, have the students say the new sound, and discuss the wall card mnemonic. [2] "My turn." "My turn again." [3] "Together." "Sound." "Again." [4] "Your turn." "Sound." "Again."

r (mnemonic: "racing robot," continuous sound) Do not distort the sound by adding "uh."

■ **Review** (Mix order.) "Sound." "Again."

s, n, t, m, a_, r

■ **Blending Decodable Words** "Sound." "Again." "Read."

A – am, ram, at, rat, an, ran
B – sat, ran, ant, rat, man, an

CORRECTION [1] "My turn." "My turn again." (Blend the word twice.) [2] "Together." "Sound." "Again." [3] "Your turn." "Sound." "Again." [4] "Read."

4) Sight Words

■ **Introduce** (Introduce in a sentence.) "Read." "Spell." "Read." "Spell." "Read."

is

SIPPS Beginning Level | *89*

Research supports the use of CBM (Deno, 1992; Fuchs et al., 2001; Gickling & Thompson, 1985). Reasons for the support of CBM include the following:

1- Measurement procedures assess students directly using the materials in which they are being instructed (sampling items specifically from the curriculum). This makes a difference in classrooms that represent great diversity.

2- Administration of each measure is generally brief in duration (typically 1-5 mins.)

3-Measures are sensitive to small changes, which may indicate those associated with the variance of instruction.

4- Frequent and repeated measures are possible.

5- Data can be displayed graphically to provide for ease of monitoring student performance.

CBM is recommended for English language learners and students in special education (Deno, 2003). CBM probes are highly reliable. Interrater reliability is usually 95% to 99% (Fuchs et al., 2001). Regarding validity, more than one probe can be used per session using the median as a single data point to reduce variability of performance (Dowrick, 2006). Present levels of performance were established using CBM (e.g., decodable word cards, sight word cards, lesson reading passages) of the SIPPS program and the DIBELS NWF.

At the start of the study all 10 students were working on or near lessons 11 – 28 in the SIPPS program. This means that the CBM probes used to measure performance included the following letters and sounds /s/, /n/, /t/, /m/, /r/, /f/, /h/, /d/, /i/, /a/, /u/, and the sight words: I, see, the, you, can, me, she, he, get, can't, on, is, yes, under, to, was, are, no and, we. Students were asked to read a passage that included decodable words and sight words from corresponding and previous lessons. The following are a few sample probes from the SIPPS program that include decodable words and underlined sight words (See Figure 10).

Figure 10.

15 The Mat

A mat.

I sat on the mat.

You sat on the mat.

The man sat on the mat.

We sat and sat.

You and the man
sat on the mat.

The man is on the mat.

A mat.

19 Sam and Ann Ran

Can Sam sit on the mat? Yes.

Can Ann sit on the mat? Yes.

Sam and Ann are on the mat.

Is the can on the mat? No.

Is 1 ant on the can? No.

Are 2 ants on the can? Yes.

Is a rat in the can? Yes.

Sam and Ann ran.

24 Ann Is It

Ann sits on the tan mat.
She is It.

Sam runs. Riff runs.
We run fast.

Ann sees the man.
She runs to get him.

The man runs to the tan mat.
Ann can't get him.

Ann sees Sam.
He runs to the mat.

Riff runs to Sam.
Sam can't see him.

Sam runs into Riff.
Riff is under Sam.

Sam is on the mat.
Riff is It.

SIPPS™ Beginning Level

28 Kickball

Sam, Ann, and I kick the ball.
Kickball is fun.

Ann kicks my ball.
She runs to a stick.

Sam runs after the ball.
He can't get Ann.

Ann has a tack in a sack.
The tack falls in the mud.

I am sick. I can't kick
my ball. I miss it.

I go and sit down.
Sam runs to see me.

Sam falls in the mud.
The tack is stuck in my ball.

Ann gets the tack.
My ball has a hole in it.

SIPPS™ Beginning Level

Progress monitoring. Twice per week, after students had viewed their videos and participated in their Tier II reading instruction, two sets of index cards were used to assess the number of correctly decoded words and sight words recognized. One set had decodable words and the other had sight words. The selected words were from lessons 1-40, which covered the range of lessons students had completed through those to be completed within the study time frame. The decodable words included: fun, hot, cut, rub, him, ant, am, ram, tan, fat, mad, fun, mud, it, hat, in, may, sit, rat, fan, sat, if, man, fit, and ran. The sight words included: I, see, the, you, can, me, and, we, on, is, yes, are, no, he, she, get, can't, under, to, was, go, down, saw, my and here. (See Appendice 1 for a complete list of words). These cards were included in the SIPPS program set and looked like a single word in black print, centered on a white 3.5" x 5" un-ruled, laminated index card. Each student was shown the cards in flip card fashion and asked to read the word on each card. For the sight words they were allotted one minute to read as many words as they could from the set. For the decodable words they were given the entire set each session and allotted at least 5 seconds to read the word aloud. The cards were shuffled and presented in random order each time, and were administered by a reading assistant, the resource teacher, and myself. Each administrator had their own color-coded set of materials including cards, score sheets, stickers, pencils, timers and protocols. Number of correct words were recorded on score sheets and kept in individual student file folders to be later plotted as graphs for visual analysis.

With the exception of the Fountas and Pinnell reading assessment the measures were administered by the research team (See Table 2).

Table 2.

Schedule for Measures Administration

Measures	Fall	Feb.	April
BPST	●	■	■
F & P	●	●	●
SIPPS	●	■	■
WJ WA	●	■	■
WJ LWI	●	■	■
Decodable		■	■
Sight		■	■
NWF		■	■

● School Administered ■ Research Team Administered

Procedures

In preparation for the study I met with the principal of the school, the classroom teachers and the reading specialists involved in the study. I made a presentation of what was to be expected of each person, each student, and the benefits to the school program. This was followed by an introduction to the students and several informal observational visits to their classrooms and reading program. The first week of the study comprised assessment solely. During this time, the Woodcock Johnson III Word Attack and Letter Word Identification subtests were administered to each of the students (See Table 2 in the results section). The BPST, SIPPS Assessment and DIBELS NWF were also administered (See Tables 3 and 4 in the results section). The second week was the start of baseline data collection for the students receiving direct reading instruction. The first grade student participants received the SIPPS direct reading instruction tutoring from the reading specialist, and a team of reading assistants four days per week for 25-minute sessions. Once a stable baseline had been established for student response to the direct reading instruction, video recording was initiated for the video self-modeling phase. Several individual videos were recorded during the first week of VSM intervention. Students viewed their own video four times per week at a computer before beginning small group Tier II instruction. Viewing a video took 2 minutes per video for each student. The students were engage in Tier II instruction for 25 minutes. The VSM intervention was staggered across a multiple baseline phase beginning with the first set of 3 students. I introduced a video to the next group of students once criteria for change was met for at least two previous students. Criteria for change included two data points above baseline, or alternatively, the passage of a set number of intervention sessions. This continued until all students were viewing videos prior to their reading instruction.

For the personalized video, each student was video recorded as participating in a reading intervention session that included oral blending and segmenting of the phonemes and letter sounds determined by the specific lessons in which the student was engaged. For example: The student was shown /s/, /a/ and /m/ on index cards and was asked to identify the individual phonemes and then blend the sounds together smoothly without stopping: /ssssaaaammm/. This happened for several different sets of letters. The student was also shown sight words on index cards and asked to read as many he or she could within a minute. Skill sets in the videos included blending, segmenting, and sight word recognition slightly beyond the present ability of the student to utilize the feed forward technique (Dowrick, 1999). Students were filmed decoding and reading words in a manner that mirrored their daily Tier II sessions.

Each student was recorded to create several different videos that could be used throughout the course of the study. Video recording took place in a private classroom to eliminate noise and interruption. The student worked with one adult tutor at a time. A simple Flip Video Camera on a tripod, placed away from the student was used. The camera was placed at the best angle in order to capture the student's face and the materials. The student was coached to work on the specific activity. For example: the student was asked to blend a consonant vowel consonant (cvc) word such as /s/ /a/ /t/. The tutor asked the student to identify the sounds. If the student was unsure, the tutor modeled the sounds and how to blend them. When the video was edited, the tutor modeling was removed and the student was simply seen responding with the perfect blending of the sounds. The same process took place for segmenting sounds and for reading sight words. When a student needed prompting, coaching or modeling, it was provided. When the video was edited, prompting, coaching and modeling was removed. What remained was 2 minutes of the student correctly decoding words or recognizing sight words.

The editing was done with Apple's iMovie program on a standard Mac G5 computer. This program enabled the addition of still photos, graphics, titles and sound as necessary. For this study I made 3-4 videos for each student for a total of a 30-40 two minute videos. Throughout and at the end of the study, students were given copies of their videos to keep. The students always viewed his or her video(s) each morning before participating in reading instruction. The viewing requirement for the intervention was met by the 2-minute session each morning. Each student was granted permission to view his or her video during other free time upon request. They also took copies of videos back to class to share with their teacher and took home copies to share with a parent or guardian. Informal data were collected on the number of additional times a student viewed his or her video outside of the study parameters for social validity.

Data were collected twice per week using the CBM probes for each SIPPS reading level that highlighted the specific letter sounds and sight words taught. According to Riley-Tilman and Burns, (2009), it is important to collect a minimum of 3 data points for a baseline and at least 5 data point during the intervention phase. Once a stable baseline was established with enough data points and a prediction was made with a trend line, data collection on the VSM intervention began.

The first three students selected to begin with the VSM intervention were Jordan, Skyler and Trevor. These three students had the lowest pre-test assessment scores in addition to having stable baselines during the pre intervention phase. They began viewing videos prior to reading instruction on four days of the week set as Monday, Tuesday, Thursday and Friday. Videos were viewed in the order in which they were created. During the first week, the students only had one video to watch but in the second week they had two videos to choose between, or they could watch both. Over time, and after having recorded several videos, the students were always given the option to choose any or all of their videos to watch. Data were collected on Tuesdays and Fridays for each of the students. Eventually VSM was introduced to all 10 students, staggered in groups of 2 and 3. By the end of the 11th session all students were watching videos prior to reading instruction. Data was collected, establishing observable patterns with least 20 data points per student, over the course of twelve weeks.

Data Analysis

The most common method of data analysis for SCD is visual analysis (Horner et al., 2005; Riley-Tillman & Burns, 2009). This method was used for this study. Visual analysis involves examining data collected to compare baseline phases with intervention phases looking for patterns or changes in order to determine effectiveness of an intervention (Riley-Tillman & Burns, 2009). The data are plotted and graphed exactly as they are collected allowing the researcher to create trend lines and look for levels, immediacy, variability and overlapping data (Parker & Brossart, 2003). Riley-Tillman and Burns (2009) explain that levels of data lines can show differences between baseline and intervention and between interventions. Immediacy is one way of strengthening internal validity. If there are immediate changes in data points then the researcher can point out significant changes that may be due to the intervention. Variability is defined as checking for the amount of variation in the range of data points. If there are data points that overlap with the baseline then it is assumed that the intervention is not a very good one. Trend is explained as looking for the rate and direction of change within a phase. The researcher can calculate the slope of the trend line to determine rate of effectiveness (Hinkle, Wiersma, & Jurs, 2003).

If there are visible changes in trend, variability, immediacy, or levels in the results of a study, it may be reasonable to suspect that the study intervention is working. One method that can be used to make decisions regarding collected data is establishing the percentage of non-overlapping data (PND). This entails determining the highest baseline data point and drawing a line from that point straight through the intervention data points to see how many data points fall above (or below when trying to decrease a behavior) the line (Scruggs et al., 1987). I have calculated the PND by taking the number of data points above the line and dividing that by the total number of data points. For example, if there were 10 total data points and 8 that land above the line, I would divide 8 by 10 for a PND score of 80%. This would mean that 80% of the collected data points are not overlapping with the baseline data points. This will assist in making decisions regarding the effectiveness of the VSM intervention. PND is further discussed in the results section

(See Table 4).

Validity and Reliability

One of the limitations of SCD is the difficulty drawing generalization due to the small number of participants used in each study. Replicating the findings across participants, settings, or other measures of the dependent variable will enhance external validity. Utilizing a multiple baseline can address threats to internal validity (Horner et al, 2005; Riley-Tillman & Burns, 2009). This study used 10 participants to replicate findings and a multiple baseline across participants to enhance reliability that any changes in behavior were the result of the intervention. Another way this particular study enhanced reliability was to present the measurement word cards in random order daily and to set a time limit for each probe. Inter-observer agreement was addressed by having one adult tutor observe another adult tutor's session followed by taking the number of times agreed and dividing by the number of total items presented looking for a 95 - 100% agreement ratio. Treatment integrity was addressed by utilizing a checklist of instructions on how to present the SIPPS material during each session and how to arrange video viewing. The checklist included phrases such as "read this for me," "stretch these sounds out for me as long as you can," "put these two sounds together," and "say this word for me." The checklist suggested specific phrases for positive reinforcement that involved performance such as: "you are working hard today." Two people did the initial assessments (myself and the resource specialist). I personally did all of the video recording and editing.

Chapter IV

Results

In order to determine if the VSM intervention was successful in increasing the number of words decoded correctly and sight words recognized a visual analysis of the data was performed. This chapter presents a pre- and post-test assessment review followed by an analysis of individual participant data.

Assessment review. The results indicated that during the VSM intervention phase of the study all ten students made slight to moderate gains in decoding and sight word recognition. Pre- and post-test scores on the Basic Phonics Skills Test indicated that all ten students showed improved letter sound, diagraph, and vowel recognition and went from a non-passing score of below 70 to a passing score above 70 with a few students scoring higher than 80, the average score for middle year first graders (See Table 4).

Pre- and post-test scores on the Woodcock-Johnson III Word Attack and Letter Word Identification subtests along with the results of the Dibels NWF are listed in Table 2. The Mean standard score on the Word Attack pre-test was 101.8, *SD* 13.02 and the post-test Mean score was 105.2, *SD* 12.2. The Mean standard score on the Letter Word Identification pre-test was 97, *SD* 10.06 and the post-test Mean score was 96.4, *SD* 10.3. Scores for the Dibels Nonsense Word Fluency assessment were calculated in the optional format of counting words recoded correctly (WRC) rather than individual sounds decoded correctly. The average pre-test score for NWF recoding was 5.7 WRC with a range of 0-12. The average post-test score for NWF recoding was 19.0 WRC with a range of 8-30 (See Table 3).

Results of the SIPPS RTI intervention program placement assessment test show that three students (Drew, Danise, and Latoya) moved up one full level in the program; six students (Jordan, Trevor, Jason, Sheryl, Gavin, and Jake) moved up two full levels and one student (Skyler) moved three full levels. A level consists of ten completed phonics lessons with progressive introduction to consonants, vowels, diagraphs, and word clusters. The results of the Fountas and Pinnell Benchmark Assessment post-test reading scores show that two students (Jordan and Skyler) moved up two reading levels; three students (Danise, Jason and Latoya) moved up three reading levels; two students (Drew and Trevor) moved up four reading levels; two students (Jake and Sheryl) moved up five reading levels; and one student (Gavin) moved up six levels (See Table 5). These reading level scores are important because they play a role in determining whether these students will continue in the Tier II intervention program as they enter second grade in the next school year. Students who test within the average range of a reading level for the second grade may be sent back to Tier I in the fall. Students who showed a decline of scores during a two-week follow up re-assessment did not return to baseline. Individual scores follow in the next section of this chapter.

Table 3.

Standardized Assessment Results for Pre- and Post- Test Assessments

Students	WJ WA Pre	WJ WA Post	WJ WA Pre	WJ WA Post	NWF Pre	NWF Post
Jordan	99	114	100	96	19	42
Skyler	98	102	82	84	18	72
Trevor	89	99	106	105	10	24
Jason	111	113	101	101	15	57
Sheryl	79	89	80	82	18	54
Drew	117	113	107	110	36	57
Gavin	94	96	86	89	18	54
Danise	122	121	110	108	15	54
Jake	109	118	98	102	23	90
Latoya	100	87	100	87	29	88
Mean	**101.8**	**105.2**	**97**	**96.4**	**20.1**	**59.2**
SD	**13.1**	**12.2**	**10.6**	**10.3**		

Note: Woodcock-Johnson Subtest scores are based on the Woodcock-Johnson Test of Achievement national sample at grade level, M= 1--, SD= 15

Table 4.

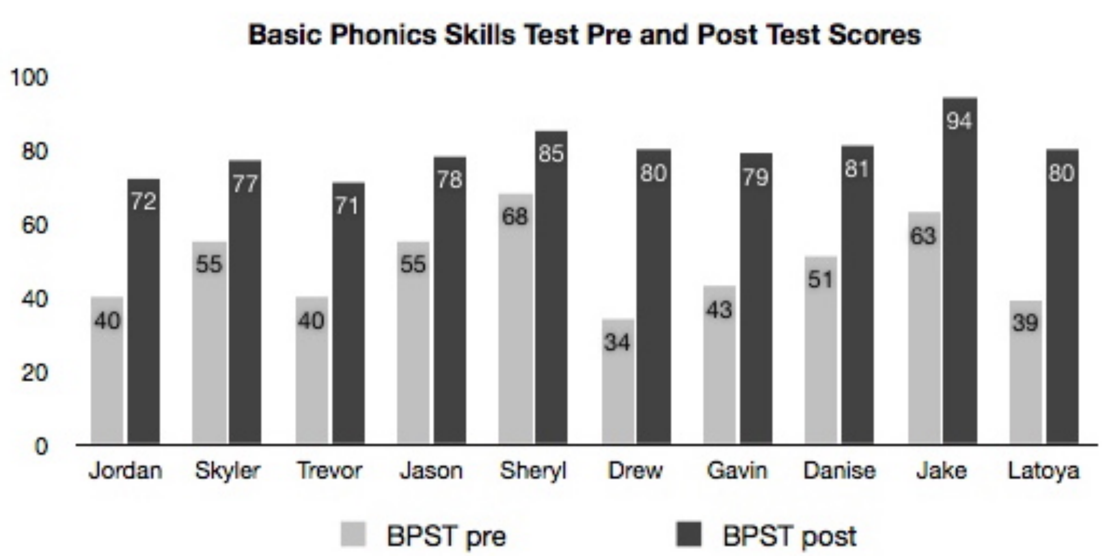


Table 5.

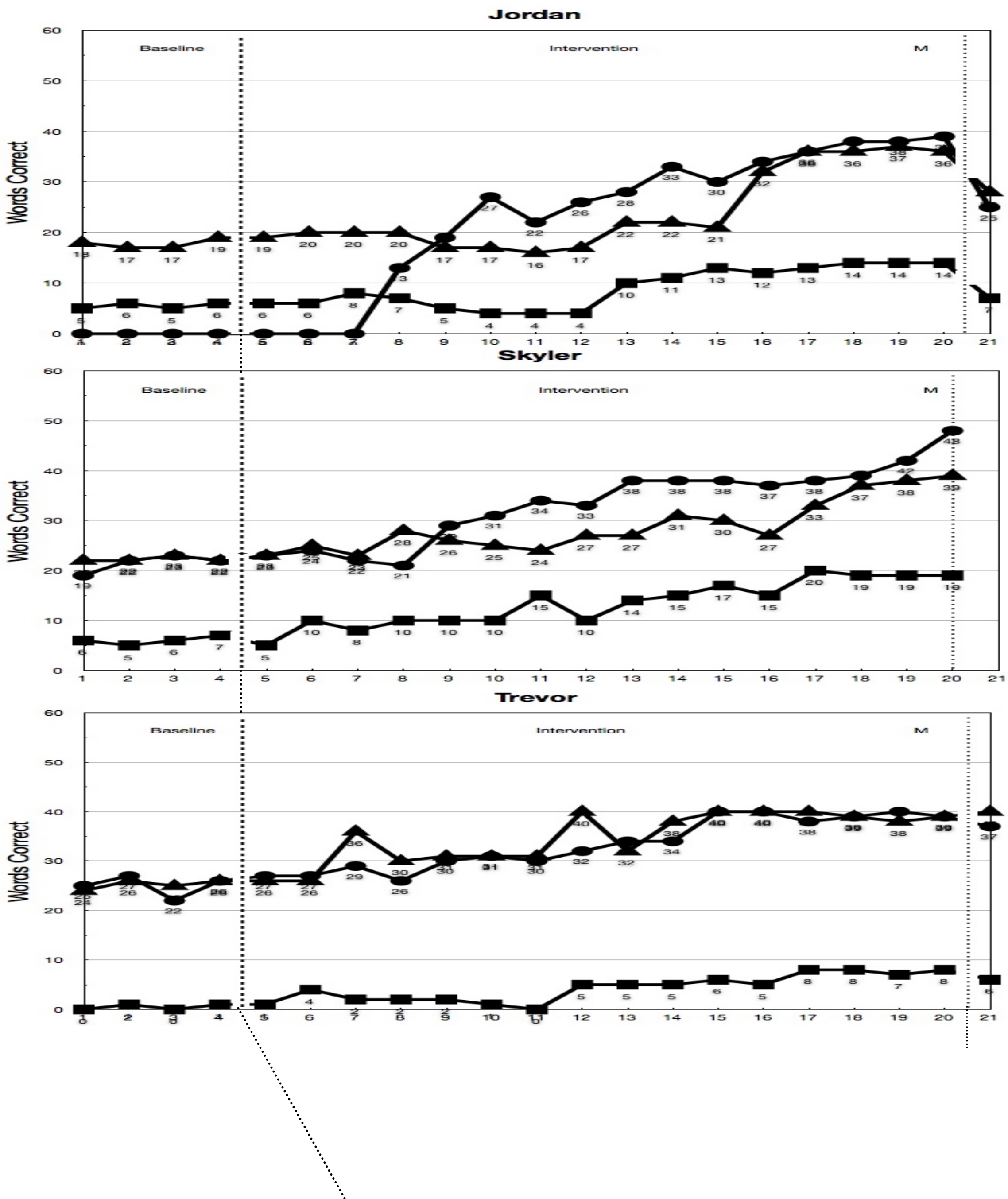
Reading Assessment Pre- and Post- Test Scores

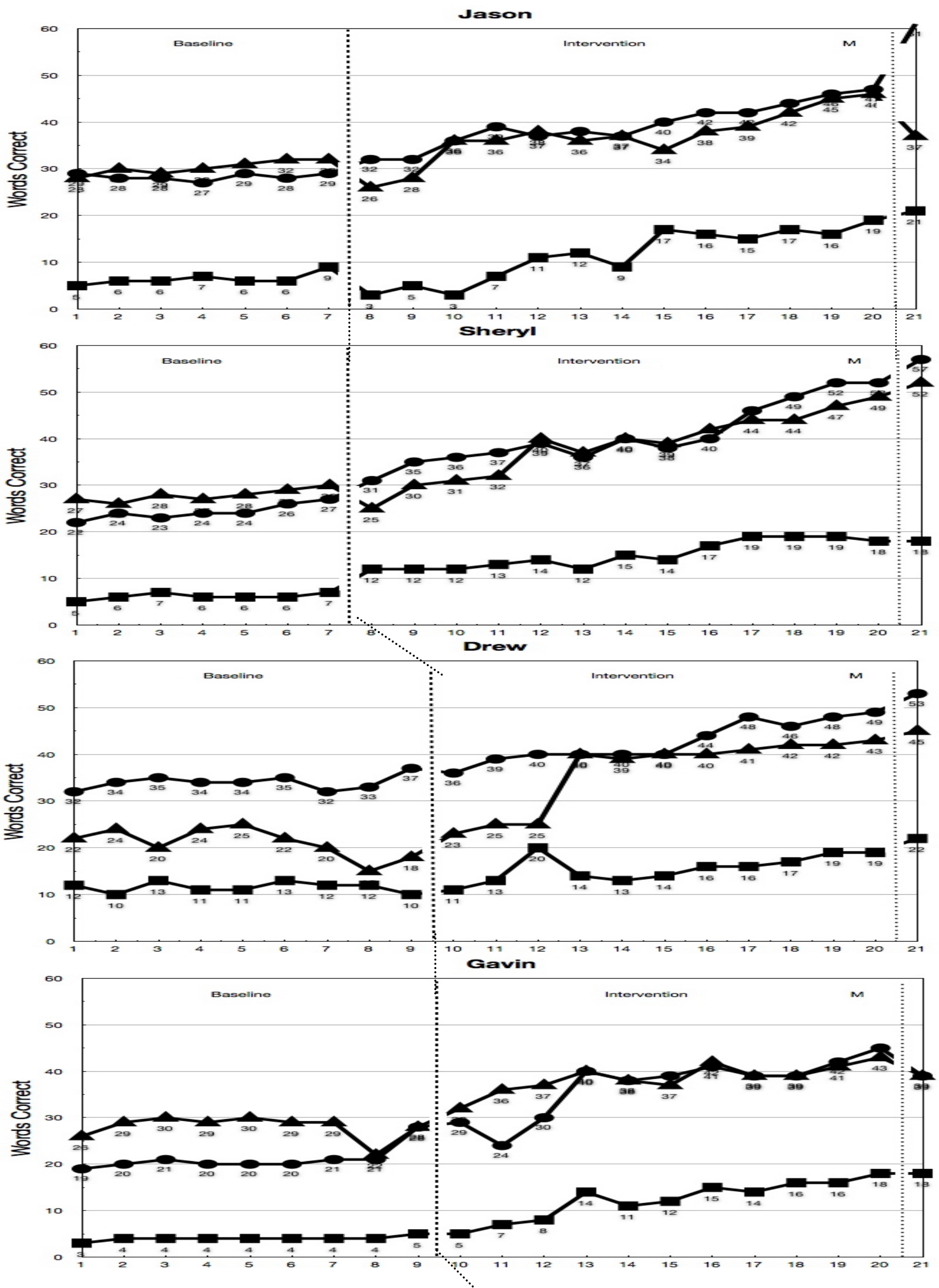
Student	BPST pre	BPST pre	SIPPS pre	SIPPS pre	F&P pre	F&P pre
Jordan	40	72	11	31	A	C
Skyler	55	77	11	41	A	C
Trevor	40	71	11	31	B	F
Jason	55	78	21	41	A	D
Sheryl	68	85	21	41	A	F
Drew	34	80	31	41	B	F
Gavin	43	79	21	41	A	G
Danise	51	81	31	41	B	E
Jake	63	94	21	41	B	G
Latoya	39	80	31	41	B	E

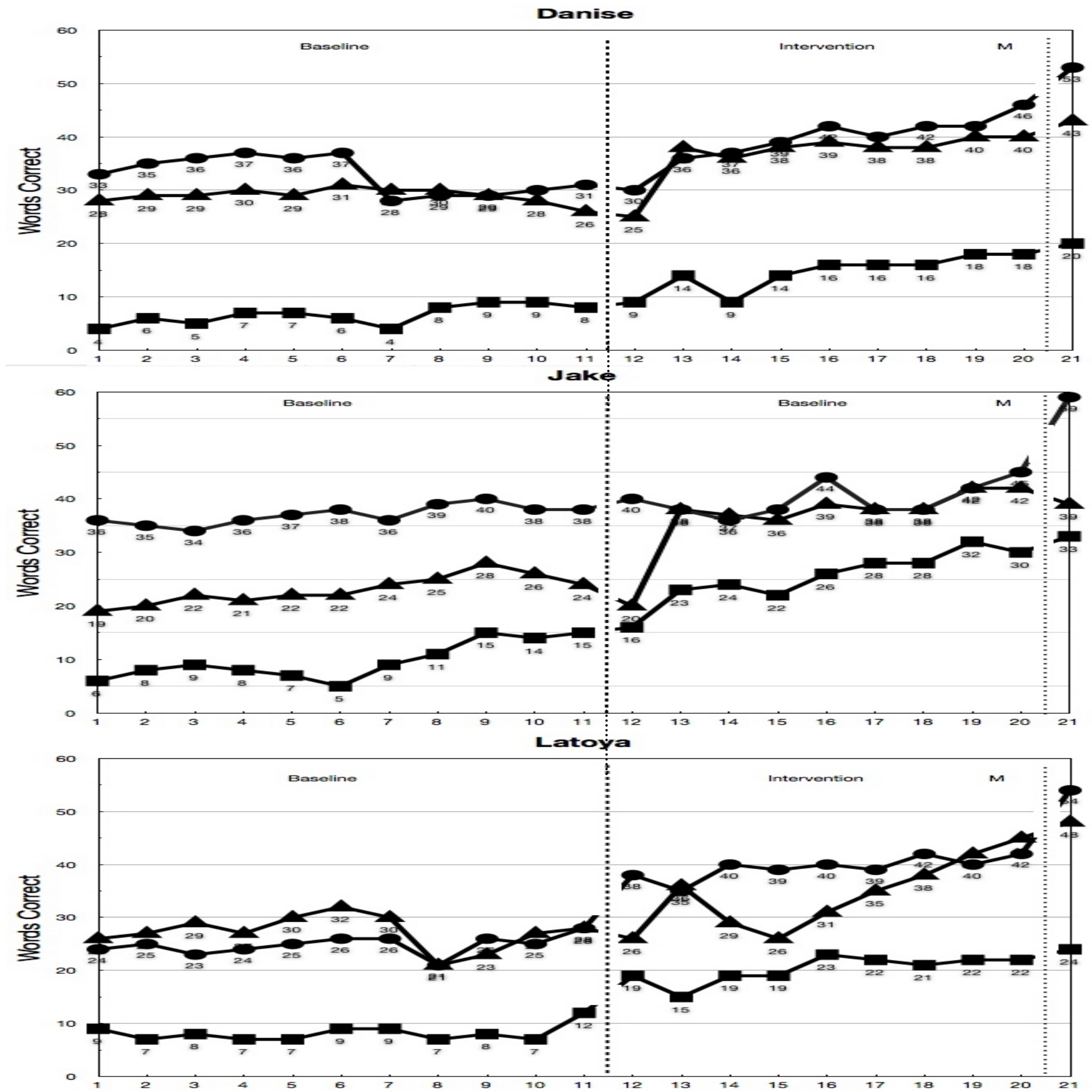
Note: Basic Phonics Skills Test (BSPT); Systematic Instruction in Phoneme Awareness, Phonics, and Sight Words (SIPPS); Fountas and Pinnell Benchmark Assessment System (F&P)

The following figures show the multiple baseline results for all ten students grouped together (See Figure 11) and the Percentage of Non Overlapping Data (PND) for each measure (See Figure 12). The range of effectiveness for PND is 70-90%, with 70-80% considered effective and 90% considered very effective (Scruggs & Mastropieri, 1998).

Figure 11. The Multiple Baseline Effect of all Ten Students:

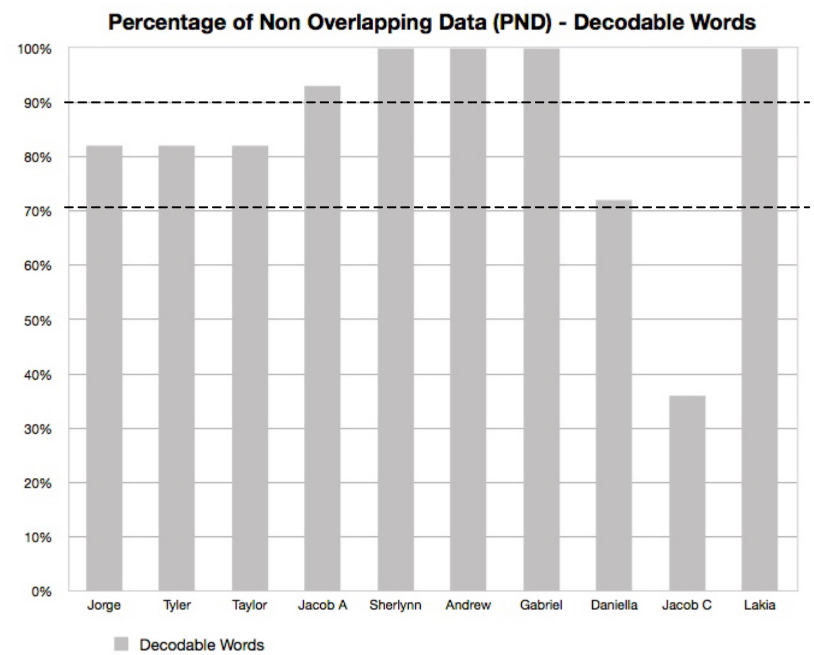


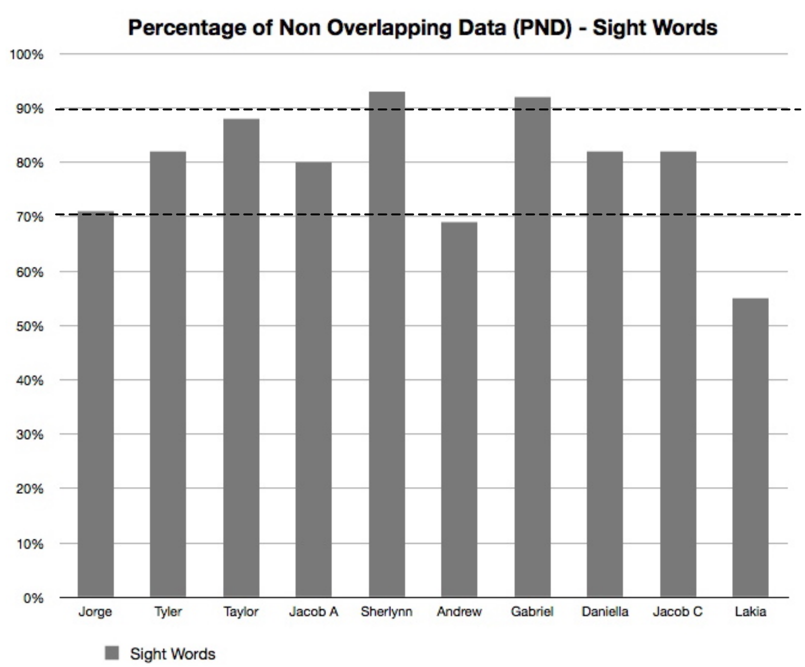

Jason
Baseline
Intervention
M
Words Correct
Sheryl
Baseline
Intervention
M
Words Correct
Drew
Baseline
Intervention
M
Words Correct
Gavin
Baseline
Intervention
M
Words Correct

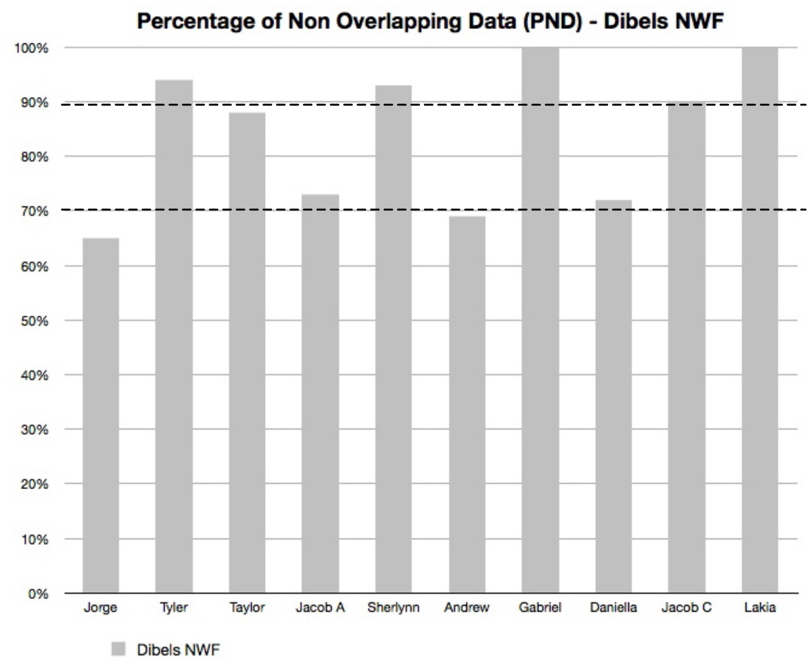


Danise
Baseline
Intervention
M
Words Correct
Jake
Baseline
Baseline
M
Words Correct
Latoya
Baseline
Intervention
M
Words Correct

Figure 12. Percentage of Non Overlapping Data:







Individual Results

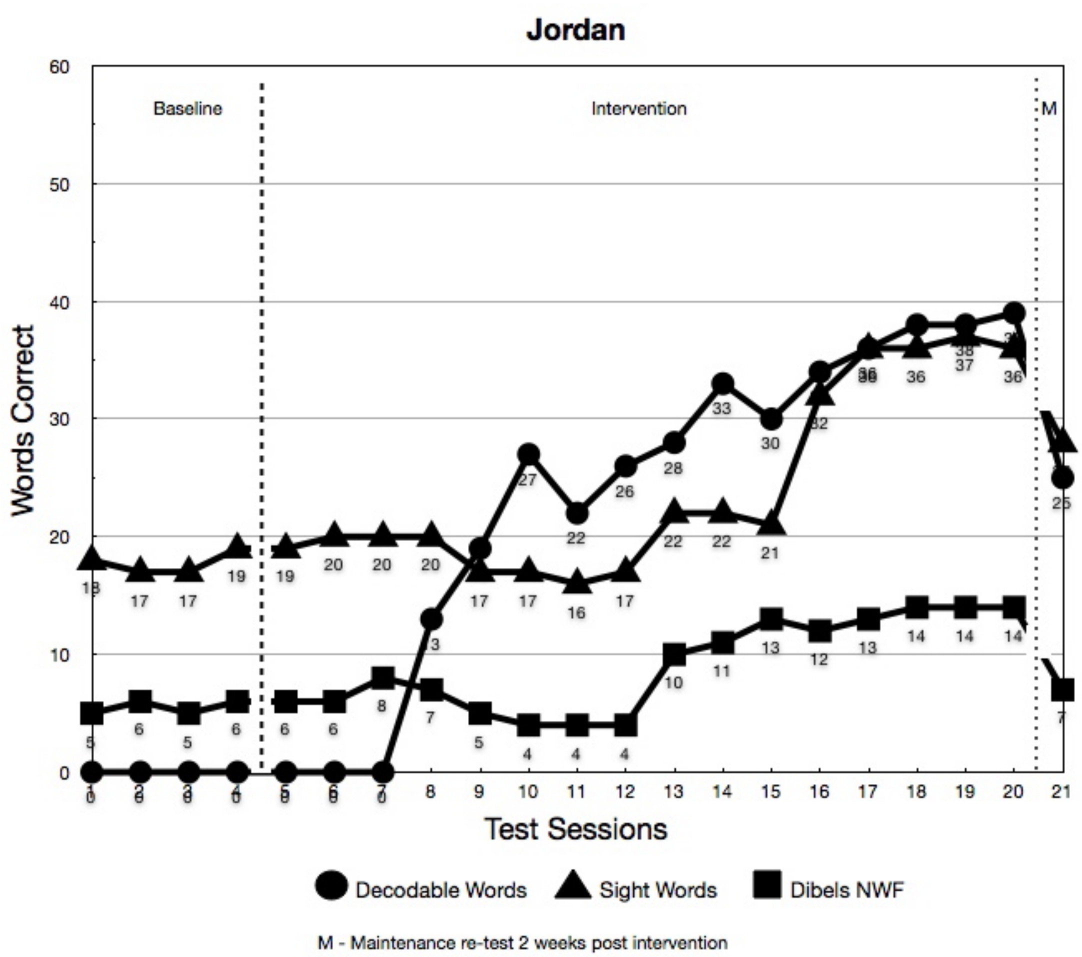
Jordan: Jordan was one of the first students recommended for the study by the reading specialist. He demonstrated significant deficits in letter sound recall and memory. When I met Jordan he was a sweet young boy who did not mind trying to read words or practice letter sounds, but was quite aware that these tasks were difficult for him. His responses typically were slow and labored and he often smiled apologetically when he did not remember letter sounds from one day to the next. He was aware of what he was supposed to remember. The study took place in the early morning hours and Jordan, in contrast to other students was often tired, yawning, and expressed hunger. The project teachers began to bring snacks especially for him. Jordan was 6.9 years of age at the start of the study. He was also scheduled to undergo testing for special education at the end of the school year. After five and half months participating in his RTI program, Jordan was still testing at Level 11 on the Tier II SIPPS placement assessment. After 10 weeks receiving the VSM intervention, Jordan moved up two SIPPS placement levels.

Jordan still remains at- risk but it can be noted that he moved two levels in 10 weeks during the VSM intervention. It is not completely clear if the VSM intervention is the only reason for the positive change but Jordan made significant increases in decoding words and recognizing sight words during this particular time. More importantly, it is evident from the graph below that Jordan showed immediate changes in his decoding once the intervention began (See Figure 13).

The decodable words pre-test score for Jordan showed that he was unable to decode any of the SIPPS CVC words. Jordan continued to achieve a score of 0 across the baseline phase (See Figure 13). After 2 sessions of the VSM intervention, Jordan decoded 14 CVC words. His post-test score for decoding was 39, which was more than double his original score. He improved similarly in sight word recognition. His NWF pre-test score was 6 and his post-test score was 14. The NWF assessment represents a generalization and transfer of decoding skills. During the intervention phase, Jordan demonstrated that he was able to transfer his skills of decoding familiar words to nonsense words. However, during a two-week follow up maintenance check, Jordan’s scores dropped and he showed the lowest maintenance scores of all 10 students. Jordan was considered a success story because he struggled so much in the beginning and then made fantastic leaps as the video watching began. He noticed how well he was doing and he began to enjoy being tested with the cards. He always wanted to know when he was going to make another video.

Social validity: Jordan reported via video recording that he enjoyed watching himself on video. He especially liked showing the video at home to his family. He said that his family invited relatives and friends to come watch him do his reading on the video. Teachers reported a noticeable change in his skills.

Figure 13.

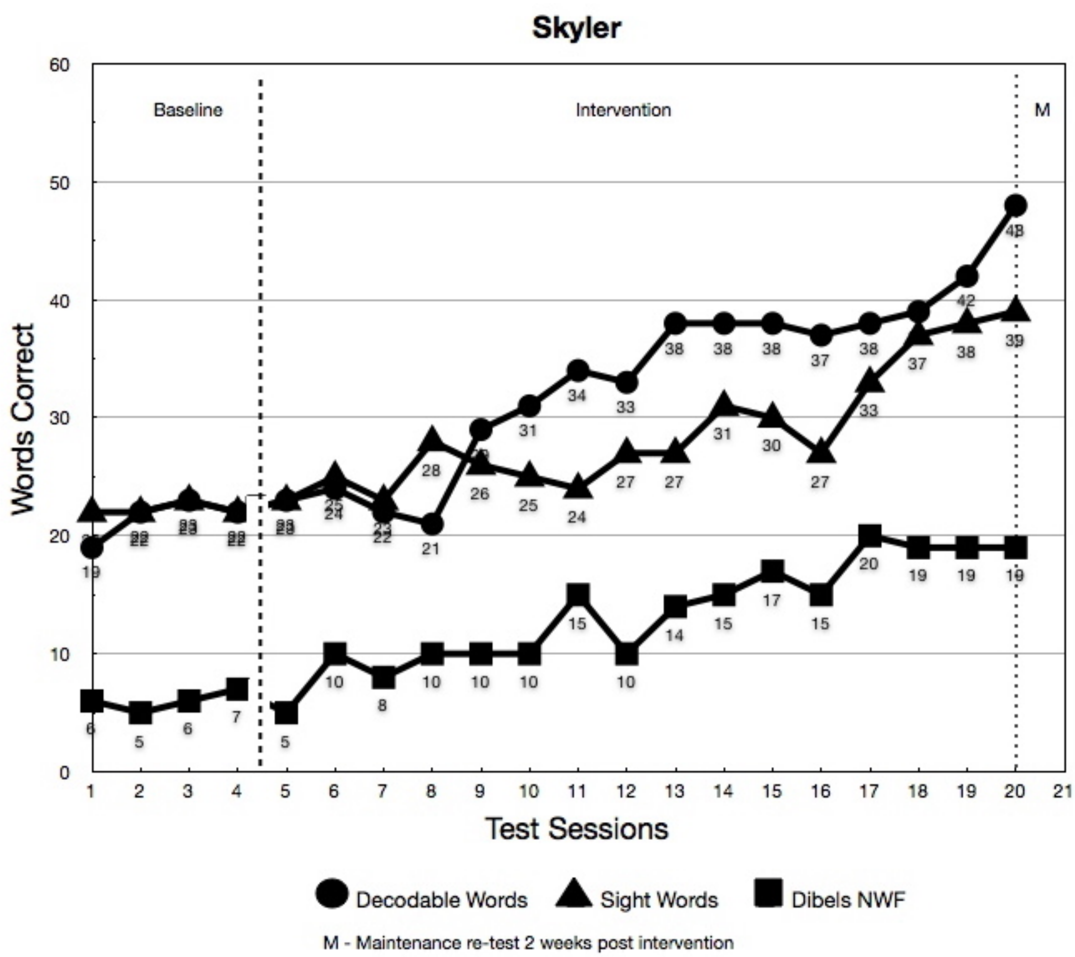


Skyler. Skyler was a young boy age 6.5 at the start of the study. He was the second student recommended for the VSM intervention. Skyler can be described as a serious, happy boy who really wanted to do well in school. He was self-motivated and somewhat competitive. He welcomed testing and would often point out when he thought he was doing well. He wanted to be a good reader. After five and half months participating in his Tier II program, Skyler was still testing with a Tier II SIPPS placement result at Level 11. After 10 weeks receiving the VSM intervention, Skyler moved up three SIPPS placement levels. This is the greatest gain in SIPPS assessment scores for all ten students. This result could assist Skyler with graduating from the Tier II intervention.

Skyler made significant increases in decoding words and NWF during the period of VSM intevention. It is evident from the graph below that Skyler showed immediate and level changes in his decoding within three sessions of VSM (See Figure 14). Skyler improved his sight word recognition steadily up until the 17^{h} session where he began decline slightly and level off. However, as his sight words declined slightly, his decoding improved and his NWF scores began to increase. It is possible that Skyler was trying to decode sight words, as he developed decoding confidence. Up until that point, his greatest gains were in decoding. Skyler was unable to be re-assessed with a two-week follow up maintenance check, due to moving away. Skyler did very well with the VSM intervention. He maintained steady improvements across all three areas. There was very little variability in his scores with two visible changes in level in decoding and NWF.

Social validity: Skyler reported via video recording that he enjoyed making reading videos. He was the first to ask each day about making new videos. When asked if he thought the videos helped to read, he replied that he felt they did. His teacher said he liked to watch his videos in the classroom during down time. Teachers reported a noticeable stabilization of his previous reading inconsistency.

Figure 14.

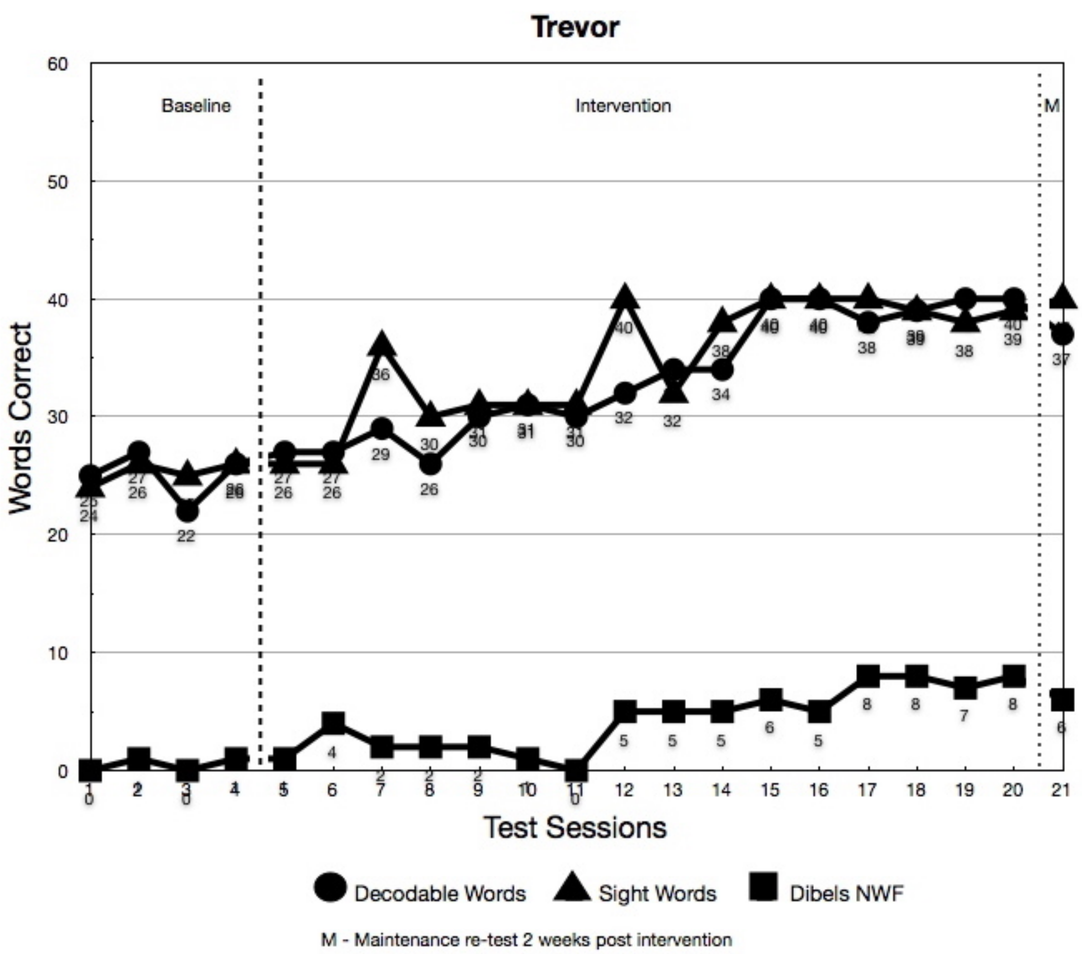


***Trevor**:* Trevor was the third student recommended for the study by the reading specialist. He demonstrated significant early reading deficits. Trevor was 6.9 years of age at the start of the study. He was also scheduled to undergo testing for special education at the end of the school year. Trevor was quiet and shy. Most of the time his responses were inaudible. He displayed a response behavior of repeating his answers several times. Trevor liked watching himself on video and would watch until someone called him away. Observation of Trevor watching videos showed him practicing his words and strategies out loud along with himself. After five and half months participating in his Tier II intervention, Trevor was still testing with a placement result at Level 11. After 10 weeks receiving the VSM intervention, Trevor moved up two SIPPS placement levels.

During the intervention phase, Trevor slowly demonstrated that he was able to transfer his skills of decoding familiar words to nonsense words. A two-week follow up maintenance check showed little change in Trevor's decoding with a score of 37, a sight word score of 40, and a NWF score of 6 (See Figure 15). Trevor did very well with the VSM intervention. He was one of the students most attentive to his videos and interested in imitating his own actions. He also showed interest in watching other student's videos.

Social validity: Trevor reported via video recording that he enjoyed watching himself on video. He enjoyed when other students and adults would see his video. Other students were interested in making more and more videos. Trevor was always content with the videos he had and would watch them repeatedly. When asked if he was able to show them at home, he said that his family could not watch them; they could not play it. I took this to mean that they did not have a DVD player or a computer and told him that his mom could watch them at school sometime. The resource specialist said that she noticed a difference in Trevor's reading participation. He was more vocal and seemed to have a change in self-esteem regarding reading activities. In the beginning of the study, Trevor was timid and quiet. At the end of the study, Trevor was just another kid racing to the room with others, early in the morning to watch his videos. He chatted independently with others and often asked me if I was going to put his videos on the computers in his classroom. When asked if he thought VSM helped him with his sounds and reading, he said yes but was too shy to elaborate unless prompted.

Figure 15.

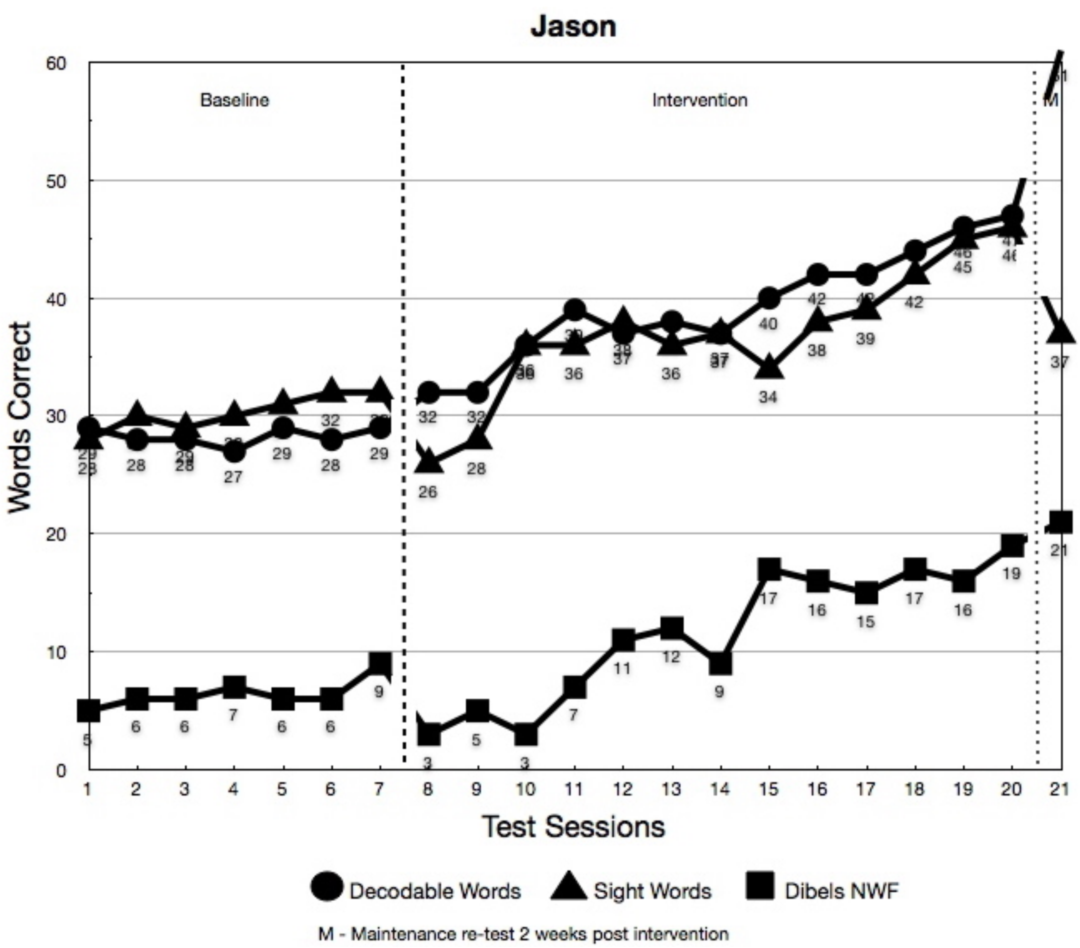


Jason: Jason was the fourth student recommended for the study by the reading specialist and resource specialist due to specific reading deficits. When I met Jason he was a friendly, happy young boy who was very interested in this project. He liked the idea of making videos of himself reading. Jason was 6.9 years of age at the start of the study. His teacher mentioned that when Jason did not recognize a word while reading, he would make up a nonsense word as a replacement. This became evident during the study. He wanted to be a good reader and was not really affected by his reading deficits. He seemed to have good self-esteem about learning. However, he paid great attention to his testing cards, watching for correct and incorrect piles. After five and half months participating in his Tier II intervention program, Jason tested with a placement result of Level 21. After 10 weeks of receiving the VSM intervention, Jason moved up two SIPPS placement levels. Jason was a good candidate for the VSM intervention because he was motivated by the technology of the process and he wanted to be a good reader. He often asked to make more videos. In just ten weeks Jason was able to improve three reading levels as measured by Fountas and Pinnell, which is a significant growth change. In the graph below you will see that Jason was able to decode his highest number of words during his two week maintenance follow up indicating a nice generalization of skills (See Figure 16).

Jason's sight words recognition score went from 28 to 46. However, his maintenance score for sight words was 37, which indicates a slight loss of retention although remains higher than his baseline score. His NWF fluency pre-test score was 5 and his post-test score was 19, which indicates a nice generalization of decoding skills. Jason's data displays three nice level changes across all three categories. His trend lines tend to stair step nicely in a progressive fashion and there is little variability in his scores. His most immediate change is within two sessions of watching videos and his sight word recognition score goes from 28 to 36 (See Figure 16).

Social validity: Jason reported via video recording that he enjoyed watching himself on video. He enjoyed sharing videos with other students and would occasionally watch another student's video with that other student. Jason took videos home and reported back that he watched them with his family. He said they were proud of him and this made him happy. Jason wanted videos to come out perfect and would ask to re-do decoding of words if he thought he didn't say a sound perfectly. Teachers reported observing a change in reading ability and reading self-esteem.

Figure 16.

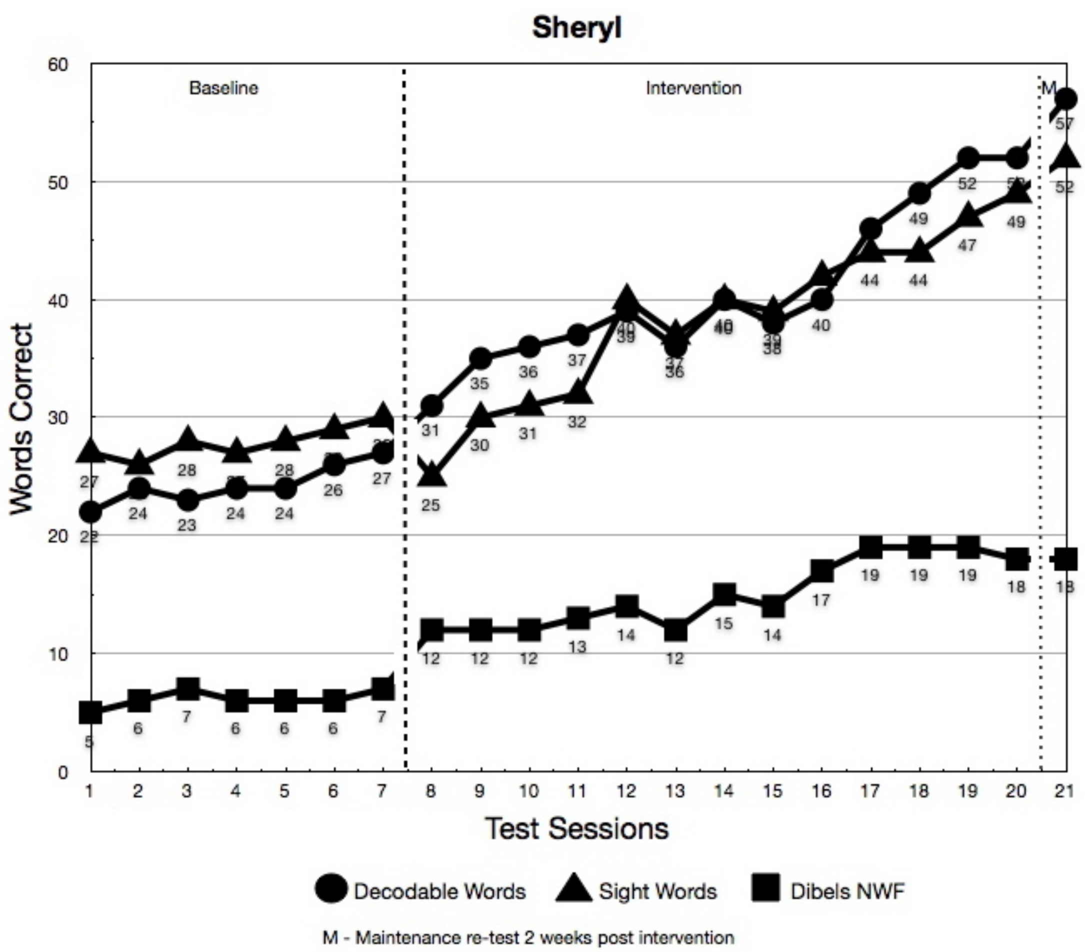


Sheryl. Sheryl was the fifth student recommended for the study by the reading specialist. She demonstrated significant deficits in letter sound recall and memory. When I met Sheryl she was a sweet young girl who enjoyed reading and doing a good job for teachers. She was a very polite student and respectful of rules and expectations. She was 6.5 years of age at the start of the study. She was a shy reading participant because she was aware that she did not know all of her sounds and letters and did not want to give wrong answers. By the end of the study, her scores on the BPST brought her within average range for first grade. After five and half months participating in her Tier II intervention program, Sheryl was still testing with a placement result of Level 21. After 10 weeks of receiving the VSM intervention, Sheryl moved up two SIPPS placement levels. Sheryl is a second language learner although she speaks English very well. Her language ability seems to contribute to her shyness in reading. It is suspected that the video model aided her in feeling more confident about her reading abilities.

The decodable words pre-test score for Sheryl was 22. Within one session of VSM she showed immediate increases in decoding by 4 data points. Her NWF fluency post-test score indicates a nice generalization of decoding skills. Sheryl's maintenance score for NWF shows retention. Sheryl's data displays three nice level changes across all three categories. Her trend lines tend to incline nicely in a progressive fashion with very little variability (See Figure 17).

Social validity: Sheryl's reading teacher mentioned seeing more confidence in her participation of her Tier II sessions. She enjoyed making videos and quickly caught on to the process. Sheryl, via video recording, said that watching herself helped her to learn her sounds. She said she remembered more words when she watched herself reading them. She said she liked watching the other students read words as well, during the video recording process. She also said her family enjoyed watching her videos at home.

Figure 17.



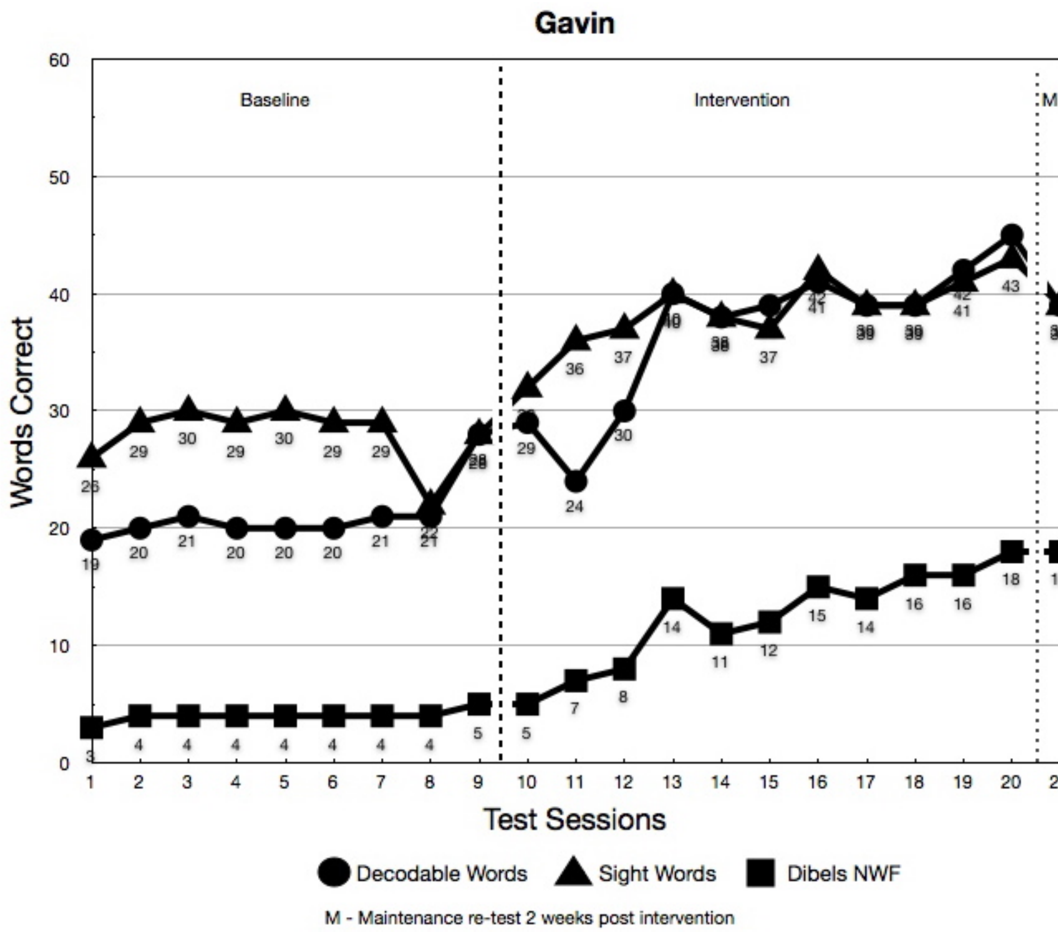
Drew. The resource specialist due to specific reading deficits recommended Drew for the study. Drew was a happy, friendly boy who liked being tested and seemed to enjoy school. He liked the idea of making videos of himself reading. Drew was 6.9 years of age at the start of the study. He appeared to be self conscious about his reading skills. He would become upset if he realized he missed a word. He constantly looked to see which pile the word cards went into. Several piles of words had to be used so that he could not figure out which pile was the incorrect word pile. We often considered using word lists rather than words cards but we wanted to mirror the delivery of the original Tier II intervention program SIPPS. He seemed to have difficulty with self-esteem about learning. He cried a few times when he wasn't making videos on days when other students were making videos. Drew did not begin the study with lowest pre-test scores however, after the VSM intervention he moved up one SIPPS placement level. Drew was a good candidate for the VSM intervention because he was motivated by the video making process and he wanted to be a good reader. He often asked to make more videos. In just ten weeks Drew was able to improve four reading levels as measured by Fountas and Pinnell (See Table 4).

The decodable words pre-test score for Drew was 32. Within one session of VSM Drew increased decoding by 3 data points. Prior to the VSM intervention Drew's sight word recognition was actually declining with a downward trend during the baseline phase. After three sessions of VSM Drew improved his sight word recognition by 15 data points which gave him a drastic change in levels. His maintenance score for sight words indicated good retention. After spring break he showed a slight declining trend line for

NWF fluency that he quickly leveled back to a progressive trend line (See Figure 18). His post-test score indicated that he was able to generalize his decoding skills. His two-week post assessment indicated stability and possible growth.

Social validity: Drew reported via recording that he enjoyed watching himself on video. He enjoyed sharing his videos with other students. Drew took videos home and reported watching them with his family. Teachers reported observing a positive change in his reading ability. Most of the students expressed disappointment when the study was over and they would not be making any more videos. Drew was especially disappointed.

Figure 18.

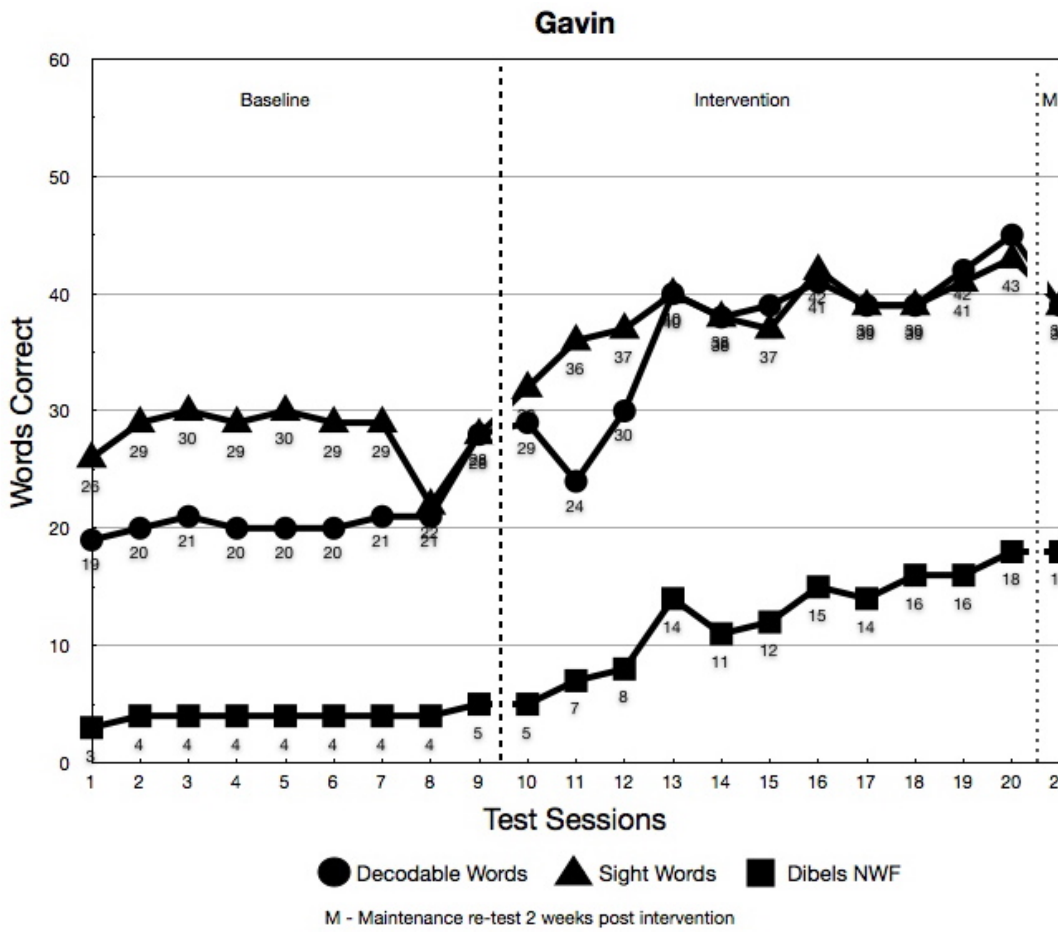


Gavin: Gavin was the last student invited into the study. He was receiving special education services for a speech and language disorder, and was being considered for further assessment to determine if he was eligible for services as a student with a learning disability. When I met Gavin he was a polite and friendly child. He liked the idea of making videos of himself reading. He also wanted the opportunity to improve his reading skills. Gavin was 7.9 years of age at the start of the study. He was older than his peers because he had been retained in the first grade. He appeared to be self conscious about his reading skills because he had been retained. Gavin seemed determined to learn the skills being taught. After five and half months participating in his Tier II intervention program during the second year in first grade, Gavin tested at a placement result of Level 21. After 10 weeks of receiving the VSM intervention, Gavin moved up two SIPPS placement levels (See Figure 19).

The decodable words pre-test score for Gavin was 19. His post-test decoding score was 45, which more than doubled his original score. After his first session of the VSM intervention, he showed a drop in decoding, however, during this time he showed an increase is sight word recognition. Within the second session of VSM, he began to recover his decoding and showed a steady progressive trend along with an increase in NWF. Gavin had three significant level changes throughout his intervention phase His NWF fluency post-test score indicated good generalization of decoding skills. His two-week post-test NWF score showed stable maintenance (See Figure 19).

Social validity: Gavin reported via video recording that he enjoyed making and watching himself on video. Gavin took videos home and reported watching them with his family. Gavin's teacher expressed particular interest in how the VSM might work for him since she felt she had observed particular behaviors related to learning self-esteem. Teachers reported observing a positive change in reading and learning behavior.

Figure 19.

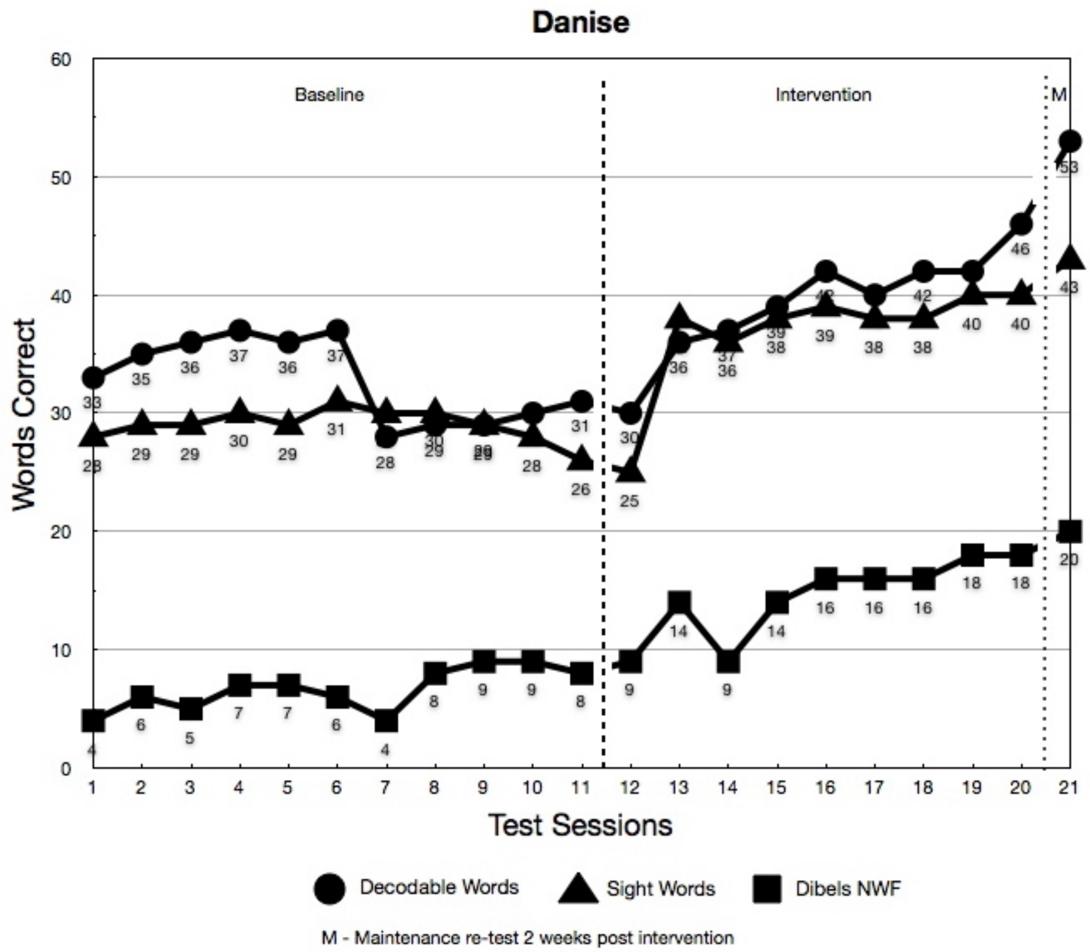


Danise: Danise was another of the students recommended for the study by the reading specialist. She demonstrated significant deficits and slow progress in reading. Danise was outgoing and energetic. Her responses were typically loud and demonstrative when reading. Danise paid a lot of attention to what other student's were reading and achieving. She was also very aware of her own of correct and incorrect answers. She was motivated to do well in this study. She was aware that she had been chosen for a special project and appeared to be very exited about it. Danise still remains at risk but it can be noted that she moved 3 Fountas and Pinnell reading levels in 10 weeks during the VSM intervention. It is not completely clear if the VSM intervention is the only reason for the positive change but Danise made significant increases in decoding words and recognizing sight words during this particular time. More importantly, it is evident from the graph below that Danise showed changes in her decoding once the intervention began (See Table 8). After five and half months participating in her Tier II intervention program, Danise was testing with a placement result at Level 21. After receiving the VSM intervention, Danise moved up one SIPPS placement levels (See Figure 20).

Danise showed immediate increases in decoding, sight words and NWF. During a two-week follow up maintenance check, Danise's decoding, sight word recognition, and NWF scores increased. Danise did very well with the VSM intervention. There were very good changes in levels with not much variability, and steady gains. Danise was considered a success story because she was enthusiastic about making and watching the videos. She practiced the words diligently and showed steady gains. She was aware of how well she was doing and was proud to read well. She asked questions and expressed a desire to make movies often.

Social validity: Danise reported via video recording that she enjoyed watching herself on video. She liked showing the video at home and watching it in class. She would often stop project teachers in the yard to ask when her videos for home would be ready. She eventually displayed calmer responding especially during the video recording process. Teachers reported a noticeable change in her skills.

Figure 20.



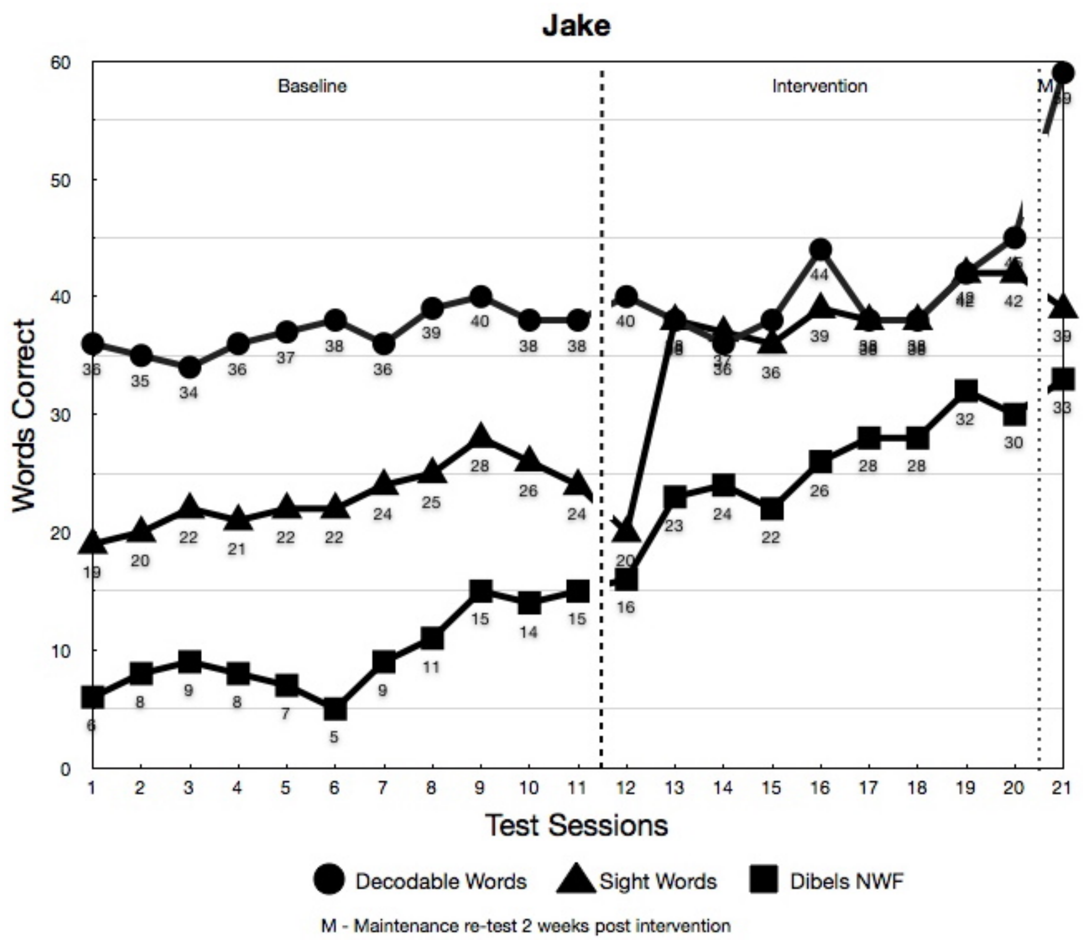
Jake: Jake was one of the students recommended for the study by the reading specialist. He demonstrated significant deficits in letter sound recall and memory. Jake was a happy, young boy who enjoyed reading words and practicing letter sounds. He was unaware that these tasks were difficult for him. His responses typically were quick and confident. He was aware that reading well was expected and required in school. The study took place in the early morning hours and Jake was always bright eyed and energetic.

It can be noted that Jake moved three levels in 10 weeks during the VSM intervention. Jake made significant increases in decoding words and recognizing sight words during this particular time. More importantly, it is evident from the graph below that Jake showed changes in his decoding once the intervention began (See Table 13).

Jake did very well with the VSM intervention. There were very good changes in levels with not much variability. Jake was considered a success story because although he began the study with basic decoding skills, he could not generalize these skills as evidenced by his original NWF scores. As the video watching began, ability to decode nonsense words improved. He noticed how well he was doing and he began to enjoy being tested with the cards. He always wanted to know when he was going to make another video (See Figure 21).

Social validity: Jake reported via video recording that he enjoyed watching himself on video. He also liked showing the video at home to his family. Teachers reported an improvement in reading, attention and willingness.

Figure 21.



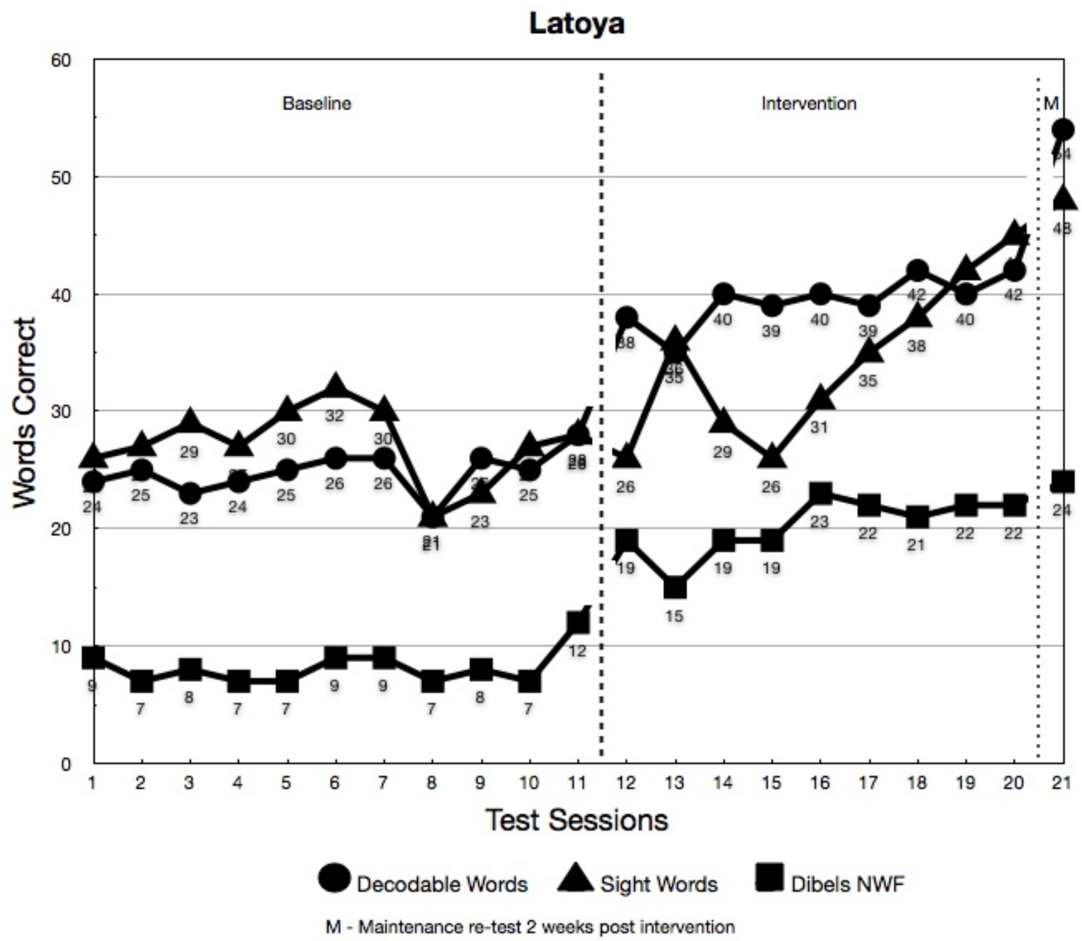
Latoya: Latoya was one of the final students recommended for the study by the reading specialist. She demonstrated significant and slow progress in reading. Latoya was a timid and extremely quiet girl, who hardly spoke except to read words or practice letter sounds. Her responses typically were slow and she appeared to use a great deal of concentration when reading. She was making her very best effort, and was aware that she needed to remember what she had learned. After five and half months participating in her

Tier II intervention program, Latoya was testing with a placement result at Level 21. After receiving the VSM intervention, Latoya moved up two SIPPS placement levels.

Latoya made significant increases in decoding words and recognizing sight words during this particular time. More importantly, it is evident from the graph below that Latoya showed changes in her decoding once the intervention began (See Figure 22). Latoya did very well with the VSM intervention. A maintenance score of 54 in decoding is more than double her pre test score of 24. There were very good changes in levels. Latoya was considered a success story because she was engaged in making and watching the videos. She practiced the words exactly as she was instructed and showed steady gains. She was aware of how well she was doing and was motivated to improve. She did not ask questions or speak much, but always paid close attention to her videos and made a good effort to improve her skills.

Social validity: Latoya reported via video recording that she enjoyed watching herself on video. She liked showing the video at home to her older sister and mother. Teachers reported a noticeable change in her participation, test behavior and decoding skills.

Figure 22.


Latoya
Baseline
Intervention
M
Words Correct
Test Sessions
Decodable Words
Sight Words
Dibels NWF
M - Maintenance re-test 2 weeks post intervention

Chapter V

Discussion

Video self-modeling is a type of personalized intervention that has shown positive effects across a variety of skills and situations (Dowrick, 1999). This study sought to expand the literature base of VSM and reading improvement by including a dependent variable that had not yet been considered, decoding. Decoding is a foundational skill. Children become fluent readers by first developing strong decoding skills. Decoding requires breaking words into sounds, syllables and letter combinations. It is translating the printed word into the spoken word and is heavily dependent on good instruction (O'Connor, 2007). RTI programs are designed to provide good reading instruction based upon the principles of direct instruction, targeted to specific deficits with continuous progress monitoring. However, some students who receive Tier II intervention in an RTI model continue to struggle with decoding.

This study found positive effects for VSM to improve decoding skills and sight word recognition of children at risk for disabilities. All ten students improved their pre-test scores and most of them maintained or improved their highest score after two weeks post intervention. But beyond the numbers of words and letter sounds these students were able to produce were other important effects. Children struggling to become good readers were demonstrating a sense of confidence in themselves and their reading ability. Shy students, who would previously not speak up, were imitating their videos and showing them to one another with natural behavior and a face of pride. Excited children were bounding through the door to come make or watch their reading videos. Struggling readers were stopping the project teachers on the playground to ask about making new reading videos. VSM has an apparent side effect. It creates engaged learners.

When considering some individual students, for example, Jordan, who did not maintain his highest scores post intervention, two things come to mind. First, he was a perfect candidate for showing how VSM can affect memory. Jordan demonstrated memory problems but during the study, the video became his memory partner. When prompted to “do it like in the video,” he could demonstrate recall. When the study was over and the video was gone, so was some of his recall. This begs the question, should he have a video or a computer all the time as an assistive tool for learning? We don’t know. Perhaps a study longer than ten weeks would determine if more time with videos would increase his recall of the target words and procedures permanently. Nevertheless, Jordan developed confidence in decoding. His videos looked like the other videos. He was not a student who didn’t know sounds or letters when the teacher asked the class to say them. He was a boy who produced letter sounds and read words exactly as his peers did. When his mother came to school for open house, he grabbed and pulled her to see the video lady.

The multiple baseline design enabled a clear picture of how scores improved in relation to the timing of the VSM implementation. However, prior to actually watching their own videos, students were still being tested with the CBM word cards. They were also recording their videos in preparation of watching them. Both of these activities are part of the VSM experience but force consideration as to the exact reason for improved reading performance. The question arises as to whether the self-modeled video is the main reason for the improved reading scores or if improved scores should be attributed to the repeated reading and memorization from the practice and testing. Here are some things to consider:

1) Repetition and memorization occur as part of the process of making and watching videos and are not independent of the VSM intervention.

2) Students had been receiving Tier II intervention for five months that involved repetition and sight word memorization, yet had shown a very slow rate of learning. Scores improved significantly after ten weeks of the VSM intervention. For several students across different categories there was an immediate effect showing results within one or two sessions of video viewing. Some possible reasons for the previous slow rate of reading improvement during intervention without video self-modeling may include that students were inattentive during intervention. It may also be that the model is a teacher, older, perhaps a different ethnicity or gender, and is not the “self.” For some of the students there appeared to be a bit of performance pressure when working in small groups. Finally, students have received these lessons many times in the same way, doing the “same old thing.”

Based on this current study, it seems that this is where VSM is able to step in and offer a unique contribution to learners with these particular deficits. Video self-modeling provides an individualized, multi-faceted approach for improving decoding skills for the struggling reader. The process of making the videos involves observation, following directions, repeated practice, letter sound recognition, sound sequencing and blending, and memorization. It can improve a student's motivation to learn the skills necessary to create the videos. Watching the videos can help a student understand and see exactly what and how they are learning. It can also help a student see that they can improve their skills through practice.

When students are struggling with decoding individual sounds to make words, they are unable to see the bigger picture. When they watch a video, they can focus less on individual sounds and can see and understand the process of decoding words. Video viewing creates an imprinted memory through visualization, auditory memory, and sequence. When two or more students make videos during the same session, each watches the other make a video. As one student watches the other filming, they are receiving repeated lessons of the skill they are learning, much like pre-teaching or re-teaching.

During the intervention, the students seemed to enjoy watching one another's videos although not with the same enthusiasm as when watching their own video. There are studies that have investigated self-modeling versus peer modeling (Sherer, et al, 2001). In this case, the self-modeling was much more effective because they were distinctly drawn to watching themselves on screen. Each research teacher noted the attention and focus. It has been observed that watching themselves demonstrate a skill that is difficult for them is much more intriguing to the student than watching someone, with little or even some resemblance to them, perform the same skill with ease. Additionally, the transfer of the VSM reading skills to the daily Tier II lessons was easier because they had already seen themselves doing the required tasks successfully. Showing videos to family, teachers, and peers can improve a student's self-esteem and help everyone see the student as a reader. The students were very motivated to make good videos. They understood the end product was a movie of them being successful and so they work hard to create that product. The students were not intimidated because all of the movies looked the same.

Conclusion

The results of this study are promising because not only do we add to the body of literature on the effective use of video as an assistive academic tool for learning, we demonstrate a willingness to be progressive educators in a modern, technology driven world. We dare to keep up with the science behind education in order to stay ahead of our students or travel alongside them in the learning process. We choose to attempt to unfold the layers wrapping the future and embrace new tools that may better assist some or all students. Decoding is an auditory and visual experience. Some students seem to struggle with one or the other, perhaps weakening both. The use of video to support such a learner is a natural fit. It takes the flat printed letters and brings them to life in a way that can engage the senses and the self. But the use of VSM does more. It allows students to play an active role in what and how they are learning. It helps keep them accountable. It can play a role in improving reading self-efficacy. It gives them something tangible to feel proud of which is crucial to the motivation of students at risk.

VSM is a reasonable tool for use in schools, as an intervention or as a support for existing interventions. Video cameras are simple to use and they are not as expensive as they used to be. Many are in phones or small pocket digital cameras. Everyday people are familiar with using video due to the popularity of media-based websites such as Youtube, which maintains an average of two million viewers per day. Most computers come with basic video editing software. Videos can be made and edited quickly. They can be emailed home, put on an ipod or other handheld device, shared on the school server, burned to a CD or DVD, or watched on any computer or TV in the classroom or home setting.

What I expected to find, as the result of this study was an increase in the number of words decoded correctly and the number of sight words recognized for the participants. The use of self-modeled videos had the potential to assist these students in seeing how they learn and also that they can be good readers. The visualization certainly could assist memorization. The storyboard preparation would assist practicing and re-reading. The viewing of the video outside of classroom time would increase reading practice opportunities. Sharing the video with adults such as teachers, parents and caregivers could increase positive feedback to the student, which could affect self-efficacy in a positive way. What I found is that for all of the students, much of the expectations were fulfilled.

The notion that video self-modeling can be a tool to support tiered instruction may grow quickly in classrooms. As teachers learn the simplicity of creating a video, or perhaps engaging older students to assist younger students in creating videos (modern peer tutors / reading buddies), the use of video self-modeling support may increase.

Although I have discussed the use of a hand-held video camera there is an even quicker technique of developing a video if the classroom computer has a built-in camera like most MAC computers. A student can simply read into the computer and the built in camera will record the video right into the editing program. If a teacher tapes a reading passage or set of words to the computer screen, the video shows the student reading directly into the camera. Once a student learns to click open a video editing program such as iMovie or Moviemaker, it will simply be a matter of clicking the record button. If a teacher sees the value of using self-modeled videos as RTI support, students can easily learn to record themselves reading for a teacher to later edit. Some students may benefit from positive self-review self-modeled videos that reduce the need for a teacher or tutor to facilitate the recording process. Other cases that can utilize self-recorded videos include students working on reading fluency and those who are not recording newly learned skills. Increasing support to Tier II instruction may benefit teachers, struggling students, and RTI programs overall.

Limitations

Single subject designs by nature have certain limitations. In the case of this study, lack of generalization to a larger population should be considered even though ten replications makes a reasonably strong case in multiple baseline design studies. Another limitation was the small amount of time. The baseline and intervention phase of this study lasted only ten weeks. A longer period of time would have made a stronger case for seeing the effect VSM had on memory and recall. Although I had a wonderful team of people working on VSM viewing and testing, I was the only person available for video editing. The number of videos required for ten students rotating through several over ten weeks was challenging to keep up with. I would suggest each project person managing the video editing of only three students. This was a small limitation and a fixable one. One last limitation of this study was that I only had control over the VSM portion of teaching decoding to these students. The Tier II intervention that I was partnering with was under someone else's direction and control. Although I maintained direct relationships with the reading specialists and I tried to mirror the decoding activities of the SIPPS program, I was still a separate entity.

Future Research Directions

I believe it is important to continue to investigate the use of VSM in the academic domain of reading. Replicating a study on the effectiveness of VSM and decoding would be a good start. Continuing studies on the use of VSM to improve fluency and comprehension would also add to the growing body of literature in those areas. Other questions for consideration may include determining whom VSM is best for or if VSM would be effective in improving reading skills of second language learners or students with moderate cognitive disabilities. It might also be of interest to look at the individual components of creating self-modeled videos in terms of which are most effective or in what way they are most effective. There are no particular standards or rules controlling setting, lighting, materials, environment, using tutors in the video, audio, graphics or text.

One last idea would be to consider if VSM would be effective with the same group of participants a second time around with the next collection of new sounds and sight words.

References

Adams, M.J. (1990). *Beginning to read: Thinking and learning about print.* Cambridge, MA: MIT Press.

Adelman, H. S., & Taylor, L. (1998a). Mental health in schools: Moving forward. *School Psychology Review, 27,* 175-190.

Alcantara, P. R. (1994). Effects of videotape instructional package on purchasing skills of children with autism. *Exceptional Children,* 61*,* 40-55.

Apple, A. L., Billingsley, F., & Schwartz, I. S. (2005). Effects of video modeling alone and with self-management on compliment-giving behaviors of children with high-functioning ASD. *Journal of Positive Behavior Interventions,* 7(1), 33-46.

Bandura, A., Ross, D., & Ross, S. A., (1961). Transmission of aggression through imitation of aggressive models. *Journal of Abnormal and Social Psychology, 63*, 575-582.Bandura, A. (1969). Principles of behavior modification. New York: Holt, Rinehart & Winston.

Bandura, A. (1989). Social cognitive theory. In R. Vasta (Ed.), *Annals of Child Development, 6*. Six theories of child development (pp. 1-60). Greenwich, CT: JAI Press.

Bandura, A., (1997), *Self-efficacy: The exercise of control*, New York: Freeman, pp. 604

Beck, I. & Hamilton, R. (2000). *Beginning reading module*. Washington, DC: American Federation of Teachers.

Becker, H. J. (2000). Who's Wired and Who's Not. *The Future of Children*. Center for the Future of Children, The David and Lucille Packard Foundation. 10:2

Bellini, S. & Akullian, J. (2007). A meta-analysis of video modeling and video self-modeling interventions for children and adolescents with autism spectrum disorders. [Online version]. *Council for Exceptional Children,* 73*,* 264-287.

Bellini, S., Akullian, J., & Hopf, A. (2007). Increasing social engagement in young children with autism spectrum disorders using video self-modeling. [Online version]. *School Psychology Review,* 36, 80-90.

Berkeley, S., Bender, W. N., Peaster, L. G., & Saunders, L. (2009). Implementation of Response to Intervention: A Snapshot of Progress. *Journal of Learning Disabilities*, January/February 2009; 42: 85 - 95.

Bradley, L., & Bryant, P. (1985). *Rhyme and reason in reading and spelling.* International Academy for Research in Learning Disabilities Monograph Series, No. 1. Ann Arbor, University of Michigan Press.

Bray, M.A., & Kehle, T.J. (2001). Long-term effects of self-modeling as an intervention for stuttering. *School Psychology Review*, 30, 131-137.

Buggey, T. (2005). Video self-modeling applications with children with autism spectrum disorder in a small private school. *Focus on Autism and Other Developmental Disabilities,* 20(1*),* 52-63.

Burns, M. S., Griffin, P., & Snow, C. E. (1999). *Starting out right: a guide to promoting children's reading success.* Washington, DC: National Academy Press.

Committee on the Prevention of Reading Difficulties in Young Children.

Bulgren, J. A., & Carta, J. J. (1993). Examining the instructional contexts of students with learning disabilities. *Exceptional Children,* 59, 182- 191.

CDC (2006, 2009). Center for Disease Control, Atlanta, GA

Chall, J. (1992). The new reading debates: evidence from science, art, and ideology. *Teachers College Record,* 94, (2), 315.

Chall, J. S. (1996). *Stages of reading development*. Orlando, FL: Harcourt, Brace.

Christle, C.A., Jolivette, K., & Michael, N.C. (2007). School Characteristics Related to High School Dropout Rates. *Remedial and Special Education*, Vol. 28.

Clare, S. K., Jenson, W. R., Kehle, T. J., & Bray, M. A. (2000). Self-modeling as a treatment for increasing on-task behavior. *Psychology in the Schools,* 37, 517-522.

Council for Exceptional Children, 2007

Deno, S. L. (1992). The nature and development of curriculum-based measurement. *Preventing School Failure*, 36 (2), 5-10.

Deno, S. (2003). Developments in curriculum-based measurement. *The Journal of Special Education,* 37, 184-192.

Dockstader, J. (1999). Teachers of the 21st century know the what, why, and how of technology integration. *T.H.E. Journal*, 26, (6), 73-74.

Donovan, M. S., & Cross, C. T. (2002). *Minority students in special education and gifted education.* Washington, DC: National Academy Press.

Dowrick, P. W., & Raeburn, J. M. (1977). Video editing and medication to produce a therapeutic self model. *Journal of Consulting and Clinical Psychology,* 45, 1156-1158.

Dowrick, P. W., & Ward K. M. (1997). Video feedforward in the support of a man with intellectual disability and inappropriate sexual behavior. *Journal of Intellectual and Developmental Disability,* 22, 147- 160.

Dowrick, P. W., & Hood, M. (1981). Comparison of self-modeling and small cash incentives in a sheltered workshop. *Journal of Applied Psychology,* 66, 394-397.

Dowrick, P. W. (1983). *Self-modelling*. In P. W. Dowrick & S. J. Biggs (Eds.), Using video: Psychological and social applications (pp. 105-124). Chichester, UK: Wiley.

Dowrick, P. W. (1999). A review of self modeling and related interventions. *Applied and Preventive Psychology,* 8, 23-39.

Dowrick P.W. (2006). Wherefore art the self in the model? *Intellectual Disability Australasia, 27*(2), 3-6.

Dowrick, P. W., Kim-Rupnow, W. S., & Power, T. J. (2006). Video feedforward for reading. *The Journal of Special Education,* 39, 194-207.

Duhaney, L.M.G., Duhaney, D. C. (2000). Assistive Technology: Meeting the Needs of Learners with Disabilities. *International Journal of Instructional Media, Vol. 27.*

Edl, H. M. (2007) Examining the impact of video self modeling on the reading fluency of upper elementary and middle school students with significant reading disabilities. *Department of counseling and educational psychology, Indiana University.*

Edyburn, D. L. (2001). *Critical issues in special education technology research: What do* *we know? What do we need to know?* In M. Mastropieri & T. Scruggs (Eds.), Advances in Learning and Behavioral Disabilities (Vol. 15, pp. 95-118). New York: JAI Press.

Edyburn, D.L. (2002). Remediation vs. compensation: A critical decision point in assistive technology consideration. Retrieved from:http://wconnsensebulletin.com/edyburnv4n3.html.

Edyburn, D.L. (2003). Reading difficulties in the general education classroom: A taxonomy of text modification strategies. *Closing the Gap*, 21(6)

Edyburn, D. L. (2005). Assistive technology for students with mild disabilities: From consideration to outcome measurement. In D. Edyburn, K. Higgins, & R. Boone (Eds.), Handbook of special education technology research and practice (pp. 239-269). Whitefish Bay, WI: Knowledge by Design, Inc.

Edyburn, D., Higgins, K. & Boone, R., (Eds.), (2005). Handbook of special education technology research and practice. Whitefish Bay, WI: Knowledge by Design, Inc.

Edyburn, D.L. (2006c). Evaluating academic performance: With and without technology. *MACUL Journal*, 26(4), 26-27, 48.

Edyburn, D.L. (2006). Searching for evidence of the effectiveness of assistive or instructional technology interventions. *Journal of Special Education Technology*, 21(2), 74-78

Finn, J.D. & Rock, D.A. (1997). Academic success among students at risk for school failure. *Journal of Applied Psychology*, 82, 221-234.

Foorman, B. R., Francis, D. J., Winikates, D., Mehta, P., Schatschneier, C., & Fletcher, J. M. (1997) Early interventions for children with reading disabilities. *Scientific*

Studies of Reading, 1, 255-276

Forcier, 1999 Forcier, R. C. (1999). *Computer applications in education*. The computer as an educational tool (pp.60-93). Upper Saddle, NJ: Prentice-Hall, Inc.

Fuchs, L. S. (1998). *Computer applications to address implementation difficulties associated with curriculum-based measurement.* In M. R. Shinn (Ed.), Advanced applications of curriculum-based measurement (pp. 89-112). New York: Guilford Press.

Fuchs, L. S., Fuchs, D., Hosp, M. K., & Jenkins, J. R. (2001). Oral reading fluency as an indicator of reading competence: A theoretical, empirical, and historical analysis. *Scientific Studies of Reading,* 3*,* 239-256.

Fuchs, D., & Fuchs, L. S. (2006). Current issues in special education and reading instruction--Introduction to response to intervention: What, why, and how valid is it? *Reading Research Quarterly,* 41(1*),* 92.

Fuchs, L.S., & Fuchs, D. (2007). A model for implementing responsiveness-to-intervention. *Teaching Exceptional Children*, 39(5), 14-20.

Gickling, E. E., & Thompson, V. P. (1985). A personal view of curriculum-based assessment. *Exceptional Children,* 52, 205-218.

Good, R. H., Kaminski, R. A., Shinn, M., Bratten, J., Shinn, M., Laimon, L., Smith, S., & Flindt, N. (2004). *Technical Adequacy and Decision Making Utility of DIBELS* (Technical Report No. 7). Eugene, OR: University of Oregon.

Gottfried, A. E. (1990). Academic intrinsic motivation in young elementary school children. *Journal of Educational Psychology,* 82, 525-538.

Gottfried, A. E., Fleming, J. S., & Gottfried, A. W. (2001). Continuity of academic intrinsic motivation from childhood through late adolescence. *Journal of Educational Psychology,* 93, 3-13.

Graham, S., Weiner, B. (1996). Theories and principles of motivation. In *Handbook of Educational Psychology.* Berliner & Calfee (Eds.). New York, NY: Simon & Schuster Macmillan.

Greenberg, D., Buggey, T., & Bond, C. L. (2002). Video Self-modeling as a tool for improving oral reading fluency and self-confidence. *ERIC Document Reproduction Service No: ED471 091.*

Hart, B., & Risley, T. R. (1995). *Meaningful differences in the everyday experiences of young American children.* Baltimore: Brookes.

Hasselbring, T.S. & Williams Glaser, C. (2000). Use of computer technology to help students with special needs. *The Future of Children,* 10(2), 1-21.

Hitchcock, C. H., & Noonan, M. J. (2000). Computer-assisted instruction of early academic skills. *Topics in Early Childhood Special Education*, 20, 145-158.

Hitchcock, C. H., Dowrick, P. W., & Prater, M. A. (2003). Video self-modeling intervention in school-based settings: A review. *Remedial and Special Education,* 24, 36-45.

Hitchcock, C. H., Prater, M. A., & Dowrick, P. W. (2004). Reading comprehension and fluency: Examining the effects of tutoring and video self-modeling on first-grade students with reading difficulties. *Learning Disability Quarterly,* *27,* 89-103. 44

Horner, R. H., Carr, E. G., Halle, J., McGee, G., Odom, S., & Wolery, M. (2005). The use of single-subject research to identify evidence-based practice in special education. *Exceptional Children, 71*(2), 165–179.

Hunt, P., Soto, G., Maier, J., Doering, K. (2003). Collaborative teaming to support students at risk and students with severe disabilities in general education classrooms. *Exceptional Children*, 69, 315-332.

Jeffs, T., Behrmann, M., & Bannan-Ritland, B. (2006). Assistive Technology and Literacy Learning: Reflections of Parents and Children. *Journal of Special Education Technology*, Vol. 21.

Juel, C. (1988). Leaming to read and write: A longitudinal study of 54 children from first through fourth grades. *Journal of Educational Psychology*, 80, 437-447

Juel, C., & Minden-Cupp, C. (2000). Learning to read words: Linguistic units and instructional strategies. *Reading Research Quarterly,* 35, 458-492.

Kahn, J. S., Kehle, T. J., Jenson, W. R., & Clark, E. (1990). Comparison of cognitive-behavioral, relaxation, and self-modeling interventions for depression among middle-school students. *School Psychology Review,* 19, 196-211.

Kaminski, R. A., & Good, R. H. (1996). Toward a technology for assessing basic early literacy skills. *School Psychology Review,* 25, 215-227.

Lasater, M. W., & Brady, M. P. (1995). Effects of video self-modeling and feedback on task fluency: A home-based intervention. *Education & Treatment of Children,* 18, 389-408.

Sherer, M., Pierce, K. L., Pardes, S., & Kisacky, K., et al. (2001). Enhancing conversation skills in children with autism via video technology. *Behavior Modification*, 25, 140-158.

Mechling, L. C., Gast, D. L., & Langone, J. (2002). Computer-based video instruction to teach persons with moderate intellectual disabilities to read grocery aisle signs and locate items. *The Journal of Special Education,* 35, 224-240.

Mechling, L. C., Pridgen, L. S., & Cronin, B. A. (2005). Computer-based video instruction to teach students with intellectual disabilities to verbally respond to questions and make purchases in fast food restaurants. *Education and Training in Developmental Disabilities,* 40(1*)*, 47-59.

Mindplay (2009). My reading coach. Methods and Solutions, Inc., Tucson, AZ. Found at http//www.Mindplay.com

Murray, C. (2003). Risk factors, protective factors, vulnerability, and resilience: A framework for understanding and supporting the adult transitions of youth with high-incidence disabilities. *Remedial and Special Education*, 24, 16-26.

National Assessment of Educational Progress (NAEP) (2007). *National Center for Educational Statistics*. Found at http://nces.ed.gov/nationsreportcard

National Educational Technology Standards for Students (NETTS): Connecting Curriculum and Technology, (2000). International Society for Technology in Education. Eugene, OR.

National Reading Panel. (2000). *Teaching children to read: An evidence-based assessment of the scientific research literature on reading and its implication for reading instruction* (Reports of the Subgroups). Washington, DC: National

Institute of Child Health and Human Development.

Neo, M., Neo T.K., K. (2002). Building a Constructivist Learning Environment Using a Multimedia Design Project-A Malaysian Experience. *Journal of Educational Multimedia and Hypermedia, Vol.* 11.

Nikopoulos, C. K., & Keenan, M. (2003). Promoting social initiation in children with autism using video modeling. *Behavioral Interventions,* 18, 87108.

Nikopoulos, C. K., & Keenan, M. (2004). Effects of video modeling on social initiations by children with autism. *Journal of Applied Behavior Analysis,* 37, 93-96.

O'Connor, R. E., Jenkins, J. R., & Slocum, T. A. (1995). Transfer among phonological tasks in kindergarten: Essential instructional content. *Journal of Educational Psychology*, 87, 202-217.

O'Connor, R. E., Notari-Syverson, N., & Vadasy, P. (1996). Ladders to literacy: The effects of teacher-led phonological activities for kindergarten children with and without disabilities. *Exceptional Children,* 63, 117-130.

O'Connor, R. E., & Jenkins, J. (1999). Prediction of reading disabilities in kindergarten and first grade. Scientific Studies of Reading, 3, 159-197.

O'Connor, R. E. (2000). Increasing the intensity of intervention in kindergarten and first grade. *Learning Disabilities Research and Practice,* 15, 43-54.

O'Connor, R.E., Harty, K., & Fulmer, D. (2005). Tiers of Intervention in Kindergarten Through Third Grade. *Journal of Learning Disabilities,* 38, 532-538.

O'Connor, R.E. (2007). *Teaching word recognition: Strategies for students with learning difficulties*. Guilford Press.

Pearson, Inc. (2009). *Waterford Early Learning Institute*. New York, NY. Found at http://www.waterfordearlylearning.org

Perfetti, C., Beck, I., Bell, L., & Hughes, C. (1987). Phonemic knowledge and learning to read are reciprocal: A longitudinal study of first grade children. *Merrill-Palmer Quarterly*, 33, 283-319

Perfetti, C.A., Rieben, L., & Fayol, M. (Eds.), (1997). *Learning to spell: Research, theory, and practice across languages*. Mahwah, NJ: Erlbaum.

Piaget, J. (1952). *The origins of intelligence in children*. New York: International Universities Press.

Pintrich, P. R. (2003). Amotivational science perspective on the role of student motivation in learning and teaching contexts. *Journal of Educational Psychology, 95*, 667–686.

Possell, L. E., Kehle, T. J., McLoughlin, C. S., & Bray, M. A. (1999). Self-modeling as an intervention to reduce disruptive classroom behavior. *Cognitive and Behavioral Practice*, 6, 99-105.

Rack, J. P., Snowling, M. J., & Olson, R. K. (1992). The nonword reading deficit in developmental dyslexia: A review. *Reading Research Quarterly*, 27, 29-53

Roblyer, M. D., & Edwards, J. (2000). *Integrating educational technology into teaching* (2nd ed.). Upper Saddle River, NJ: Merrill/Prentice Hall, Inc.

Roblyer, M. D. (2006). *Integrating educational technology into teaching.* (4th ed.). Upper Saddle River, NJ: Pearson Education, Merrill.

Sherer, M., Pierce, K. L., Pardes, S., & Kisacky, K., et al. (2001). Enhancing conversation skills in children with autism via video technology. Behavior Modification, 25, 140-158.

Scholastic, Inc. (2009). *Read 180 and System 44*. New York, NY. Found at http://www.Scholastic.com

Schunk, D. H., & Hanson, A. R. (1989). Self modeling and children's cognitive skill learning. *Journal of Educational Psychology*, 81, 155-163.

Scruggs, T. E., & Mastropieri, M. A. (1998). Summarizing single-subject research: issues and applications. *Behavior Modification*, vol. 22, pp. 221-242.

Sheffelbine, J., (2006) *Systematic Instruction in Phoneme Awareness, Phonics, and Sight Words.* Developmental studies center. Oakland, CA.

Simpson, A., Langone, J., & Ayres, K. M. (2004). Embedded video and computer based instruction to improve social skills for students with autism. *Education and Training in Developmental Disabilities,* 39(3), 240-252.

Skinner, E. A., Wellborn, J. G., & Connell, J. P. (1990). What it takes to do well in school and whether I've got it: A process model of perceived control and children's engagement and achievement in school. *Journal of Educational Psychology*, 82, 22-32.

Stanovich, K. E. (1986). Matthew effect in reading: Some consequences of individual differences in the acquisition of literacy. *Reading Research Quarterly*, 21, 360-406

Stipek, D. (2002). *Motivation to learn: integrating theory and practice* (4th ed.). Boston:

Allyn.

Stipek, D. J., & MacIver, D. (1989). Developmental change in children's assessment of intellectual competence. *Child Development,* 60, 521-538.

Swanson, H. L., & Siegel, L. (2001). Learning disabilities as a working memory deficit. Issues in Education: *Contributions from Educational Psychology*, 7, 1-48.

Swanson, H.L., Harris, K. R., & Graham, S., (2003) *Handbook of learning disabilities.* New York: Guilford Press, pg. 184-185.

Swanson, H. L., Howard, C. B., (2005). Children with Reading Disabilities: Does Dynamic Assessment Help in the Classification? *Learning Disability Quarterly,* Vol. 28

Tangel, D. M., & Blachman, B. A. (1992). Effect of phoneme awareness instruction on kindergarten children's invented spelling. *Journal of Reading Behavior, 24*, 233-258.

Torgesen, J. K., Wagner, R. K., & Rashotte, C. A. (1994). Longitudinal studies of phonological processing and reading. *Journal of Learning Disabilities*, 27, 276-286.

U.S. Department of Education. (2002). *Twenty-fourth annual report to Congress on the implementation of the Individuals with Disabilities Education Act*. Washington, DC: Author. Available online: http://www. ed.gov/about/reports/annual/osep/2002/index.html

Vaughn, S. (2003). How many tiers are needed for response to intervention to achieve acceptable prevention outcomes? Paper presented at the NRCLD symposium, Responsiveness to Intervention, Kansas City, MO. *Retrieved from http:// www.nrcld.org*

Vaughn, S., Linan-Thompson, S., & Hickman, P. (2003). Response to instruction as a means of identifying students with reading/learning disabilities. *Exceptional Children*, 69(4), 391-411.

Vygotsky, L. S. (1978). *Mind in society.* Cambridge, MA: Harvard University Press.

Wagner, R. K., Torgesen, J. K., & Rashotte, C. A. (1999). *Comprehensive Test of Phonological Processes*. Austin, TX: PRO-ED.

Appendices

Appendix 1.

Decodable Word List

fun	mud	fit	lip	net	ant	dim
hot	it	ran	rip	job	am	pep
cut	hat	bug	peg	win	ram	rat
rub	in	big	pen	vat	tan	pin
him	may	pig	hen	rip	fat	van
ant	sit	beg	pal	led	six	wax
am	rat	leg	sip	fun	wig	fed
ram	fan	fin	rag	hot	wag	sad
tan	sat	bed	jog	cut	sip	web
fat	if	ten	sap	rub	sap	box
mad	man	duck	jig	him	den	

Appendix 2.

Sight Word List

I	are	saw	said	your	over
see	no	my	her	very	look
the	he	here	of	were	want
you	she	they	out	could	from
can	get	little	come	one	for
me	can't	put	say	would	find
and	under	what	be	two	again
we	to	do	does	should	many
on	was	like	other	both	people
is	go	have	every	good	
yes	down	home	around	there	

Appendix 3.

Video Viewing Protocol for VSM Intervention

Steps for watching videos

- Direct students to watch their videos. Say, “Go to the computers and get ready to watch your videos.”

- Ask the students to put on headphones.

- Prompt the students to “get ready to watch the video and pay close attention to it.”

- Tell students to watch the video. Say “Double-click on the video with your name on it and press play.”

- When video watching is completed say, “Now close the video.”

- Praise the students. Say, “Good job. Thank you for watching the video attentively.”

Appendix 4.

Video Social Validity Sample Questions for VSM Participants

Did you like making the videos?

What did you like about making the videos?

Did you like seeing yourself in the videos? Can you tell me more about what you saw yourself doing in the video? What did you like about watching the videos?

Do you feel like the videos helped you practice your reading?

How do you think the videos helped you with reading?

What did you learn from the videos?

What are some of the letter sounds that you read in the videos? What are some of the words that you read in the videos?

Did you watch the videos at home?

Did your mom/parent like the videos? How do you know?

Did your family see the videos?

Would you like to make more videos?

Do you think the videos made you a better reader?

Do you know the words you learned in the videos?

Did you remember the words from the video when you were reading in your classroom?

Appendix 5.

VSM Treatment Fidelity Checklist

Testing Kits **Observed Y/N** **Comments**

Decodable Words
5-second responses

Sight Words
1 minute

Dibels Word Lists

Random Order

Timers

	VSM Treatment Fidelity Checklist	
Testing Kits	**Observed Y/N**	**Comments**
Decodable Words		
5-second responses		
Sight Words		
1 minute		
Dibels Word Lists		
Random Order		
Timers		