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The Effects of a Multi-Sensory Reading Program on Students with Disabilities

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Children with varying exceptionalities are most likely paired with having a reading disability. According to Weiser (2012), "Approximately, 80% to 85% of students with learning disabilities have been described as having reading disabilities. (p. 161). This profoundly affects students in all areas of their academic life since every other subject is, at its most basic level, dependent on a student's ability to read, comprehend, and act on the information they acquire in a course. Not being able to read means the student is defeated before attempting the task. An example of this was noted in 2013 with a report from the National Assessment of Educational press that revealed 69% of fourth graders and 60% of eighth graders with disabilities scored below the basic level on the expectations on the reading test whereas only 27% of fourth graders and 18% of eighth graders without disabilities scored below basic (Solis, Miciak, Vaughn, & Fletcher, 2014). The inability to read or read at the level required in a course to process the information and complete any assignment has already doomed the student to failure if intensive reading interventions are not put into place.

Review of Literature

It demands our immediate concern to the facts that reading deficiencies can lead to behavior difficulties in school, to delinquency, to an increase drop-out rate, and even suicide (Denton & Al Otaiba, 2011). This is why it is imperative to provide intensive interventions in reading for students with reading disabilities. It is not only imperative that teachers adapt instruction to meet the need of students with disabilities; it is the law (Rankhorn, England, Collins, Lockavitch, & Algozzine, 1998). The Individuals with Disabilities Education Act (IDEA1997) mandated that all students, including students with disabilities, have access to evidence-based instruction that is aligned to grade level standards and make progress in the general education setting. This is why special educators are tasked with the job to investigate

intervention strategies and evidence-based reading programs that have proven to be successful. As Vaughn (2014) states, "special education is more urgent, more intensive, more relentless, more precisely delivered, more highly structured and direct, and more carefully monitored for procedural fidelity and effects" (p. 51). Researchers have suggested that students can meet the standards of the general curriculum if they are provided opportunities through different modalities while also getting instruction in their below-average decoding skills. The four ways that this can alternatively be taught are: visual, tactile, auditory, and multi-modal (Johnstone, Thurlow, Thompson, & Clapper, 2008). This can be a useful strategy to help students that are struggling to meet the reading standards in the general education setting.

Response to Intervention Process

The earlier the Response to Intervention (RTI) team can identify a student with a disability, the earlier the child may receive Special Education services. RTI was mandated by federal legislation under Individuals with Disabilities Act 2004. The RTI process is the foundation for identifying students who need special education services as well as the foundation for free and appropriate public education (FAPE) (Greulich et al., 2014). Within the RTI model students are provided with layered services of quality reading instruction. Tier 1 is for the students who are identified as at risk for developing difficulty in reading. Tier 2 the students have not shown success in Tier 1 and now will receive supplemental small group reading instruction. Tier 3 is for the students who continue to remain unresponsive to the intervention and are provided with even more intensive reading instruction (Case et al., 2014). By the time a student has reached Tier 4 on the Response to Intervention continuum, which is special education, many different strategies have been implemented and failed. It is at this point that intensive intervention comes into place to help fill in the gaps in reading fluency and reading

comprehension. Reading intervention has been proven to increase a student's ability to read more fluently and comprehend the text accurately when used with the right intensity and degree of instruction. This is considered best practice for teaching students with a reading disability.

Once a child has reached Tier 4 and an Individual Education Plan is written for the individual by the Special Educator, many considerations need to take place during this development. Although nationally students with reading disabilities make up the largest population in the Learning Disabled category, many times a student does not specifically receive a label of reading disabled (Wanzek & Kent, 2012). A student can have varying disabilities that are their primary label but may still display a reading disability also. That is why it is important for the Special Educator to dig deep into the testing data and RTI data to understand all the needs for each individual student. The Special Educator then needs to let the IEP drive them to find which evidence best practices are best for the individual student.

Orton-Gillingham Reading Approach

There are a variety of reading interventions and reading programs that have been researched, even before No Child Left Behind (2002) one of the most popular programs that has been used with struggling readers is the Orton- Gillingham reading program (OG). The Orton-Gillingham's popularity has often brought request for instruction in this approach by parents and teachers of students with disabilities. It is so popular that twenty-seven legal decisions on due process cases requested specific reading methods. Out of the twenty-seven cases, fifteen were requesting OG based reading programs between the years of 1989-1998 (Ritchey & Goeke, 2006). The OG approach is a systematic, sequential, multisensory synthetic and phonics- based approach to teaching reading with instruction in phonology and phonological awareness (Giess, Rivers, Kennedy, & Lombardino, 2012). It was developed in the 1930s and 1940s by Dr.

Samuel Orton and educator Anne Gillingham. The basis for this reading program is instructed through a multisensory approach through auditory, visual, and kinesthetic modals. At the basic level it teaches concepts of spelling, writing, and reading building on mastered skills. Teachers instruct the skills through multiple senses, where the instruction is highly intensive with explicit rules of written expression. The core content is taught through the use of sounds, syllables, words, sentences, and written language (Magpuri-Lavell, Paige, Williams, Akins, & Cameron, 2012). Progress is monitored and this guides the instruction to reteach skills or increase the difficulty of new skills to be taught (Rose & Zirkel, 2014). According to the (NRP 200) systematic teaching of phonics is an essential component of reading instruction and it enhances the student's ability to learn to read (Campbell, Helf, & Cooke, 2008). Even though the program has gained recognition for its success in helping students who are struggling to read or that have reading disabilities, much of the data has been collected anecdotal or personal experiences. There has been limited scientific research done on the Orton-Gillingham approach in the classroom, most have been in a clinical approach setting (Ritchey et al., 2006). Before implementing a reading intervention the researcher must first deem if the program is an evidence-based practice.

Sonday Reading System

For the purposes of this research The Sonday System will be used as the intervention on students with a specific learning disability. The program was created by Arlene Sonday based on an Orton-Gillingham approach to teach reading from beginning letter and sound recognition through most phonograms. The program is very systematically structured, with detailed lesson plans that include time to spend on each section. The course continues to work through a logical progression from simple to more complex words. Learners practice reading, writing, and spelling in every lesson. The program does not require special training, other than a ninety minute video.

The training is offered in a two-day training format that is beneficial for teaching the program (Duffy, 2009). Although there are numerous studies found on the Orton-Gillingham approach in clinical settings, there was only one study found on the Orton-Gillingham approach, The Sonday System. The study showed that the treatment group made significant gains over the control group in phonological awareness, decoding, and reading comprehension. Students in the control group were not taught phonics through a systematic level and they did not show significant gains in phonological awareness and decoding skills. The participants unlike this study were not identified as having any type of disability (Boulware-Gooden, Dahlgren, & Joshi, 2002). This why this research is very important to see if this can be a useful evidence-based reading instruction method for student with a Specific Learning Disabilities.

Benefits of a Multi-Sensory Reading Approach

In order to become a fluent reader that understands the text read a person must have the cognitive process that involves the ability to recognize words in print, understand the meaning from the text, and the combination of these two skills so that reading is automatic and accurate. Decoding words is the basis for students to become a fluent and skilled reader (Magpuri-Lavell et. al., 2012). For students with a reading disability it is the consensus that the majority of the students have weak phonemic awareness (Hines, 2009). This is why the multi-sensory approach can be beneficial to bridge this gap and give the students instruction explicitly and systematically on phonemic awareness through the multi-sensory reading approach. By teaching through a multi-sensory approach the Special Educator is instructing a student simultaneously through visual, auditory, and kinesthetic strategies to improve their memory and learning of new decoding skills (Campbell et al., 2008). This gives them a learned strategy that can help them

decode words and ultimately becoming a more fluent reader that can comprehend text in which they have read.

Methodology

Purpose

The purpose of this research is to determine the effects of a multisensory reading program, the Sonday reading system, on five students with a Specific Learning disability in a resource classroom setting specifically relating to the increase of decoding skills, word attack, fluency, and comprehension skills. (1) What are the effects of a multisensory reading intervention program on the fluency of decoding words of students with a disability? (2) What are the effects of a multisensory reading intervention program on comprehension skills of students with a disability?

Participants and Setting

The study took place in a reading resource classroom with small group reading instruction being provided by the special education teacher. The school is located in Middle Georgia in a small rural community. The school population consists of 776 students in grades kindergarten through fifth. The school is classified as a Title 1 school with 78% of the students receiving free and reduced lunch. The school demographics consist of 50% white/Caucasian, 49% black, and 1% Hispanic. There are 49% male and 50% female. There are 52 students enrolled in the Program for Exceptional Children, which includes the 35 gifted students. Participants in the study consist of three students; Charlie, diagnosed with a Specific Learning Disability (SLD), Sadie, is diagnosed with Other Health Impairment, and Hannah that has a Specific Learning Disability. These students are demonstrating difficulty reading fluently and comprehending grade level text in the general education setting.

Charlie is a seven-year-old child that was born at 22 weeks and spent four months in the neonatal unit at the hospital. She has been receiving special Education services since she was 3 years old. Currently she receives Special education services in speech, academics, physical therapy, and occupational therapy. Charlie's main weaknesses are in the areas of reading fluency and reading comprehension. Charlie has not made a clear promotion in school, each year she has been administratively placed because she has not met all the required standards for the grade level.

Hannah is a 7-year-old girl that has been diagnosed with ADHD and this is the first year she became eligible for Special Education services under the Specific Learning Disability area. Hannah's weaknesses are in the areas of word reading, reading comprehension, and spelling. Hannah has not made a clear promotion since being enrolled in Kindergarten due to fact that she had not mastered the required standards for a clear promotion.

Sadie is a seven year-old female in the second grade with multiple medical diagnoses, including ADHD, Cerebral Palsy, and Oppositional Defiant Disorder. She was able to receive Special Education services under the areas of Orthopedic Impaired and Other Health Impaired. Her academic weaknesses are in the areas of word reading, reading comprehension, and spelling. Sadie has not met the requirement to be promoted since she has been enrolled in school.

Design

The study design is a Pretest Post Test design with graphs to show baseline data in comparison to intervention data. The type of design will be an Intra-subject group design because the individuals are compared to themselves prior to intervention and the after intervention.

Procedures

During baseline, the teacher assessed the student's current reading fluency using the GRASP to get their current words per minute. Also during baseline the student's grade level comprehension was tested by the GRASP tool. After baseline was established Charlie, Sadie, and Hannah received direct instruction in a small group setting of 4 students for 30 minute segments, four days a week. Each Friday students were assessed on a Sonday probe to see if they improved on their word attack skills.

Procedural Fidelity

The trainer from the Sonday reading program came and did three fidelity checks throughout the first year that the researcher implemented the Sonday reading program with the students. During the fidelity checks the researcher's scores were 80% first fidelity check, 85% second fidelity check, and 95% for the last fidelity check.

Results

The purpose of this research is to determine the effects of a multisensory reading program, the Sonday reading system, on five students with a Specific Learning disability in a resource classroom setting specifically relating to the increase of decoding skills, word attack, fluency, and comprehension skills. (1) What are the effects of a multisensory reading intervention program on the fluency of decoding words of students with a disability? (2) What are the effects of a multisensory reading intervention program on comprehension skills of students with a disability?

The research indicates that the Multi-sensory reading approach using the Sonday reading system the students made gains in reading fluency as well as reading comprehension skills. Figure 1-8 show the results for the three students: Charlie, Sadie, and Hannah.

Based on the results of this study the Sonday Reading program intervention was considered to be successful. Although Sadie's fluency and comprehension scores indicate that she had the highest increase in reading skills, the data show that all students responded positively when they were given direct, explicit instruction through a multi-sensory reading approach.

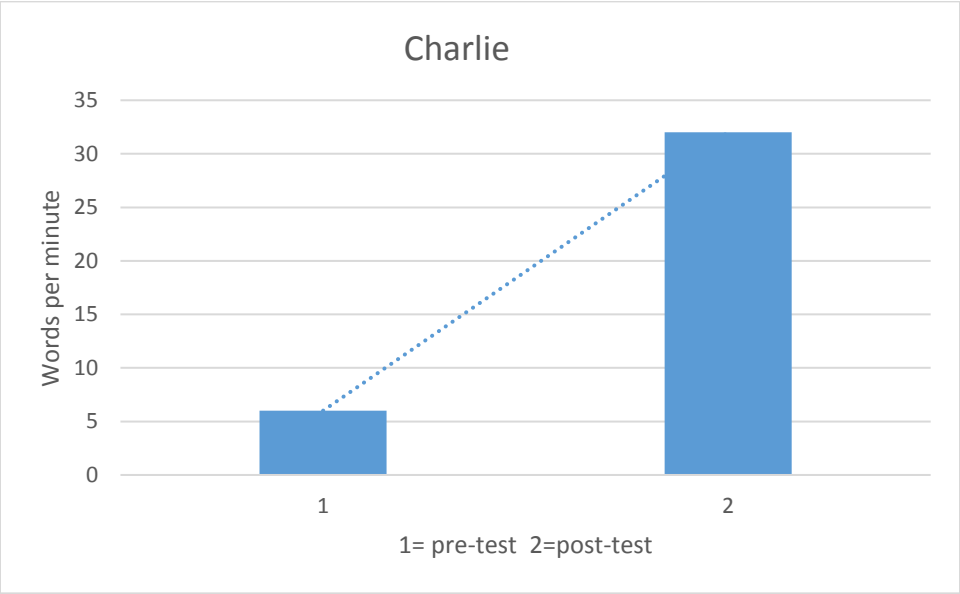

Figure 1: A comparison of pretest and post-test scores for Charlie

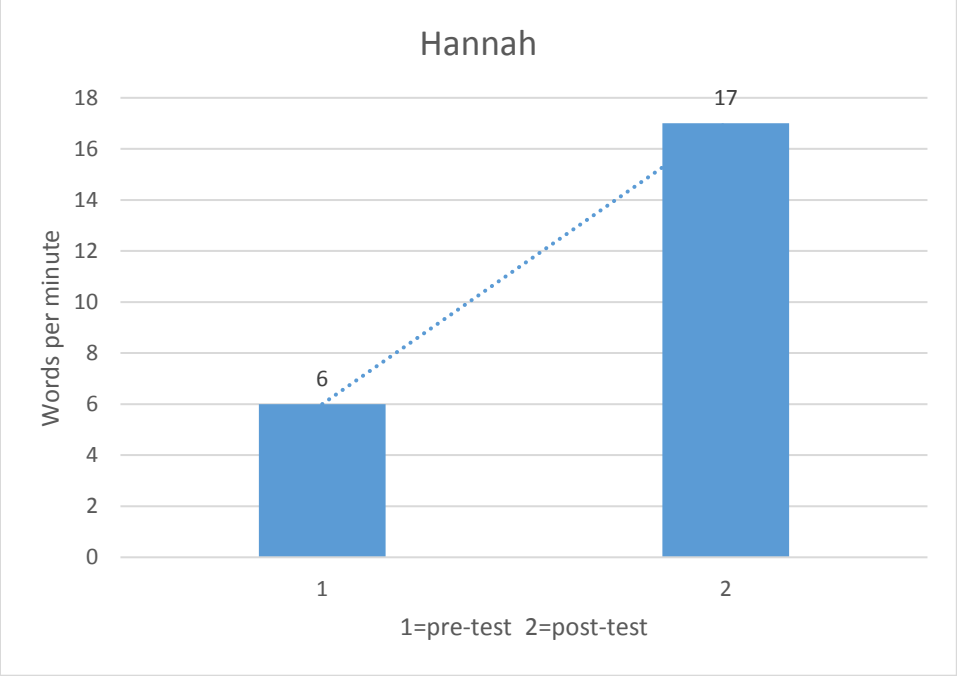

Figure 2: A comparison of pretest and post-test scores for Hannah

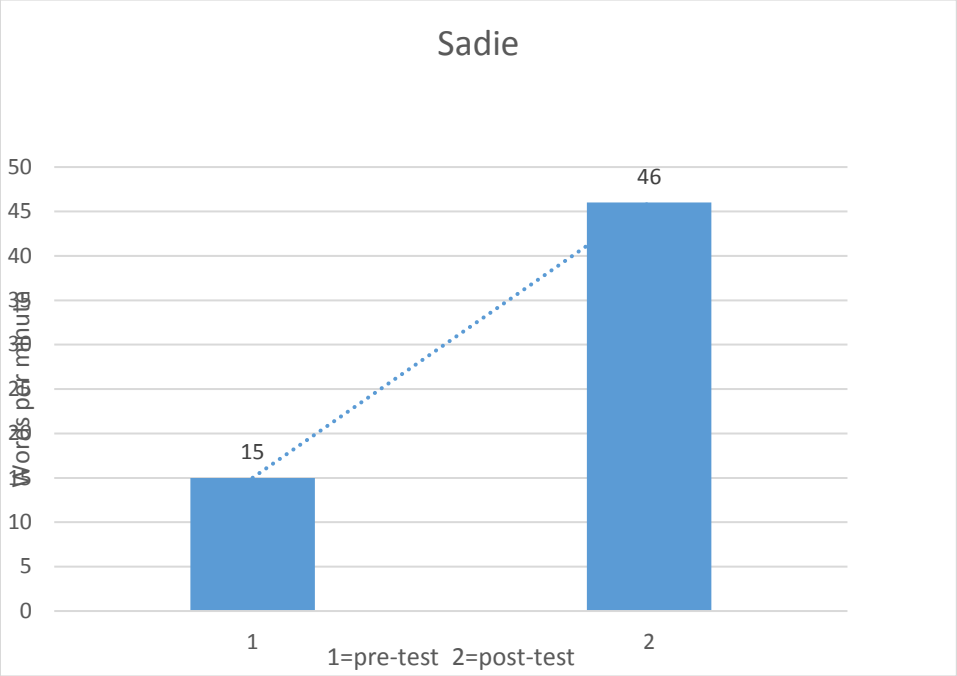

Figure 3: A comparison of pretest and post-test scores for Sadie

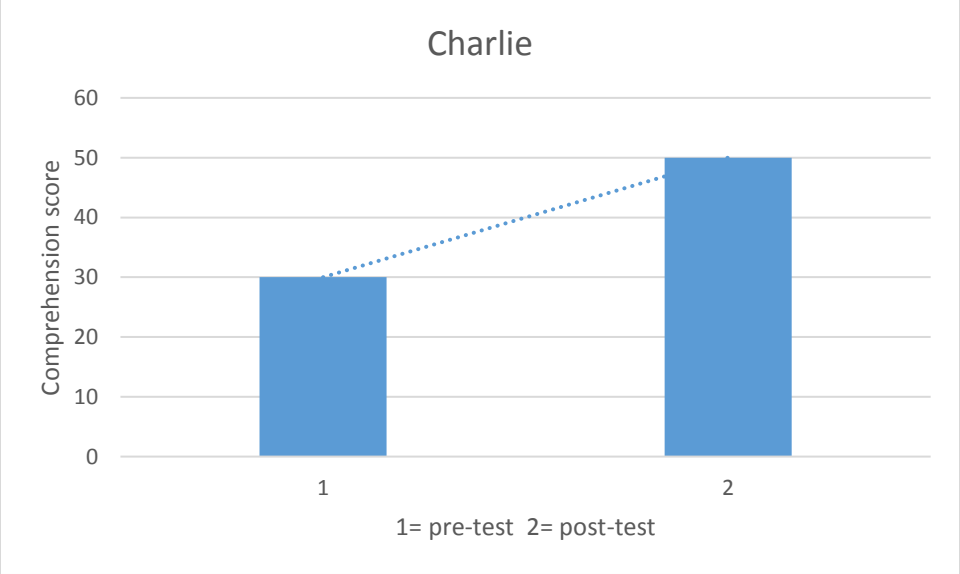

Figure 4: A comparison of pretest and post-test scores for Charlie

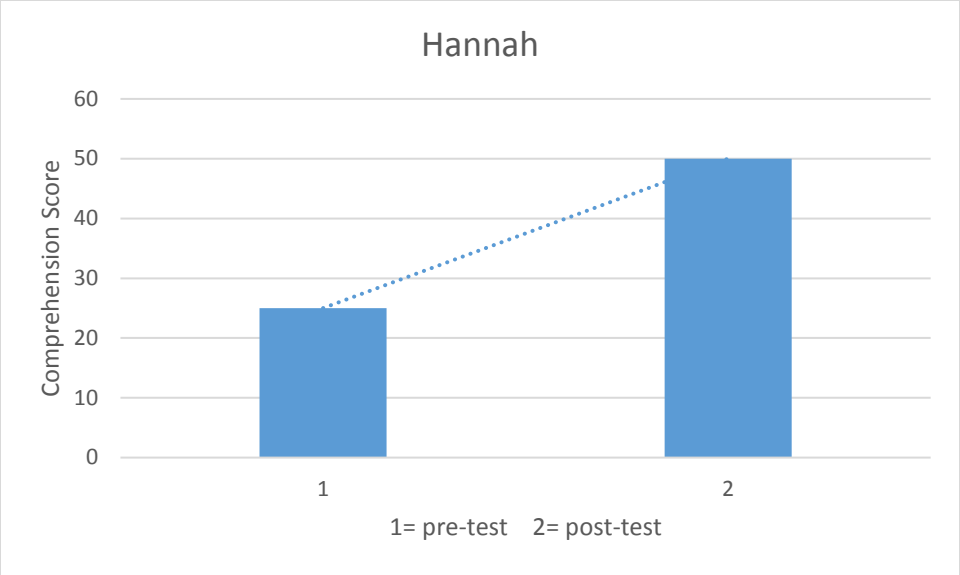

Figure 5: A comparison of pretest and post-test scores for Hannah

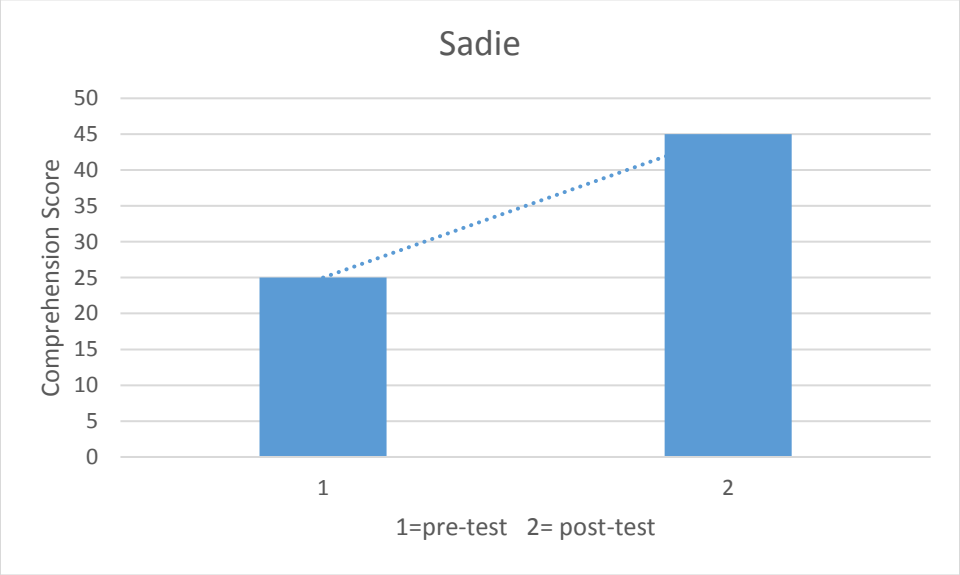

Figure 6: A comparison of pretest and post-test scores for Sadie

Limitations

A limitation to this study relates to the small size of participants. With that the data only 3 students participating, the generalizability of the study is limited. An additional limitation would be the time that the data was collected on the intervention. The intervention only showed three

and a half months of reading instruction. It would be more beneficial if the data was collected for an entire school year.

Implications for Practice

Through the process of conducting this study, the researcher learned that students with disabilities can improve their fluency rate and comprehension skills through the instruction using the Sonday multi-sensory reading program. This reading program can make a positive impact on teaching students who are struggling to read. This reading program can not only be used for students with disabilities but also students in the RTI tiers to close the gaps in their reading fluency and comprehension skills.

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Appendix A

Teresa A. McCuen
Principal

Neal A. Spence
Assistant Principal

Wells Elementary School
101 Mattie Wells Drive; Macon, GA 31217
Ph. (478) 742-5959 Fax (478) 742-5930

June 28, 2016

To whom it may concern:

After careful consideration, I give permission for Lisa Myers to conduct research investigating the effects of a multi-sensory reading approach on students with disabilities. Mrs. Myers may conduct her research at Wells Elementary School during the 2016-2017 academic school year. Mrs. Myers may include Wells Elementary students in her participant pool.

Sincerely,

Teresa A. McCuen

Teresa McCuen, Principal

Appendix B

Minor Assent Form

I, _____, agree to be a participant in the research title The Effects of a Multi-sensory Reading Program for Students with Disabilities, which is being conducted by **Lisa Myers**, who can be reached at **478-742-5959**. I know I do not have to participate; I can stop at any time and have the results of the participation returned to me, removed from the research records, or destroyed.

The following points have been explained to me:

1. I will be asked to participate in participate in a multi-sensory reading program to increase my reading fluency and reading comprehension skills.
2. If I become uncomfortable, I can stop at that time.
3. If I participate in this study, I am not putting myself in any danger.
4. My information will be kept secret, and no one will know that the answers or results are mine, unless I tell them.
5. If I have any questions about this, I can ask the researcher or any teacher.
6. If I want to know more about the research, I can ask for more information after the research is finished.

_____

Signature of Investigator Date

_____

Signature of Minor Participant Date

*Research at Georgia College involving human participants is carried out under the oversight of the Institutional Review Board. Address questions or problems regarding these activities to Dr. Tsu-Ming Chiang, GC IRB Chair, CBX 090, GC, email: irb@gcsu.edu; phone: (478) 445-0863.

Appendix C

Dear Parents:

I, Lisa Myers, am a graduate student at Georgia College, completing a Specialist degree. I am taking EDEX 7310, *Research Design*. Graduate students learn how to implement action research projects. They select a small target group of students or one student (single subject design research) to implement an evidence-based practice that is designed to improve a specific behavior or skill.

I would appreciate it if you would allow your student to use your child's information for this assignment. As part of the GC graduate program, I will be required to keep all information confidential. All identifying information such as your child's name and school will be omitted. None of the information will be used to evaluate your child.

Furthermore, the assignment will not take your child out of class nor will it distract from your child's education. If you choose for your child not to participate, there will be no consequence. Choosing not to participate will in no way impact the services or support that your child receives.

If you have any questions or concerns about this assignment, please call me at Wells Elementary at 478-742-5959. I am also available upon your request to meet at school. *Please complete the attached form and return.* Thank you for considering this request.

Respectfully,

Lisa Myers

Appendix D

Parent/Guardian Consent Form

I give permission for my child, _____, to be a participant in the research titled **The Effects of a Multi-sensory Reading Program on Students with a Reading Disability, which** is being conducted by Lisa Myers, who can be reached at 478-742-5959. I understand this participation is entirely voluntary; I can withdraw my consent at any time and have the results of the participation returned to me, removed from the research records, or destroyed.

The following points have been explained to me:

1. The purpose of this study is to determine if implementing a multi-sensory reading approach is to see if it can improve reading fluency and reading comprehension.
2. The procedures are as follows: My child will be asked to participate in a multi-sensory reading program to increase reading fluency and reading comprehension skills. My child's name will not appear on the data sheet; therefore the information gathered will be completely anonymous/confidential. I will be asked to sign two of these consent forms. One form will be returned to the investigator and the other consent form will be kept for my record.
3. Potential Risks: Although struggling readers can find any form of instruction that involves reading somewhat stressful, I will utilize rewards and praise to keep stress to a minimum. I also believe that this multisensory approach to literacy will be fun and different for the students and could result in a lowered stress level when compared to more typical literacy instruction. Therefore, participation in this study poses very little physical, psychological, legal, or social risks.
4. Potential Benefits: With the implementation of the multi-sensory reading program, your child could improve his/her reading comprehension and fluency and experience an increased motivation to read.
4. The results of this participation will be confidential and will not be released in any individually identifiable form without my prior consent unless required by law.
5. The investigator will answer any further questions about the research (see above phone numbers).
6. In addition to the above, further information, including a full explanation of the purpose of this research, will be provided at the completion of the research, if you request it.

Please check one. Sign below.

☐ Agree ☐ Disagree

_____

Signature of Parent or Guardian Date

(By signing I acknowledge that I am 18 years of age or older)

_____

Signature of Investigator Date

****

*According to GC records retention policy, all research records pertaining to this research will be retained for a minimum of three years before they will be shredded or permanently deleted.

Research at Georgia College involving human participants is carried out under the oversight of the Institutional Review Board. Address questions or problems regarding these activities to Dr. Tsu-Ming Chiang, GC IRB Chair, CBX 090, GC, email: irb@gcsu.edu; phone: (478) 445-0863.