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**USING MULTISENSORY TECHNIQUES TO IMPROVE READING  
ACHIEVEMENT**

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## ABSTRACT

Early literacy skills are critical for success in school, yet so many young learners lack the necessary skills to be successful readers by the end of third grade. The purpose of this study was to examine the effects of multisensory activities on students' ability to learn how to read in a kindergarten classroom. This review will delve into the history of multisensory learning, while examining evidence-based practices that will be used throughout my study. **This** study **focus**ed on the **literacy** lesson, including phonemic awareness, phonics, and alphabet knowledge, while acknowledging these three topics are only part of the comprehensive literacy program. Assessment data collected from the study showed that students maintained or improved necessary literacy skills from the beginning of the year to middle of the year. Data also suggested that a few students struggled to reach middle of the year goals during implementation.

Throughout the study, students shared their opinions **about** each multisensory activity. Survey results indicate positive student feelings toward all multisensory activities. The same number or more students shared **that** they enjoyed the activities at the end of the study compared to when they were first introduced.

Student work **samples** suggested students could apply skills in isolation, however, students needed more practice implementing learned skills into meaningful text.

## **ACKNOWLEDGEMENTS**

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## **RESEARCHER STANCE**

The thought of my time in elementary school brings a smile to my face. Friends, teachers, recess, lunch, assemblies, class parties, all the things that make elementary school so exciting! When I think of my experience in school as a young girl, I cannot remember a lot of the learning that took place but rather the fun happenings that occurred each year with friends and teachers that were so great. In fact, I cannot even remember the grade or how old I was when I learned how to read, but I do remember this older woman, who I only ever saw in her room next to the gymnasium, where she was surrounded by mounds of books. I would sometimes see her working with a few children, but never with more than two or three. She would pull me out into the hallway a few times a year and ask me to read a passage while she timed me. I was incredibly nervous. I did not even know who this lady was. I only saw her a couple times a year and every so often roaming the hallways. I never understood why she was asking me to read this page to her and then time me as I was reading. I sometimes did not even get through the entire passage and she told me to stop reading and tell her what I remember from the story. This process was very foreign to me. I never understood why she wanted to hear me read and ask me questions about my reading. Why isn't my teacher doing this with me, and why does this happen at certain times in the school year, I wondered. As I got older, I began to realize this woman was

asking every child to read the same passage and comprehend what they read. Still, I was nervous reading to her. As a teacher, I now understand the crucial role of the reading specialist and what she seeks to accomplish through her timed readings.

The elementary school experience including the wonderful teachers set me up with a love of learning. My own family also played an important role in developing my enjoyment for learning and teaching. Many of my immediate family members, including my mother, were educators. I found that their love of teaching had worn off on me. I loved being in school with my mom and watching her teach. She had such a great teacher voice that I hoped to one day have, too. The passion and excitement that she taught with made me giddy and proud!

As I grew older and entered college to study elementary education, I began to acquire valuable experiences that were not all sunshine and rainbows. The first few years of college I dipped my feet into a wide array of school experiences with children coming from all different backgrounds. The experiences that taught me the most were those in the urban areas, including Easton and the Boys and Girls Club of Bethlehem. I learned that there is a whole world of children who have differing needs in and out of the classroom and their experiences in school were likely to be quite different than mine. These kids were coming from places where they might not have enough money for food or clothing and might even care less about going to school and getting good grades.

This opened my eyes and made me want to have my own classroom even more. I wanted every child to have the amazing experience in school that I had. My way of paying it forward was to continue on my quest to become a classroom teacher.

As I continued on in my college career, gaining more field experience and moving on to student teaching, I was continuously reminded that students come from differing backgrounds, and meeting the needs of all the individuals is important. I remember visiting an elementary school in York, Pennsylvania, close to where I was attending school. I was volunteering my time in a kindergarten classroom during kid writing time. I remember walking into the classroom and seeing two other volunteers and the teacher. The teacher was telling me about a group of students that I was going to help that day. As she was giving me the supplies, she told me about the twin boys at this table and how they were going to need a lot of help with their writing. She gave me helpful tips to guide them along. I remember sitting down with these three students and for a second, I forgot that they were only five, which explained why they needed *a lot* of help. They all wanted my attention at the same time, and their writing struggles seemed so urgent. They were constantly tapping my hands and pulling on my clothes. I remember looking around the room and thinking that this teacher has so many students that she needs to help, how could she possibly help each student and meet all their learning goals at the same time? This experience made me realize firsthand the differing needs sitting in just one classroom. This kindergarten

teacher had students who were readers and writers, students who were just learning to read and write, and students who struggled immensely to do both. I was amazed at how easy she made it seem to teach everyone. I loved to sit in her classroom after kid writing was over and watch her next lesson, which was like magic!

After I graduated from York College of Pennsylvania in the spring of 2012, I was still excited to begin my career but also a little worried. As I obtained all these new experiences I questioned my ability to have my own classroom and be able to successfully teach every child well. I was worried their needs were going to be so drastically different that I would need to have to plan three or four different lessons a day to make sure I was meeting the needs of all learners and challenging the ones that needed it. At this time, there weren't many teaching jobs available so I began as a substitute in different districts, which itself was difficult. I was in a new classroom every day, trying to understand how each school was run and how individual teachers ran their classrooms. The one thing that I always believed in that I felt made my days as a substitute run more smoothly was developing a rapport with the students. To this day, I believe that from the first time you meet the students, you need to take an interest in their lives. Get to know them and the things they enjoy doing outside of school, their family life, their interests, etc. I always feel that if I know my students I can help them learn better.

One might be surprised at how much children will share with you when they feel comfortable enough to trust you.

Eventually in 2014, I landed my first full-time teaching job in my current district as a kindergarten teacher. I remember being hired late in the summer when the district realized they needed another teacher to teach an AM kindergarten class. I was so excited, yet so nervous. I remember getting the job a few days before the school year started. I didn't have any lesson plans or any decorations hung in my classroom. It seemed like I was already getting the year started off all wrong. Luckily, I had a great colleague that helped me tremendously! From my first day teaching kindergarten in 2014 to beginning to my fifth year of teaching kindergarten, I have learned so much more about teaching, my students, and how to manage my fears of differentiation in the classroom.

As I begin my fifth year of teaching kindergarten, I look forward to each year as an opportunity to teach my new students about reading, writing, math, science, and hopefully developing a love for learning. Right now, [my school](#) district has begun a huge initiative for having students reading at grade level by the end of third grade. As a kindergarten teacher, I am the first crucial piece of the puzzle for my students. Every new school year presents itself as a new opportunity to teach my new students how to read! While the district has adopted a core-reading curriculum, there are aspects that need to be emphasized more than others. Student learning should include differentiation to meet the needs of all

learners. I want my students to be highly motivated and engaged. To do this, I have planned to include multisensory activities into the curriculum. The use of multisensory learning should be able to engage all learners, including those who learn in a variety of modalities and help to aid in retaining skills. These activities have to be fun—remember the children with I work are only five years old! I believe these activities should be taught using explicit and systematic instruction to ensure that students are provided multiple opportunities for practice in skills that are taught to them from simple to more complex. In order for me to provide my students with proper systematic and explicit instruction, I will also be implementing the gradual release of the responsibility model as a way to model and practice the explicit teaching of skills. At the end of this research project, I hope to find that my students possess the necessary skills to be proficient readers and have developed a foundational set of skills that will help them in becoming readers.

## LITERATURE REVIEW

The importance of teaching students how to read is more necessary than ever before. One in six children who are not reading proficiently in third grade do not graduate on time, a rate that is four times higher than that of proficient readers (Hernandez, 2011). For students coming from poverty, 22 percent of these children do not graduate from high school (Hernandez, 2011). Learning how to read is an essential factor in life. Without the ability to read, many students risk the chance of dropping out of high school. The future for high school dropouts could be in jeopardy without the opportunity for a job. Many jobs require employees to be able to read and comprehend.

Students across the country are failing to meet grade-level standards that are necessary to live an effective life. The ability to read is a necessity in life; hence, the importance of being taught how to read is a vital skill that children need to learn in school, specifically before the end of third grade. Children in the primary grades are learning to read, but after third grade, students are reading for meaning. Therefore, if a student is lacking the skills necessary to read at grade level, they will struggle to be successful across all academic subjects.

One way to meet the needs of students is by using a multisensory teaching approach. Multisensory teaching engages students in the learning process by using two or more senses simultaneously to engage the learner, visually, tactilely, and/or kinesthetically. Thus, this review of literature will address the history of

multisensory instruction, identify the best practices of teaching when using multisensory instruction, and [specify](#) multisensory activities to use when teaching a phonics and phonemic awareness lesson in the classroom.

### **Multisensory in the past**

[Multisensory learning has been in education for many years. It has become a more](#) popular topic in the past few years. Multisensory learning uses more than one modality for learning including kinesthetic, auditory, visual, and tactile learning. Dr. Samuel Orton first introduced the term “multisensory” in the 1920s to help in his effort in finding remediation techniques for students with dyslexia (Campbell, Helf, & Cooke, 2008). Along with Dr. Orton, in 1936, Anna Gillingham and Bessie Stillman created a teaching manual that combined multisensory techniques and how to teach the structure of written English [for children with learning disabilities](#). From this, came the recognized name of the Orton-Gillingham (OG) approach, which refers to the structured, sequential, and multisensory techniques (Rawson, 2018). Many programs and schools today include this foundational approach to teaching reading and writing.

A study conducted in 2016 by Schlesinger and Gray investigated the use of multisensory instruction on learning letter names and sounds, word reading and spelling. The study aimed to determine whether two groups typically developing students and [students with dyslexia](#), benefited from the use of alternating interventions, a structured language intervention, and a multisensory intervention.

The interventions were adapted from the Orton-Gillingham based programs that followed the structured language approach. Assessments were given to participants to determine if they could produce letter names, letter sounds, read words, and spell words. In letter naming production, the results showed that there was a positive experimental effect for both intervention groups in typically developing students. For letter sound production, words read correctly, and words spelled correctly, there was also a positive experimental effect for both interventions. When comparing the multisensory intervention to the structured language intervention for letter names and letter sounds, the results indicated there was no clear advantage to using simultaneous multisensory input. The results showed that there were still positive effects to this intervention. The authors stated that perhaps these positive effects were due to the OG structured language components that were prominent in both interventions (Schlesinger & Gray, 2016). While this study did show positive effects due to the OG approach, there were no clear advantages to using the multisensory approach. Even though the results of this study were not conclusive about using the OG approach, my study will be designed to [use the multisensory approach for](#) teaching reading. My [research is](#) designed to include different techniques ([e.g. gestures, song/dance, sky writing, etc.](#)) delivered to students using evidence-based practices while using a comprehensive literacy program.

### **Evidence-based Practices**

Throughout the years in education, there have been many methods of teaching reading that have become available to teachers for implementation in their classrooms. While teaching a child to read is a difficult task, the way in which a teacher instructs the class is important in the child's ability to acquire the skills necessary to become a reader. Smith, Saez, and Doabler (2016) created a model for instruction that benefits the learners and addresses teacher practices that I plan to use in my study (see Figure 1). Their idea of using explicit and systematic teaching begins with the teacher strategically selecting the appropriate skills to teach and in what order they should be taught. This is referred to as systematic instruction (Smith, Daez, & Doabler, 2016). The first step of the model suggests that the instructor or teacher use explicit instruction that is direct. This is referred to as the "I do" step as the teacher focuses directly on the lesson objectives. The next step of the model is referred to as the "we do" step. Together, the teacher and student work together to practice the skill, while the teacher monitors student progress toward the goal. Finally, the "you do" part of the model is where the student is given ample opportunities to practice the skill and focus on the specific goal to reach mastery of the skill (Smith, Daez, & Doabler, 2016). To help in fostering beginning reading skills, I will be using explicit and systematic phonics instruction as well as a gradual release model.



Figure 1. Features of Explicit and Systematic Instruction. This figure was taken from Smith, J. M., Saez, L., & Doabler, C. T. (2016) Using systematic and explicit instruction to support working memory. *TEACHING Exceptional Children*, 48(6), 275-281.

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***Systematic instruction.*** Researchers today have found evidence-based practices that support effective phonics instruction. The Department of Education, Science, and Training (2005) suggest the use of both systematic and explicit instruction. Systematic instruction is defined as “systematic process and that students need to master foundational skills before moving onto more complex tasks” (Centre for Education Statistics and Evaluation, 2011, p 5). In other words, beginning readers need instruction that begins with a simple task or skill and then builds upon simple skills with more complex skills. The teaching of basic reading skills should be taught in a sequential order so as not to frustrate the learner. For example, I would teach a child a consonant-vowel-consonant pattern (CVC) before I would teach them a CVCe or silent e pattern; this type of instruction goes from simple to more complex.

Perhaps systematic instruction first came about when Chall (1967) released The Great Debate where her major finding was that systematic instruction in phonics led to better reading achievement than an unsystematic approach. After many years of deciding whether systematic instruction was best to teach young readers, the whole language approach became popular. The whole language approach to teaching reading involves an unsystematic approach that embeds phonics instruction into authentic readings and writing (Stahl, Duffy-Hester, & Stahl, 1998). The concern over whether to use the whole language approach or a systematic approach is still one that is debatable in today's

classrooms. However, Ehri (2003) conducted a review of literature of 38 studies that compared groups of students using systematic phonics instruction and other groups that used unsystematic or no phonics instruction. They used an effect size to determine if there was a difference between the groups. One of the findings of the study is that systematic instruction helps children to read more effectively than a program with little or no phonics instruction. Ehri (2003) also found that effect sizes were significantly greater among younger learners (kindergarten and first grade) than they were between the second through sixth graders. These findings indicate that systematic phonics instruction in the early years has a greater impact. “Because the writing system in English is more complex and variable than in some other languages, it is harder to learn. This makes systematic phonics instruction even more important to teach, because children will have difficulty figuring out the system on their own” (Ehri, 2003, p.3). While systematic instruction alone is not going to ensure the ability of a child to read, it is one important aspect in reading instruction. Systematic instruction can be successful when instruction is also explicitly taught.

***Explicit instruction.*** Explicit instruction embedded within systematic teaching is imperative for coaching young learners how to read. Explicit teaching is “imparting new information to students through meaningful teacher-student interactions and teacher guidance of student learning” (Rupley, Blair, Nichols, 2009, p. 125). Explicit instruction leaves little discretion for the learner. It is

direct instruction that teaches a skill or rules and allows time for practice in applying the new skill. Researchers have recommended the use of explicit instruction in teaching students reading strategies and skills (Reutzel, Child, Jones, & Clark, 2014). For example, when pointing to letters in a word written on a classroom whiteboard, the teacher says, “When you see one vowel with a consonant after it, the vowel will be short. Watch me read this word. I see the letter ‘p’ so I say the sound /p/. I know that this letter ‘i’ and it will make the short /i/ sound because it is the only vowel in this word and it is followed by the consonant /g/. I know that this word is ‘pig.’” The teacher would continue to model one or two new words following the same spelling pattern. This would be followed by the “we do” where the students and teacher practice numerous words containing the short vowel pattern. Finally, students would independently practice (“you do”) reading words with this pattern while applying their new knowledge.

Teacher knowledge, modeling, and flexibility are crucial in explicit instruction. Students directly learn new skills from the teacher’s modeling of new skills. It is the teacher’s role to plan appropriately and be knowledgeable about the topic. A study by McCutchen and colleagues (2002) was conducted to see if there was a link among teacher knowledge and student learning outcomes while using explicit instruction. Their study was conducted with 23 experimental groups and 20 control groups with classrooms of students in kindergarten and first grade. The experimental groups were privy to many trainings and explicitly taught lessons, as

well as coaching that could benefit teacher lessons and, in turn, help improve student-learning outcomes. The study revealed that when teachers spent more minutes on explicitly teaching phonological tasks, students showed more growth in phonological awareness. [For instance, students in both groups were tested on a Test of Phonological Awareness \(TOPA\). “When the teachers’ implementation score \(measured as minutes spent on explicit phonological activities during observations\) was used as the predictor of starting point and growth, the teacher’s use of phonological awareness strategies was significantly related to student growth in phonological awareness” \(McCutchen et al., 2002\).](#)

Additionally, children in the experimental group, on average, gained 50% more in letter production than students in the control group (McCutchen et al, 2002). This study is important in showing the benefits of using explicit instruction with early learners.

Being flexible as students continue to learn and being able to adapt and adjust the lessons to fit the needs of the learners is also a key aspect of explicit instruction. Smith and colleagues (2016) have also supported the use of both systematic and explicit instruction; their study suggests that using both is beneficial to students because it supports their working memory. As supported by the research, I plan to use systematic and explicit instruction in teaching reading and using multisensory activities with my students. Explicit and systematic

instruction works well with instruction that is presented to students in a form of modeling that allows them numerous opportunities for practice.

***Gradual Release Model.*** The gradual release of responsibility model of teaching is one in which students receive multiple opportunities for practice of a skill through explicit and systematic instruction. Pearson developed the gradual release of responsibility model of instruction in 1983, which is grounded in the social-cultural theory of instruction (Vygotsky, 1978). This framework is based on the zone of proximal development model, which allows students to begin to work within their respective zone of proximal development. “Using imitation, children are capable of doing much more in collective activity or under the guidance of adults” (Vygotsky, p. 88). The GRR model uses modeling which is similar to Vygotsky’s “imitation”. The GRR uses levels of modeling for the student to watch the teacher first, followed by both the teacher and the student doing to the activity together. Lastly after many opportunities for practice, students have a chance for their own practice without the help of the teacher. This level of modeling and scaffolding is important for the student to imitate the teacher. Vygotsky himself says that when students are given the opportunity to imitate an adult, with their guidance, we can push them beyond their normal learning limits.

As Figure 1 suggests, repetition and practice is ideal when using systematic and explicit teaching, but it can also be an important practice to use

when releasing responsibility to students in their quest to master skills. The gradual release model follows a similar model to the model-lead-test formula which is described as the following: students see and hear an example of the correct skill being taught (model), students and teacher practice a few examples together with the teacher providing guidance and feedback when needed (lead), and then the student has the opportunity to practice the skill independently while the teacher monitors (test) (Earle and Sayeski, 2017). [Utilizing the gradual release model and evidence-based reading instruction, students have the potential to increase their reading skills.](#)

### **Balanced Approach**

Effective reading instruction should be comprehensive and address each of the five pillars of reading, including phonemic awareness, phonics, fluency, vocabulary, and comprehension ([National Reading Panel, 2005](#)). It is crucial to young learners, especially those from diverse backgrounds to include all components of reading instruction in lesson plans. All students should have the opportunity to “learn language patterns and the phonological code through phonemic awareness and phonics instruction, gain exposure to print, and become immersed in reading through fluency, vocabulary, and comprehension training” (Ming and Dukes, 2010, p 24). Using this balanced approach to teach reading is what I will be doing during daily reading instruction. While I will cover all five

elements of reading instruction, my study will specifically focus on the phonemic awareness, phonics, and alphabet knowledge portion of the lessons.

***Phonemic Awareness.*** One of the critical pillars of reading instruction is phonemic awareness. Phonemic awareness is the ability to hear and manipulate the individual sounds in words (National Reading Panel, 2005), [such as being able to identify beginning, medial, and ending sounds. Students with strong phonemic awareness skills also have the ability to manipulate phonemes by adding or deleting sounds in a given word.](#) Kenner and colleagues (2017) have stated that phonemic awareness is the strongest predictor of early reading success.

Additionally, the Shanahan & North Central Regional Educational Lab (2005) has also reviewed many studies pertaining to phonemic awareness and has found that instruction in phonemic awareness was effective for young children learning how to read. Phonemic awareness instruction has led to higher achievement in early reading and spelling and had positive impacts when measuring word recognition and reading comprehension. One aspect of phonemic awareness that makes it different from phonics and other reading instruction is that it is an auditory skill that can be done in the dark. It is important to teach students how to hear sounds in isolation. [Research suggests that teachers need to teach phonemic awareness skills sequentially \(Pufpaff, 2009\). This means that teachers need to begin with the skill of rhyme and proceed to alliteration, sentence segmentation, syllables, onset and rime, and then phonemes.](#) Stanovich, Cunningham, and Cramer (1984)

conducted one of the first studies to determine the difficulty of phonological and phonemic awareness tasks. They found rhyming tasks to be the easiest of phonemic awareness tasks for kindergarten students. Since phonemic awareness skills move along a continuum, as a child moves along the continuum, the skills increase in difficulty.

**Phonics.** As important as phonemic awareness, phonics is also a critical pillar of effective reading instruction. However, unlike phonemic awareness, a skill that focuses on receptive and expressive sounds, phonics focuses on the relationship between sounds and letters (Shanahan & North Central Regional Educational Lab, 2005). Teachers should teach students to recognize single phoneme-grapheme correspondences. Use known letter-sound correspondences such as simple VC words to begin blending and segmenting. Then transition to CVC words (NSW, 2009). Teaching students to blend phonemes in order throughout the word as well as segmenting a word into its phonemes to spell the word. The relationship is developed so that students can learn to decode words. Learning how to decode two, three, and four sound words in kindergarten is part of our daily learning. Ryder, Tunmer, and Greaney (2008) conducted a study with a group of young learners to test their abilities in phonemic awareness and decoding tasks. The study used explicit instruction and a trained staff member to teach both skills. For their study, they split the students into two groups: the control group and the intervention group with the intervention group receiving

instruction in phonemic awareness and decoding strategies, carried out over 24 weeks. The intervention group received a total of one hour and 20 minutes of teacher-aide directed small group instruction. This was in addition to their regular literacy block in the classroom. The control group was not given the extra time and was continuing their standard non-explicit instruction taught by their classroom teacher. The intervention group was directed with semi-scripted phonemic awareness and alphabet coding skills with a trained staff member. The results of their study showed that the intervention group scores surpassed the control group scores on a number of measures including phonemic awareness and decoding tasks. While both the intervention and the control group means were within one point of each other on the pretest, the mean of the intervention group was about 16 points higher than the mean of the control group on the posttest. Out of a possible 40 points, the mean of the pretest intervention group was 11.08, whereas the mean of the control group pretest was 9.92. While the pretests mean scores were not significantly different, the scores on the posttest were significant. The mean score on the posttest for the intervention group was 31.83 and the mean score for the control group was 15.42. This shows there was significance difference in the student outcomes when the teacher used explicit intervention lessons in phonemic awareness. The students were also given an assessment in pseudoword decoding. The total possible points for this measurement was 30. The mean score on the pretest for the intervention group was .67 and .83 for the

control group. The posttest results show a substantial change on this measure. On the posttest, the mean for the intervention group was 18.5 and the control group was 4.75 (Ryder, Tunmer, & Greaney, 2007). These results show there was a significant difference between the two groups. The results indicate that explicit instruction in phonemic awareness and decoding are critical in teaching [literacy to young children](#). The study is directly related to my study, as I will be following a scripted comprehensive literacy curriculum that addresses [phonemic awareness and phonics skills](#).

***Alphabet Knowledge.*** Another important aspect of teaching reading is [instruction in the area of alphabet knowledge](#). When children enter school for the first time, there is a lot of emphasis put on their ability to know the letters of the alphabet. However, many forget that each of the letters can make one or two sounds as part of the English language. [Thus, it](#) is important as a teacher of young children to teach alphabet knowledge [in an explicit and systematic way](#). Alphabet knowledge is an understanding of letter names and letter sounds (Goldberg, Lederberg, 2015) and is a building block [for](#) literacy instruction (Earle & Sayeski, 2017). Being able to identify a letter and its sound is an important skill that should be acquired in kindergarten, if not prior to entering kindergarten. [Research suggests that teachers need to teach the alphabet in an order. For example, letters such as m, s, f, r, and l are continuous sounds are easier to produce \(NSW, 2009\)](#). Earle and Sayeski (2017) found the possibility of using repeated reviews of

previously taught letters and sounds while incorporating the learning of new letters and sounds could be beneficial in a student's ability to retain more letter-sound correspondences. A study conducted by Piasta and Wagner (2010) was designed to determine if instruction would be effective on a child's ability to learn letter names and letter sounds when instruction was on letter names and sounds were both taught, only letter sounds were taught, or when numbers were taught (control). At the beginning of this study, preschool children could name fewer than eight uppercase letters. The study for the letter names and sounds and the letter sounds only was designed as an eight-week curriculum and was delivered to small groups of children as a pullout program. The alphabet lessons for both groups were similar in format and had 34 alphabet lessons. Similar to the alphabet instruction, the number instruction group received 34 lessons in number identification. The results of the study showed the letter name structure had little effect on learning letter names. The results also are consistent in showing the "children receiving combined letter name and sound instruction showed accelerated letter sound learning of CV and VC letters" (Piasta & Wagner, 2010, p. 337). CV letters are (B, D, J, K, P, T, V, Z), and VC letters are (F, L, M, N, R, S, X), in accordance with Treiman and colleagues (1997, 1998). These results are important for my study because [I will first teach the combined letter name and sound instruction and build upon individual letters sounds by introducing VC and CV words. "Phonics instruction is thought to contribute in helping students learn](#)

to read because it teaches them phonemic awareness and use of letter-sound relations to read and spell words” (Ehri, 2003, p. 5).

### **Multisensory Techniques**

In my study, I will be exploring the efficacy of using multisensory activities in order to improve phonics scores. The following are evidenced-based techniques that I plan to implement as a means to engage the students.

***Manipulatives.*** One of the many ways I plan to engage my students in their learning is through the use of manipulatives. For young children at the pre-operational stage of development (Piaget, date), there is a need to have something in their hands that they can move around and ‘play’ with. Pascal (2008) says “The physical manipulation of three-dimensional materials... builds children’s capacity for planning, remembering, and representing their experiences and understandings” (p. 19). Using tactile items to manipulate and move around with different tasks supports learners who may learn best while physically carrying out these small tasks instead of watching or listening to the teacher model whole group. There has been support of using manipulatives to help improve learning (Taylor, Ahlgrim-Delzell, and Flowers, 2010). Manipulative activities can also support the visual/spatial learner. For example, a teacher can use letter tiles to have students see and hear the letter name and sound. These types of activities engage the learner and could be effective in improving their ability to decode

[words](#). Manipulatives engage the hands-on tactile learners, however, there are other types of learners sitting in classrooms that may learn best a different way.

***Verbal/Kinesthetic learning.*** Kinesthetic learning is another way to involve students in multi-modal learning. It is very similar to tactile learning in the way students are physically involved in their learning. An experimental study [by Rule, Dockstader, & Stewart \(2006\) followed](#) students at-risk for reading failure in grades first through third. The design of the study used two experimental groups and one control group. All students received the same amount of time for instruction. The experimental groups were the verbal/kinesthetic group and the tactile/object group. Each of the groups completed phonological activities that related to their group need. For example, one of the activities in the verbal/kinesthetic group was a stepping stone game where the teacher called a word with an r-controlled vowel and the student was to step on the paper stone that represented the same r-controlled sound. The control group was students from a regular classroom that were being ‘pulled out’ for instruction and completed mostly written worksheets. The results of the study showed the two experimental groups showed greater gains from their pretest to their posttest than the control group. The gains were about 10 points higher on the *Phonological Awareness Test* for the experimental groups than the control group (Rule, Dockstader, & Stewart, 2006). Thus, the use [of](#) kinesthetic methods as a supplement to reinforce previously taught skills would be beneficial. While the

activities of this study and my own study are different, the effects of hands-on, large body movements could prove to be beneficial. Getting students up and moving through whole body tapping, song and dance is how I plan to incorporate kinesthetic learning into my study.

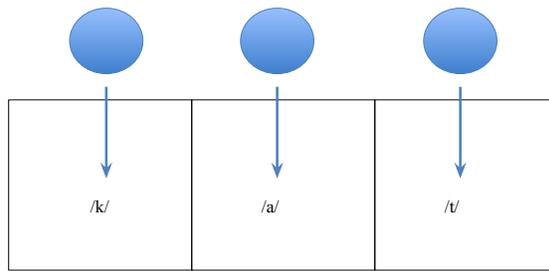
***Auditory learning.*** In addition to supporting the kinesthetic learners, my study will incorporate the use of repeated readings through songs and their lyrics.

As I am integrating song and dance, I will be supporting auditory learners.

Auditory learners understand best through listening. What better way to support their learning is through listening to songs that contain words that begin with the letter we are learning. Listening to songs will hopefully increase the amount of times they hear words that begin with a certain letter sound. Another aspect of the songs is the lyrics that accompany them. I plan to incorporate and post the lyrics in the classroom to each song we listen to. The students will be able to listen to the song, dance to the song, and also visually see the words in the song. I will be using the lyrics as a way to incorporate repeated readings, and help students identify words that begin with a certain letter and letter sound. For example, Biggs and colleagues (2008) have found that authentic repeated readings were helpful in improving reading levels in students who are struggling readers. Similarly, singing while simultaneously having the words posted has the potential to help students in learning how to read (Iwasaki, Rasinski, Yildirim, and Zimmerman, 2013). While my students may not be able to read the entire lyrics,

the ability to hear the words that begin with a certain sound and identify them in print will be an important skill to obtain. I also feel that it will be helpful to them as they learn to track print. There will hopefully be many benefits to using songs and repeated readings with lyrics that will help to engage my students in learning while they are having fun at the same time.

**Sound boxes.** One of the aspects of multisensory learning is that it can benefit different styles of learning with just one or two activities. One of the activities that I am including in my study is the use of [Elkonin or](#) sound boxes ([reference here](#)). Activities that use [Elkonin or](#) sound boxes are multi-modal and could benefit students who learn best through tactile learning and visual learning ([reference here](#)). Sound boxes help to practice foundational skills such as segmenting and blending words. Figure 2 displays an example of a sound box. An example of segmenting a word while using the boxes is displayed with manipulatives in figure 2. The word the student is segmenting is cat. Elkonin boxes have been effective in improving students' skills in phoneme segmentation, letter-sound correspondence, and spelling ([reference](#)).



*Figure 2. Segmenting and blending with sound boxes. Student is segmenting the word 'cat' using chips to represent phonemes. When done correctly, student will move one chip into the box (starting from the left) and say each sound in the word. Student will only say one sound per box. After student segments the word, they then drag their finger along the arrow and blend the sounds and say the word. This is one example of a way I will be using sound boxes with my students.*

Joseph (2002) conducted a study using word boxes to help students who were having difficulty with reading and spelling CVC words. The study was limited to three students with mild mental retardation. Each student was administered the baseline assessment where their scores ranged from 20% accuracy to 50% accuracy in reading and spelling words. After administering a baseline assessment, the author worked with the students individually and daily for 40 minutes while using manipulatives. The maintenance phase of his study showed tremendous results for all three students in their ability to read and spell CVC patterned words. By the end of the study all three students were averaging 95% accuracy or above in reading and spelling of CVC patterned words. These findings suggest that word boxes have a positive effect on word recognition and spelling [for children with mild mental challenges](#). However, this study was limited in the CVC words it chose. The CVC words that were used were all real words. Keesey & colleagues (2015) have questioned whether a student could have memorized how to spell words or the word in print. Therefore, Keesey, Konrad,

and Joseph (2015) created their own study that used nonsense words rather real words to eliminate the possibility of students learning the words by sight. [The authors](#) used similar materials for students to manipulate [with young typically-developing children in kindergarten](#). This study used the word box intervention individually in 20-minute sessions two to three days a week. The intervention was designed using the “Model-Lead-Test” format to teach each of the three skills: phoneme segmentation, letter-sound correspondence, and spelling. The results of the study showed that the use of word boxes [was](#) effective for all three students. Scores quickly improved [with](#) all three students meeting mastery on all three skills. While Joseph ([2015](#)) and Keesey and colleagues ([2015](#)) studies were limited in the number of students, my study will include an entire class of students ([N = 18](#)). [In addition](#), the use of manipulatives and visual-tactile learning will be present in my study. The use of multisensory activities to help young learners develop the foundational skills necessary to be a successful reader is my goal for this research study.

### **Conclusion**

[Literacy](#) instruction needs to reach all students in the classroom. Dr. Orton’s term “[multisensory](#)” ([1936](#)) has reappeared in classrooms today in [an](#) effort to support [children at-risk in reading achievement](#). In order for this to occur, the use of multisensory instruction in phonics that is explicit and systematic in nature should be evident in daily lessons. Explicit and systematic instruction paired with the gradual release [of](#) responsibility [model](#) is important [for students’](#)

quest of skill mastery. Through the use of multisensory activities such as manipulatives, movement, [singing](#), and Elkonin boxes, there is an effort to reach all students' needs. Each multisensory task will hopefully be successful in teaching my students the foundational skills they need to become a successful reader. With this in mind, my research will aim to answer the following question:

What are the effects on [reading achievement](#) when I include [empirically-based](#) multisensory literacy activities and techniques [in typically-developing children at kindergarten?](#)

## RESEARCH DESIGN AND METHODOLOGY

### Goals

Through my years as a teacher, I have seen a distinct push for students to become readers by the end of third grade. The students in kindergarten have a range of varying abilities and knowledge. This range consists of a few students who already know how to read, most not knowing how to read at all, and several unable to identify letters. My goal for students exiting kindergarten is to have all students reading age appropriate text with fluency. Reading on grade level by the end of third grade is a district initiative that I feel is very important in a child's life. I hope that my students begin to learn to read as well as share a love for reading. My goal for my students is to increase literacy scores to improve their reading. To have students reading on grade level at the end of kindergarten will help them in beginning their journey to successfully read on grade level by the end of third grade. I collected data through multiple modalities including [spell out Dynamic Indicators of Basic Early Literacy Skills \(DIBELS\)](#) progress monitoring, student surveys, and student work [samples](#).

### Setting

This study was conducted in a suburban elementary school located in Northeastern Pennsylvania. This school has 336 students in kindergarten through fifth grades. The student body consists of 66% Caucasian, 15% Hispanic or Latino, 7% African American, 7% Asian, and 5% identify with two or more races.

Twenty-seven percent of the student body is considered economically disadvantaged. Ten percent of students receive special education services and [two](#) percent are English Language Learners.

The kindergarten classroom in which this research study took place is large with four oversized windows that allow for ample sunlight. The floor is tiled with two large carpets in both the front and rear of the classroom. There are four large rectangular tables and one circular table, all spaciouly located in the middle of the classroom. In the back corner of the classroom is a kidney-shaped table used for small group instruction.

### **Participants**

The [students who](#) participated in my research [study consisted of 18 kindergarteners](#). 68 percent [being](#) girls and 32 percent [boys](#). The ethnic breakdown of my class is 53 percent Caucasian, 32 percent Hispanic/Latino, 11 percent Multiracial, and 4 percent Asian. Seven out of [18](#) students are considered economically disadvantaged. There is one student who has an Individualized Education Plan (IEP), this student's IEP is a speech and language only IEP.

### **Procedures**

Before I began my study, I had to seek consent from the parents of my students (Appendix C). In addition to submitting my proposal to the Human Subjects Internal Review Board (HSIRB) (Appendix A), I obtained approval from

my building principal (Appendix B). Once approval was received, I was able to begin my research.

In the first week of school, I sent home my parental consent forms. In the first month of school, including the first three weeks when the study had not yet begun, I established routines and expectations of what the daily phonics lesson should look like. As the study progressed, I followed the same structures and routines for each [literacy](#) lesson. I prepared a calendar identifying when a new multisensory activity or technique would be introduced and when each survey would be given. The timing of each activity and administering of surveys was modified as the study went on based on school activities, an unexpected snow day, and attendance of students. By the end of my study, the [literacy](#) lesson consisted of phonemic awareness activities and phonics word work activities completed in a teacher-directed 15-20 minute lesson.

After the daily [literacy](#) lesson, students were frequently asked to complete an independent activity related to what they learned in the phonics lesson. These activities consisted of picture sorts, review of beginning sounds, and decodable sentences with words to sound out. [These are included as student work samples.](#)

### **Data Gathering Methods**

[Dynamic Indicators of Basic Early Literacy Skills](#) (DIBELS)

DIBELS has [been selected by my school district to use as the general measurement tool to collect data for benchmark and outcomes.](#) I collected data

from my students' DIBELS assessments on a weekly, bi-weekly, and monthly basis, in the areas of first sound fluency (FSF), letter naming fluency (LNF), phoneme segmentation fluency (PSF). I was able to track individual progress throughout the study to see how multisensory activities were helping or hindering their growth. I collected data on every student throughout the research study. I also collected data more frequently on students who scored below or well below on beginning of year benchmarks on DIBELS. This allowed me to see how my lowest students were performing on a weekly or bi-weekly basis. Students who were considered at grade level on beginning of year benchmarks were progress monitored once a month to ensure that they were also making appropriate gains. Using DIBELS also allowed me to determine if there were any correlations between their assessments and what students shared in their surveys. After administering DIBELS assessments, I was able to look at the data and determine where students were still struggling in identifying sounds in words. In addition to DIBELS, I used a phonics and decoding survey to help determine the specific skills of my struggling learners. The use of this survey helped determine where to begin my intervention instruction with my children who were at-risk.

#### **Student Work Samples**

I also collected student work samples during their independent work time. I was able to determine who understood key concepts and which students needed more practice by reviewing each of the student's work samples (e.g., Ana and

[Megan needing more practice in phoneme-grapheme correspondence](#)). I was able to compare student work with assessment data and observations to determine which students were applying skills to their learning. This allowed me to determine areas of weakness for students and identify students who were mastering skills.

### **Student Survey**

In addition to [obtaining](#) DIBELS [scores](#) and collecting student work [samples](#), I also created a student survey (Appendix D). The survey was used to determine [student perceptions of](#) reading [both at home and school](#), and [perceptions of](#) how [students felt](#) about [a variety of](#) multisensory activities that we were using in our classroom. I had my students complete each survey about one week after a new multisensory technique was introduced. This gave students plenty of time to familiarize themselves with the new task. Six surveys were given throughout the research study. The last survey was given to students at the end of the study to measure their feelings toward all of the multisensory activities. I was able to determine which students like certain activities and which did not. This was most valuable to me because I was able to take student preferences and use them more often in teaching whole group as well as teaching individual students. I was able to adapt my teaching to fit the needs and interests of the learners in my classroom.

### **TRUSTWORTHINESS STATEMENT**

In order to ensure the validity and trustworthiness of this study, I followed certain ethical research guidelines. I began by obtaining approval for this study from Moravian College's Human Subjects Internal Review Board (HSIRB) (Appendix A). In order to obtain approval, I summarized for the board my objectives, and the research design including how I was going to collect data and the procedures I was going to follow. In addition to this, I provided the signed principal consent form (Appendix B) and consent forms from the parent or guardian of the students who were participating in my study (Appendix C). Additionally, I provided the board with the student survey that was going to be used throughout the study to gain insight on student learning preferences (Appendix D). Additionally, examples of the progress monitoring assessments were provided. McNiff (2017) states to "Promise your participants that you will protect their interests and maintain confidentiality for those who wish it (p. 126). To ensure confidentiality in my study, participants were given a pseudonym and were not be identified by name. Parents or guardians also had the option of removing their child from the study at any time without penalty. These promises are clearly stated in the parent consent form. Furthermore, student work and data collected was stored in a secured location in which I am the only one that can access. Upon completion of this study, all student work and data will be destroyed.

After obtaining necessary consent forms and permissions, I began to implement my study and collect and analyze the data. My study lasted for about seven weeks. This period of time was sufficient in determining if student scores increase in foundational literacy skills. To validate this, data was obtained through frequent student surveys, student work, and student performance on the Dynamic Indicators of Basic Early Literacy Skills (DIBELS). Student surveys were administered throughout the survey to allow students to share their opinions on activities and help me identify the way in which each individual learns best. Assessing student performance using DIBELS provided me with data that helped me to monitor student obtainment of foundational literacy skills. This data was helpful in determining what skills students needed to practice and allowed me to adjust and differentiate my teaching. Using this data allowed me to engage in continuous, ongoing reflective planning where I could adjust the plan of action in my study, if necessary (Hendricks, 2017). Collecting student work also showed student progress toward foundational literacy skills. Student work was beneficial to my study because it provided accurate data on student goals when working independently on certain literacy skills. “Collecting multiple sources of data is a necessary step in action research” (Hendricks, 2017, p. 65) To triangulate data and increase validity I collected data from all three sources including student surveys, DIBELS progress monitoring, and student work.

I remaineded open to unexpected research findings and multiple points of view as I gathereded and analyzedd the data. I had the opportunity to work with a supporting committee, I engagedd in support groups with fellow peers and supporting professors to improve and/or enhance my research. I remaineded open to criticism from professors whose job it is to help you “question your own assumptions” (McNiff, 2017, p. 210). I looked to peers for support through the process and also others that can providedd adequate feedback and challengedd my thinking. Furthermore, I was able to seek out advice and support from fellow researchers, colleagues, and professors whom I felt providedd me meaningful advice and suggestions and ensuredd me that my study will have the necessary validity and credibility.

## MY STORY

The topic of my research study was an easy choice. The school district of which I am employed recently adopted a new reading curriculum. This new curriculum is rigorous for students in all grade levels, especially kindergarten because it includes standards that may have been taught in first grade many years ago. I had to get used to teaching at a sufficient pace and acknowledging that I was not going to be able to teach everything in the manual because there are time restrictions and high fidelity of treatment built into the program. Thus, I worried that I may not be able to give each student a chance to answer a question or share their opinion each day. This new curriculum came with a lot of pressure for students and myself. I needed to have 90 percent or more of my students reading at grade level by the end of the school year. I attended countless school district trainings on how children learn to read. I was provided numerous lessons and activities to take back to my classroom and use with my students. As Ming & Dukes (2010) state, all students should have the opportunity to “learn language patterns and the phonological code through phonemic awareness and phonics instruction, gain exposure to print, and become immersed in reading through fluency, vocabulary, and comprehension training” (Ming and Dukes, 2010, p 24). It was time to put what I learned into my teaching this school year.

### **Meet the Class**

I was ready to meet the goal of having 90 percent or more of my students reading on grade level. The first day of school was filled with so many emotions for both teacher and students. When this class of 19 students lined up against the wall on the first day it was both exciting and nerve-wracking. These are the students that are hopefully going to be part of my study!

The first few weeks of kindergarten are filled with activities that help the children get to know the school, teacher, each other, and most importantly the routines of each day. This includes the routines of our daily literacy block that was going to be so important in our quest for reaching 90 percent proficiency in reading. This seemed like a great group of students that were eager to learn and excited to finally be in school!

It was not until about the third week of school that I spoke with my class about being part of my study. At this point, I had received consent from 18 parents with one parent choosing not to be a part of the study. I was thrilled that almost everyone was giving me permission to have his or her child part of the study. I wanted to communicate to my students, in the easiest way possible, that they were going to be part of my study. When I introduced what my study would be and what kinds of things they would be doing, every student was excited! They had many questions about my study. The most popular question was “What is a study?” I explained this in the easiest way possible to these four and five-year

olds. They all sat on the carpet with smiles on their faces and giddiness to be part of a “study”!

### **Beginning Data**

During the second week of school, I was able to collect data on each student using the DIBELS Next Beginning of Year benchmark assessment. With this data I was able to identify who may need additional support in the classroom.

*Table 3.1*

*DIBELS Beginning of Year Benchmark Scores*

<b>DIBELS Next</b>		
	<i>FSF</i>	<i>LNF</i>
<b>Name</b>	<b>Goal 10</b>	<b>Score</b>
<b>Ana</b>	0	4
<b>Sean</b>	4	3
<b>Rachel</b>	2	9
<b>Jess</b>	0	15
<b>Peter</b>	0	17
<b>Amber</b>	14	4
<b>Amanda</b>	15	12
<b>Ken</b>	12	16
<b>Ben</b>	6	23
<b>Megan</b>	25	5
<b>Lori</b>	18	17
<b>Carl</b>	18	28
<b>Alex</b>	17	31
<b>Bri</b>	23	31
<b>Andrea</b>	17	38
<b>Emily</b>	30	29
<b>Reese</b>	34	51
<b>Emma</b>	38	51

At this time, the data shows there were three students (red), Ana, Sean, and Rachel, who need intense instruction (Tier 3), three students (yellow), Jess, Peter, Amber, who need strategic support (Tier 2), five students (green), Amanda, Ken, Ben, Megan, and Lori, who are likely to need core support (Tier 1), and seven students (blue), Carl, Alex, Bri, Andrea, Emily, Reese, and Emma, who are likely to need core or beyond support (Tier 1). This data also concludes, about 72 percent of my students are performing at grade-level at the beginning of the year.

This is great news! However, [the data shows that these are the](#) most students I have ever had that are coming into kindergarten not meeting grade-level standards. Hopefully, with the right amount of support, I can get all or most of these lower performing students showing progress toward reaching our end of the year goal as well as maintaining the students who are at or above benchmark.

#### **Recess All Day**

As we began the study, I started to notice a few things about the students in this class. A few of the students were struggling to raise their hand and wait to be called upon to share their answer and one or two that still were not raising their hand at all to share their thought or answer. At this point, I was getting frustrated because we had worked hard for three weeks about establishing rules and routines for our classroom and [a few students still needed guidance in this area](#). The other thing that I noticed was [that](#) any time we spent on the carpet there was a lot of moaning and groaning coming from the students. In fact, much of time when

there was work to be done, (e.g., listening to stories, watching short videos) students demonstrated behaviors that indicated that they were not pleased with the instruction. Even during centers with play\_doh and blocks, students were vocalizing complaints about being bored and their unhappiness toward the activities. It seemed like the only time they did not complain was during recess. It was like they thought they were going to have recess all day long during school.

This dislike and discontent was really hard for me to grasp and understand. I thought that activities that were hands-on (e.g. play doh, blocks) would be engaging for them. I began to compare this class with the class from the previous year. We completed the same curriculum the year before and I could never remember a time when those students complained. In fact, I remembered my previous class cheering when it was time to learn and complete our work. I began to reflect on the needs of this particular group of children. Are these assignments too hard or too boring for these particular children? Since I could not change the content, I tried to think of ways to make the activities I assigned more interesting and fun for this group of children. This included things like play\_doh, blocks, and cubes to make letters out of. This group of children still seemed to lack interest in the activities that I planned. I could not help but think about my study and how this was going to affect it. How was I going to get my class to take an interest in literacy and reading if they did not even want to enjoy these hands-on activities that I planned? I decided to think back to my previous class' interests. They were

more engaged than ever when we would listen to the letter song. I decided to introduce song/dance as the first multisensory activity.

### **Let's Dance**

By the middle of September, three weeks into the school year, I was set to introduce the first multisensory activity to my students. This activity was songs and dances for each letter. The songs and dances are from our core curriculum, McGraw-Hill (2014). As per the research, movement activities enhance learning new words (reference here). Two days prior to watching the video, I spoke with the class about ending our previous brain break sessions and including the letter/song videos instead. I asked the class if they were excited to be learning new dances and songs that go along with learning new letters. By a show of hands, most of the class shared that they were not excited, with a few saying they were excited. Once again, I was worried about my choice of activities.

On the first day of the study, I introduced the song title “My Map” and how it would work. I chose this particular song because it correlated to the letter M and the sound we were learning about. Before watching the video, I explained why this video related to their learning. We then watched the instructional video, learned the dance together, and then we did the dance while watching the second video. The class seemed quite unsure of what was going to happen prior to watching the videos. After watching both videos and completing the dance, by a

[show of hands](#), 14 students shared they liked the video, three students shared they did not like it, and one student was absent.

Fast forward to the following week where we were learning about the letter A. I received the following question, “When are we going to watch the video for letter A?” Immediately following that question, other students chimed in asking the same question and others!

“We want to see the A video!”

“Can we watch the video for A?”

“I want to see the A!”

I was relieved to hear they wanted to watch the video for the newest letter! I would slowly incorporate listening for words that had the letter sound into the video, even if it meant playing the video more than once (the students did not seem to mind this).

### **What’s a Survey?**

[The following week](#), it was time to give the students the first survey of my study. I was so excited to give the survey to my students because I desperately wanted their individual opinions on our new activity.

I talked to my students about taking their first survey for my study. They were very eager to complete it and help me out in my learning. I had to answer the popular question of “What is a survey?” first and foremost because this was an unusual word for a kindergartener. After explaining what they would be doing, I

followed my step-by-step directions for giving the survey. As a kindergarten teacher, you become accustomed to taking things slow and giving one direction at a time, especially for tasks students have not completed before. I took the following steps for this survey as well as all other surveys.

1. Write your name at the top and stop.
2. “I am going to read a sentence. You will circle *ONE* picture that shows how you feel about the sentence. If you like or agree with the sentence, circle the thumbs up. If you are not sure, circle the thumb in the middle. If you do not like or agree with the sentence, circle the thumbs down. You may *only* circle one.”
3. Read sentence one. I then gave an example for this. “If you do like to read and look at books at home, circle the thumbs up. If you sometimes do, sometimes do not, circle the thumb in the middle, if you do not like to read and look at books at home, circle the thumbs down.”
4. Repeated step three for the other two statements.

As I walked around to collect their surveys, I noticed that a lot of the students had circled more than one answer for each question. Ten students out of

18 did not follow my explicit directions. I had to then sit with each of those 10 students and ask them the same questions again. This took extra time that I had not planned on. Some students were even confused as they kept circling the same answer for each question by repeatedly circling the first thumbs up. Therefore, they only answered the first question. I quickly became frustrated because I had thought my directions were clear. After a stressful first survey, I was weary about giving another. Hopefully, it would go better than the first. Explicit instruction leaves little discretion for the learner. It is direct instruction that teaches a skill or rules and allows time for practice in applying the new skill. Researchers have recommended the use of explicit instruction in teaching students reading strategies and skills (Reutzel, Child, Jones, & Clark, 2014). Perhaps my students needed more practice and repetitions at completing a survey. It is my hope that as I continue to use explicit instruction to teach the rules of the survey and students have multiple repetitions completing them, the results of using this type of instruction will begin to show.

### **Keep it Moving**

It was the last week of September and time to introduce another movement technique that would hopefully help them in their learning. Our newest multisensory technique for week two was using gestures. Gestures would help us attach a movement to the letter and sound we are learning. For example, in week two of our curriculum we learn the letter A and the short /a/ sound. The gesture

Lindsay Jordan 4/20/2019 3:15 PM

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**Deleted:** it was

for short a, is pretending to bite into an apple. This motion forces students to position their mouth correctly and repeatedly make the sound. Using gestures can help the children when they are sounding out and spelling words. The gesture also correlates to the picture that is on each letter card.

Over the course of the study, I noticed that one student, I will call her Rachel, had been struggling with identifying letters and sounds. During our core small groups, we always warm up with a review of previously taught letters and sounds. Rachel seems to latch on to the use of gestures to help her remember letter sounds. When naming the letter sounds, Rachel used the gesture that goes along with the sound. Thus, as the study progressed, I decided to use more gestures to help students remember their letters. As soon as I did the gesture, students would repeat and quickly remember the letter they associated with the gesture. Students did not seem to have favorable or unfavorable opinions of using gestures. It was more apparent who used gestures from the teacher perspective because you could see some students doing the motions for the gestures and some not. It seemed like the students who struggled with identification of letters and sounds seemed to use the gestures the most.

### **Survey: Round Two**

After using gestures for a couple weeks, it was time to give the second survey. I followed the same directions as the previous survey and it went a lot smoother. Most students were able to follow my directions and seemed to be more comfortable with the process of completing a survey. [This was the second time completing a survey and students were more familiar on how to complete. The use of repetitions was beneficial to them.](#) This time, only three students had trouble following the directions. These three students are consistently showing the inability to follow directions in the daily classroom setting [as well](#). It felt good to know that my explicit instruction worked this time, and most students were successful in completing the survey.

### **Differentiation is a Must**

It was apparent from the onset, that there would be students in my class whom needed more support than others. The DIBELS benchmark assessment administered to students at the beginning of the year was helpful in determining which students would be part of the Tier 2 and Tier 3 groups, needing the extra literacy support. After using the DIBELS benchmark as a universal screener, I used a phonics and decoding survey [from McGraw-Hill \(2014\)](#) (Appendix E). This survey, taken from McGraw-Hill, our core curriculum, is a continuum of skills that are built upon each other. This helped to specifically determine which skills my students had already mastered and what skills they were still struggling

with. This also allowed me to pinpoint my instruction to specific skills needed for children who scored the lowest on this particular measure.

This skill specific instruction occurred during our **What I Need (WIN)**, or Response to Intervention and Instruction part of our day. This instruction began during the first week in October, six weeks into the research study. Only the students in Tier two and three would receive this intensive support. During WIN time, the Tier three students, Ana, Sean, and Rachel received intense daily instruction specifically on their lowest skill. The instruction would be in a small group setting and continue to be explicit, systematic, and multisensory. Tier two students, Jess, Peter, and Amber were instructed in a small group at least three times a week for strategic instruction that was systematic, explicit, and multisensory on their lowest skill. During WIN time, students considered Tier one completed hands-on, engaging centers that are reinforcing concepts learned in our core instruction.

### **Are they learning?**

It was time to take a look at student work samples to get a better understanding of how my students were applying the new skills we were learning. Student work is completed independently during core instruction time. Students were given instructions prior to completing the task. Modeling was done for the students on each new activity so that there was no confusion as to how to complete the activity. The first activity I gathered data from was a beginning

sounds picture sort. For this sort, students needed to distinguish /p/ from /s/ and correctly cut and paste the picture under the letter that stands for the first sound they hear. The results from this activity showed most of the students can distinguish and identify the beginning sounds of /p/ and /s/. [Up to this point, these were the letters the students had explicitly learned.](#) No student got more than one picture incorrect. Five students: Emily, Lori, Sean, Ana, and Rachel all got one picture incorrect. It was surprising to see Lori and Emily received one wrong and it would be something I would need to keep my eye on to see if they are having a hard time hearing beginning sounds in words. The other three students are all the lowest performing students and definitely need continued practice in beginning sounds.

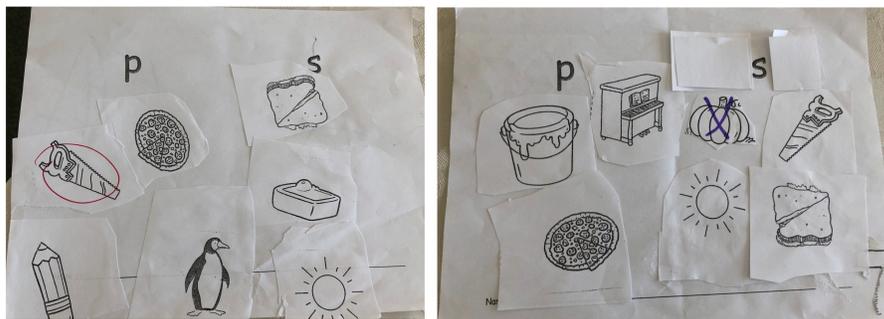


Figure 3.1. Example of student work in beginning sound sort

The second assignment was a phonics review of all four letters and sounds we had learned thus far, which were m, a, p, s. The task was to say the name of the picture and write the letter that begins each picture name. While two of my strategic students did not complete the assignment, there were only two students that had errors. Ana was still struggling to hear beginning sound /p/. Megan was beginning to show some confusion with her letters and sounds (i. e., p and a). This was an important piece of information for me because it would become apparent that Megan was beginning to confuse most of her letters and sounds in the coming weeks. She was accurately giving the sound (phonemic awareness);

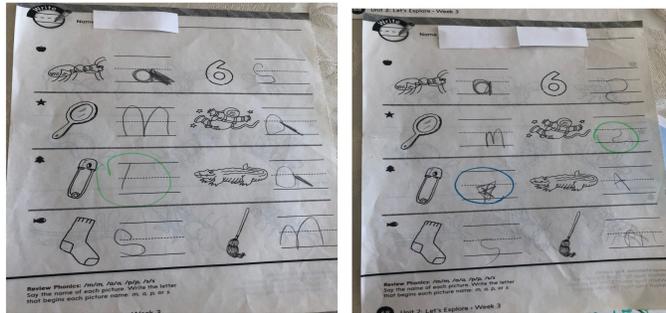


Figure 3.2. Student work in phonics review

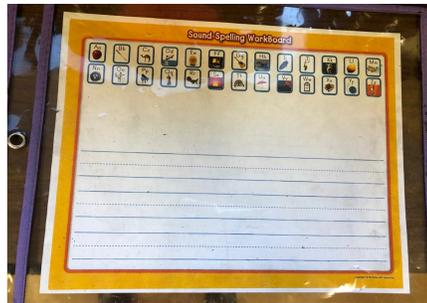
however, she was struggling to attach the correct letter to the sound (phonics).

At this point in the study, the results of the measurements were encouraging. Most students who were proficient were continuing to apply their new skills and knowledge to tasks such as in the word sorts. Students who

performed lower on beginning sound activities, also showed difficulty on the word sorts. I continued to remain confident that the next couple of multisensory activities could support the students as they practiced these new skills.

### **Wipe Off Boards**

The next activity I included was wipe off boards. This is similar to a whiteboard and serves the same purpose; however, the whiteboards used in my study relate to our core curriculum. There were a lot of rules that needed to be established with the use of these boards, some which students did not want to hear (ex. – drawing pictures on board). Students were thrilled to have the ability to use a whiteboard ‘marker’ while using the boards. We also had to establish rules with the markers as students thought they looked similar to regular markers but could only be used with our wipe off boards.



*Figure 3.3. Example of Student Wipe Off Board*

Students had favorable opinions according to the results of the third survey. Thirteen out of 18 students shared that they enjoyed using the wipe off

boards and that wipe off boards help them write letters and spell words. Three students shared they sometimes did and sometimes did not like to use them. Two students shared they did not like to use wipe off boards. I questioned both students about their answers. Ana shared that she did not like them because “they are messy”. Emma shared that she “doesn’t know” why she does not like them. This information was interesting to learn about Ana. I began to wonder if her [challenges](#) in learning [new letters](#) factored in to why she circled she did not like the activity. She shared previously that she liked using both gestures and dances to help her learn. I then tried to incorporate more gestures with her in small group learning as well as in whole group.

### **Student Perceptions**

[As](#) part of my survey, I was not only questioning my students about our new learning techniques but I also included two questions about how they feel about reading books. I included the same two statements on each survey. The first statement, “I like to read and look at books at home.” I added the “at home” part because during the first survey students were confused. I continued to include the words “at home” in all of the remaining surveys. The second statement was “I like to read and look at books in school.” I thought by getting student opinion on reading I could determine if there were correlations between their thoughts on reading and their performance in reading. I also wanted to know specifically how

they were feeling about reading at home and reading at school and if there was a difference depending on where they were attempting to read.

Table 3.2

Student Responses About Reading Books at Home and In School

Student Responses:			
	<i>I like to read and look at books at home.</i>	<i>I like to read and look at books in school.</i>	<i>Student comments</i>
<b>Alex</b>	No	No	"I don't know how to read."
<b>Andrea</b>	No	Yes	"At home it doesn't make me feel like I'm learning and at school it does."
<b>Lori</b>	Yes	No	When talking about reading books at school, she shared "it is hard for me"
<b>Bri</b>	No	Yes	When talking about books at school, she shared "there are ones that I like at school"
<b>Amber</b>	Yes	No	Amber shared she is "scared people are going to look at her when I am reading".
<b>Sean</b>	Sometimes	Yes	"I like books. Books are easier at school."
<b>Carl</b>	Yes	Sometimes	When talking about reading books at school, Carl shared he sometimes does and sometimes doesn't "because I'm learning how to read".
<b>Ken</b>	Sometimes	Yes	Ken shared that books at home are "boring for me". "So many interesting books" when talking about books at school.

It was interesting to see the differing responses from students. Students such as Sean, who did not score well on beginning of year benchmarks but has been completing his work accurately, has a favorable opinion of books, especially books at school. Amber's response was particularly important to me. I had no idea that she was feeling this way about reading in front of her peers. I did not think kindergarteners could develop self-consciousness about reading aloud. In my classroom, we never have individuals read aloud unless they volunteer. We do a lot of whole group reading. This caused me to change the way I have students read the decodable readers we practice throughout the week. It was nice to know that students like Andrea, Bri, Sean, and Ken all have favorable opinions about reading. Aside from Sean, the rest of these students are receiving only core support and still showing positive growth in literacy. It was also insightful for me to hear the thoughts of Alex and Lori. I considered these students some of the highest in my class and students who are easily grasping every new skill that was being taught. I would have thought that since everything was easy for them that they would have a favorable opinion about reading. It was quite the contrary to hear that both were not confident in their abilities as a reader. Both students have older siblings that could play a factor into their thoughts about what reading really means and could be comparing themselves to their older siblings' abilities. As the study and school year progressed, I needed to make sure that these students

develop a confidence in their abilities and a realistic picture about what kindergarten reading looks and sounds like.

### Mid-Study Data

About halfway through the research study, I was able to collect data through DIBELS progress monitoring on each participant. I wanted to monitor student growth and progress toward middle of year goals.

Table 3.3

#### *Mid-Study Data And Growth*

DIBELS Next	Mid-Study Data			Growth
	<i>FSF</i>	<i>LNF</i>	<i>FSF</i>	
Name	Goal 10			
<b>Ana</b>	0	4	36	+36
<b>Sean</b>	4	3	42	+38
<b>Rachel</b>	2	9	26	+24
<b>Jess</b>	0	15	28	+28
<b>Peter</b>	0	17	39	+39
<b>Amber</b>	14	4	37	+23
<b>Amanda</b>	15	12	21	+6
<b>Ken</b>	12	16	41	+29
<b>Ben</b>	6	23	36	+30
<b>Megan</b>	25	5	46	+21
<b>Lori</b>	18	17	24	+6
<b>Carl</b>	18	28	36	+18
<b>Alex</b>	17	31	44	+27
<b>Bri</b>	23	31	46	+23
<b>Andrea</b>	17	38	37	+20
<b>Emily</b>	30	29	36	+6
<b>Reese</b>	34	51	38	+4
<b>Emma</b>	38	51	54	+16

From the data gathered, all students have shown positive growth. I was ecstatic that my lowest students [in early literacy skills](#) were showing such significant growth. Students were already producing scores that matched or [were better than](#) the middle of the year benchmark. I was, however, concerned with Amanda's progress. She did show growth since the beginning of the year, but it was minimal compared to others at her level. During the assessment she seemed very unsure of her letter sounds and moved at a slow pace, pausing to think after each word that was given. I began to include Amanda in a small group intervention to work on beginning sounds with her in order for her to gain fluency in producing first sounds.

### **Sounds Boxes**

The next multisensory activity that I introduced to my students was how to use sound boxes and manipulatives. This technique was going to help us learn how to sound out and spell words. The children were thrilled to be using manipulatives again. We sometimes change the manipulatives from gems to connecting cubes, anything to pique their interest. I had to make sure that my instructions for using sound boxes were explicit and modeled appropriately using Pearson's gradual release of responsibility model ([1983](#)). It was important for students to understand the purpose for using sound boxes and how each time they moved a cube it would stand for only *one* sound.

This activity would be one that is extremely important for the students to enjoy, as we completed the activity many times throughout the each week. After explicit instruction and ample repetitions to practice this activity, the survey was given to students to get their opinions on using sounds boxes. Fourteen out of 18 students shared that they liked to use gems/squares to help them hear the sounds in words. Three students said they have mixed feelings about using sound boxes. One student, Sean, shared that he does not like to use sound boxes to help him because his “hands get tired”. Sean’s ability to hear sounds has definitely improved since the beginning of the school year, so perhaps this is an activity that I will not continue to do with Sean.

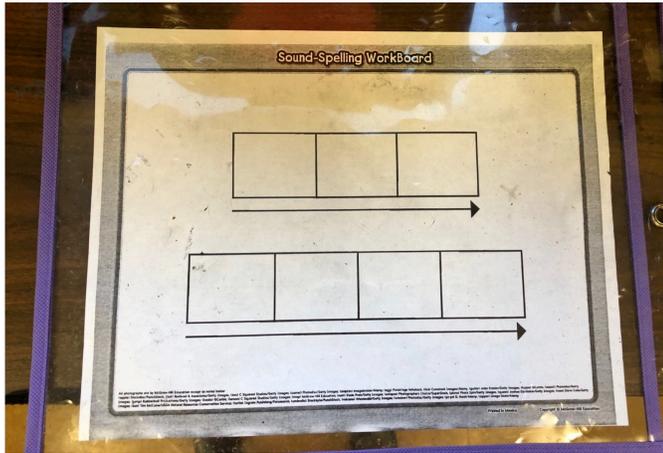


Figure 3.4. Example of Sound Boxes

### **Check-in**

It was time to check-in with the students as we continued to progress in our learning. I was curious to see how students performed on the next independent activity that was an ending sound picture sort. Up to this point, we had been working tirelessly to hear all the sounds in CVC words. It was most important for me to make sure the students were aware that consonants can come at the beginning of the word, but can also come at the end of a word too. The ending sound sort consisted of pictures that the students needed to cut and paste under the correct lowercase letter that stands for the sound at the end of the word. The sounds they were listening for were /t/ and /p/. Like everything in kindergarten, the directions and pictures were explicitly taught and modeled. The results of the activity were telling. Ana and Sean had three pictures incorrect. Megan and Ben had two pictures incorrect. Amber, Rachel, and Ken had one picture incorrect. All students who had pictures incorrect, except for Ken, were students who [also demonstrated lower scores on beginning sound activities and beginning of year DIBELS scores.](#)

### **Sky Writing**

A new multisensory technique was introduced to the students to help them spell sight words and sometimes CVC words. This new technique was called sky writing. When I introduced sky writing for the first time, I made sure to establish a routine with the students. We would always use the same routine for each sight

word we learned, which was to say the word, spell the word, and write the word in the “sky”. This consisted of using our imagination to see the sky and use our pointer finger to write the letters. After students were familiar with the routine, the survey was given to see how they liked or did not like the activity. One student did not participate in the survey. Out of 17 students, only six shared that they liked the activity. Four students shared they sometimes like the activity and sometimes do not. Six students shared they do not like the activity. Five out of the six students who said they had mixed feelings about the activity, shared their “arm gets tired” while doing the activity. The six students who said they did not like the sky writing activity shared their feelings with me as to why they did not like the activity. Ana shared it was “hard to write letters I don’t know”. Sean and Alex shared they “would rather use wipe off boards” because they “can see the word”. Ken also shared that “I can’t see the words and I forget”. Ben said “I don’t know how to make letters we haven’t learned”. Emma said her “arm hurts” when she does the activity.

As a teacher, doing activities like sky writing, I failed to think of the students that do not know how to form all their letters. Having my students share their opinions with me helped me to realize that sky writing was extremely hard for them because we have not covered all the letters and they were unsure how to even make the letter in the sight word. This caused me to encourage my students

to try their best when making unknown letters. It was obvious that this was not their favorite activity and easily frustrated many students.

### **Decodable Sentences**

It was time to push my students a little further with their learning to see if they could apply skills we were learning into reading text. The next piece of work I asked my students to complete was to read two different sentences that contained sight words and decodable words, in which the letters have been previously taught to the students. After reading the sentences, they were to draw a picture that matched the sentence. At this point, it was the beginning of November and many students struggled with drawing pictures and adding appropriate details to their pictures. Because many of their pictures were hard to understand, I asked each student to read me both sentences. Half of the class had no errors when reading the sentences. Eight students made one error when reading the word “Pat” or “mat”. Ana had many errors while reading. For the word “Pat” she made up the word “ballet”. When I asked her to sound out the word, she said the word “sat”. While reading the second sentence, she said the correct sounds in “mat” but had trouble blending the word and said “sat”.

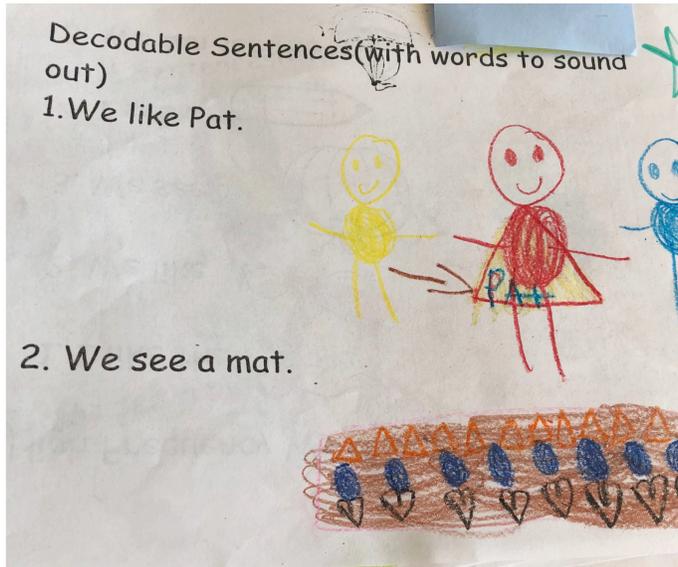


Figure 3.5 Example of student work on decodable sentences.

### Final Survey

Now that all of the multisensory techniques had been introduced, it was time to administer the final survey. (I did not have time during the study to introduce the use of paint/shaving cream to help teach letters and words. This question would be skipped on the final survey.) Students were ready to take the last survey and share their thoughts with me one last time. I was looking forward to seeing their thoughts and opinions now that we had learned all of the activities. I was interested to see which activities were still favorites, new favorites, and any they did not like.

Table 3.4

<b>Final Survey Results</b>			
<i>Name of Activity</i>	# of students that liked the activity	# of students who sometimes liked activity/sometimes did not like the activity	# of students who did not like the activity
<i>Letter songs/dances</i>	16	0	2
<i>Gestures</i>	14	4	0
<i>Sound boxes</i>	14	3	1
<i>Wipe off boards</i>	16	0	2
<i>Sky writing</i>	12	0	6

It was time to check student progress compared to their middle of study data. I wanted to make sure students were still maintaining their scores and progressing toward benchmark goals. Students were assessed at the end of November. The middle of the year benchmark is given at the beginning of January and the goal for FSF is 30.

## **DATA ANALYSIS**

Throughout my study, I collected data through a variety of methods in order to effectively monitor my students' progress toward meeting literacy goals. In order to accurately show student growth toward learning how to read and reaching our goals, students completed two DIBELS benchmarks assessments, one at the beginning of the school year and the other in January. Additionally, students were monitored for progress using DIBELS progress monitoring assessments weekly, bi-weekly, and monthly. Using DIBELS to measure student progress and growth was paired with students completing assignments in class. Students were asked to complete beginning sound sorts, ending sound sorts, a phonics review, and reading decodable sentences. Lastly, students were also asked to complete surveys to share their thoughts and opinions toward reading at home, at school, and their feelings toward new multisensory techniques used to help them begin to read.

### **DIBELS Data**

Student data was gathered throughout the study in first sound fluency. DIBELS was used to ensure students were maintaining their progress toward benchmark goals. The end of study data was gathered at the end of November. The table below shows end of study data and growth compared to beginning of the year and middle of study.

Table 3.5

*End of Study Data in First Sound Fluency*

<b>Name</b>	<i>B.O.Y.</i>	<i>Mid-Study Data</i>		<i>End of Study Data</i>		<i>Total Growth</i>
	<i>FSF</i>	<i>FSF</i>	<i>Growth</i>	<i>FSF</i>	<i>Growth</i>	
	Goal 10					
<b>Ana</b>	0	36	+36	42	+6	+42
<b>Sean</b>	4	42	+38	45	+3	+41
<b>Rachel</b>	2	26	+24	23	-3	+21
<b>Jess</b>	0	28	+28	24	-4	+24
<b>Peter</b>	0	39	+39	31	-8	+31
<b>Amber</b>	14	37	+23	42	+5	+28
<b>Amanda</b>	15	21	+6	43	+22	+28
<b>Ken</b>	12	41	+29	49	+8	+37
<b>Ben</b>	6	36	+30	31	-5	+25
<b>Megan</b>	25	46	+21	42	-4	+17
<b>Lori</b>	18	24	+6	37	+13	+19
<b>Carl</b>	18	36	+18	48	+12	+30
<b>Alex</b>	17	44	+27	48	+4	+31
<b>Bri</b>	23	46	+23	51	+5	+28
<b>Andrea</b>	17	37	+20	56	+19	+39
<b>Emily</b>	30	36	+6	46	+10	+16
<b>Reese</b>	34	38	+4	56	+18	+22
<b>Emma</b>	38	54	+16	53	-1	+15

According to the data in Table 3.5, by the end of the study, all students showed positive growth in identifying first sounds in words. Student growth ranged from a 15 letter-sound increase to 42 letter-sound increase. The average growth in first sound fluency was a 27 letter-sound increase.

### DIBELS Beginning of Year vs. Middle of Year

Students were assessed again at the beginning of January in four measures specific to early literacy tasks. The measures included letter naming fluency (LNF), first sound fluency (FSF), phoneme segmentation fluency (PSF), and nonsense word fluency (NWF). Below is a table that compares beginning of the year scores to middle of the year data.

Table 3.6

*Beginning of Year Benchmark vs. Middle of Year Benchmark*

Name	<i>B.O.Y.</i>		<i>M.O.Y.</i>				
	<i>FSF</i> Goal 10	<i>LNF</i>	<i>FSF</i> Goal 30	<i>LNF</i>	<i>PSF</i> Goal 20	<i>NWF(CLS)</i> Goal 17	<i>NWF (WWR)</i>
Ana	0	4	58	36	44	22	0
Sean	4	3	49	14	64	17	0
Rachel	2	9	37	16	16	9	0
Jess	0	15	42	37	46	21	0
Peter	0	17	40	42	33	19	0
Amber	14	4	48	46	53	35	0
Amanda	15	12	52	37	51	20	0
Ken	12	16	56	45	62	20	0
Ben	6	23	36	34	36	23	0
Megan	25	5	51	19	33	11	0
Lori	18	17	48	39	55	29	4
Carl	18	28	58	47	54	33	0
Alex	17	31	52	52	47	43	1
Bri	23	31	54	64	37	37	0
Andrea	17	38	50	59	41	39	11
Emily	30	29	48	64	50	40	9
Reese	34	51	42	74	40	84	28
Emma	38	51	57	62	58	32	0

*Note.* CLS = correct letter sounds; WWR = whole words read.

Comparing beginning of the year scores to the middle of the year scores, 100% of students have met the goal in first sound fluency and have shown growth in this measure. Although there is no goal for letter naming, 100% of students named more letters than the beginning of the year. However, 17 percent or three students scored less than 20 on this measure. I would consider a score of 20 or below to be at-risk. Six percent, or one student scored below the expected goal in phoneme segmentation. Additionally, 17 percent or three students, scored below benchmark on nonsense word fluency, and 83 percent or 15 students met the goal. This shows students' positive growth in letter naming and first sounds. It also shows which students are struggling in letter naming and attaching letters to sounds with automaticity.

### Student Work – Beginning Sound Sort

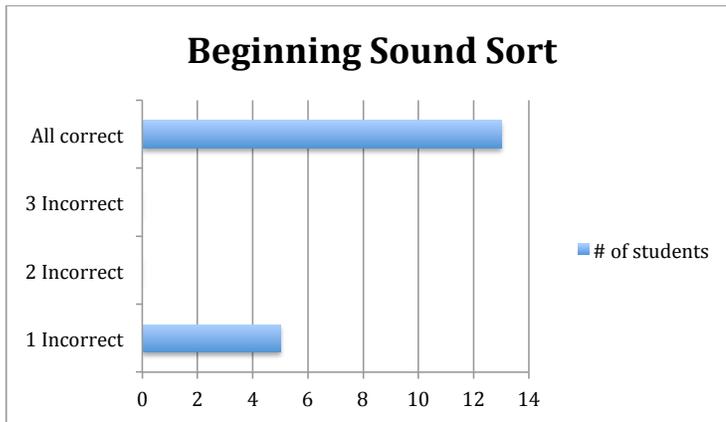


Figure 3.6.

Figure 3.6 shows 28 percent of my class had one incorrect answer on their picture sort for beginning sounds. This shows these students need continued practice and support in identifying beginning sounds.

### Student Work – Phonics Review

As part of another assignment to review letter sounds previously taught, students were asked to complete a quick phonics activity. This activity was to name each picture and write the letter that begins each picture name. Ana and Megan were the only students who did not complete this activity with 100 percent accuracy. Ana had made one error and Megan made two errors. This was one of the first signs to me that Megan was struggling with her letters and attaching letters to sounds.

### Student Work – Ending Sound Sort

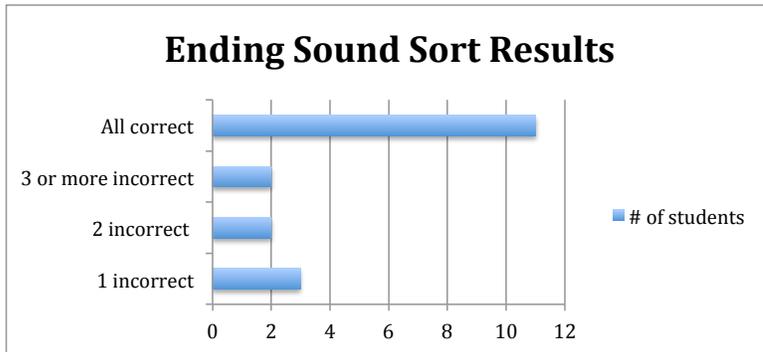


Figure 3.7.

Figure 3.7 shows that 61 percent of the class made zero errors, 17 percent made one error, 11 percent made two errors, and 11 percent made three or more errors. This shows that more students had trouble completing this sound sort than the beginning sound sort. It also shows that more students made more errors while completing this sort. The sort results are consistent with the other forms of data that identify struggling learners. The students who had incorrect answers was where I needed to focus my differentiated instruction as well as closely monitor them during whole group activities.

## Student Work – Decodable Sentences

Table 3.7

### *Decodable Sentences Results*

	0 errors	1 error	2 or more errors
# of students	9	8	1

Table 3.7 shows half of the class read the sentences with zero mistakes, 44 percent made one mistake while reading, and six percent made two or more errors. This shows 50 percent of the class was having a hard time applying skills into reading CVC words and words in text. This shows that students need more practice in this skill and opportunities to read decodable sentences in meaningful text.

### **Survey**

One thing that I included on my surveys was student opinions about reading, including reading at home and reading at school. Since we spend a majority of our day on learning how to read, I wanted to know how my students felt about reading. Included on each survey was one question about reading at home and another question about reading at school. I compared the results of student opinions on these two questions and compared the results from the beginning of the study to the end of the study.

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Table 3.8

*Survey Comparison on Reading Books*

	Beginning of Study			End of Study		
	Thumbs Up	Thumb in the middle	Thumbs Down	Thumbs Up	Thumb in the middle	Thumbs Down
I like to read and look at books at home.	13	2	3	14	1	3
I like to read and look at books at school.	11	1	6	14	3	1

*Note.* Numbers represent number of children out of 18.

When comparing the results of the beginning of study versus the end of the study for student who shared their opinions on reading and looking at books at home, the results show a small increase from 72 percent having favorable opinions about reading at home to 78 percent by the end of the study. The number of students who shared they were unsure about their feelings toward reading and looking at books at home decreased by six percent from the beginning to the end of the study. The number of students that did not like to read at home stayed the same from beginning to the end. While looking at the results, Bri was consistent in her feelings from beginning to end, as she had not changed her answer. Peter

and Megan voiced that they no longer liked to read books at home. Megan shared that books at home were “too old”. It is also important to note that Alex changed his opinion about reading at home to a more positive feeling from the beginning to the end. This shows that his confidence level has increased and he is starting to have certainty in his abilities. The results also show that a majority of students still had favorable opinions about reading books at home compared to those that do not. This is important as students move forward in their learning to continue to have a positive attitude and feeling toward learning how to read and books in general.

Table 3.8 also shows results from student opinions about reading and looking at books in school. This result I felt would be important to analyze because as a teacher you want student learning to be fun and engaging. The results show that at the beginning of the study 61 percent of students had shared they liked reading at school, compared to the end of the study that number increased to 78 percent of students. This shows more students enjoyed reading and looking at books by the end of the study. It is important that there was an increase because it shows that students were enjoying the time we spent in literacy learning to read. The number of students who were unsure about reading at school increased from six percent to 17 percent. These students, Sean and Megan have been having trouble in literacy, so it would seem to make sense why they were unsure about their feelings toward reading in school. Lastly, the number

of students at the beginning of the study that shared they do not like to read at school was 33 percent. This number decreased to six percent by the end of the study. This shows that these students may have found confidence in their abilities to enjoy reading and looking at books. I think the continued practice in reading sight words and meaningful text is an important reason for the change. I can see that the student (Ana) who does not enjoy reading books at school is the same student that has been struggling in the daily literacy lessons as well as following daily classroom routines.

Another important aspect of using surveys was to gain understanding of student opinion toward multisensory activities. This information would be important because it would help identify which activities students enjoyed using while learning. I could then cater my activities and lessons to fit the needs of these learners.

Table 3.9

Survey Comparison

	1 <sup>st</sup> time introduced			End of Study		
	Thumbs Up	Thumb in the middle	Thumbs Down	Thumbs Up	Thumb in the middle	Thumbs Down
Song/dance	13	5	0	16	0	2
Gestures	14	3	1	14	4	0
Wipe off boards	13	3	2	16	0	2
Sound boxes	14	4	0	14	3	1
Sky writing	6	4	6	12	0	6

*Note.* The sky writing survey at beginning of the year only was only given to 16 students. Two students were not in school due to personal reasons.

Table 3.9 shows that there was a 17 percent increase in the amount of students who enjoyed using song/dance to learn from the beginning of the study to the end with 89% of students sharing they like to use song/dance as a helpful tool to learn. The data remained about the same from beginning to end with the use of gestures and sound boxes. Eighty-nine percent of students enjoyed using wipe off boards by the end of the study. This means that using wipe off boards is a highly favorable activity I can use with my students to learn. Finally, the use of sky writing had a more positive result by the end of the study. At the beginning of the study, only 33 percent of students liked using sky writing and by the end 67

percent enjoyed using the activity. From these results, I can see that the least liked

activity is the use of sky writing. Perhaps using this activity after the children have more time learning letters would be beneficial for my students in the future.

The most liked activities according to the class were song/dance and wipe off

boards. These activities, found to be more engaging for kindergarteners, may need to be used more frequently as I continue to teach literacy skills.

## Theme Statements

- **Multisensory Approach and Engagement**
  - *Using multisensory tasks and techniques when integrated into the daily phonics lesson has the ability to positively benefit students' ability to recall and retain necessary literacy skills. Despite a lack of motivation from students at the onset of the research study, when multisensory tasks were included student motivation, interest, and engagement in the activity was apparent.*
- **Integrated Approach**
  - *Instructional strategies such as the use of systematic and explicit instruction and the gradual release of responsibility into all forms of instruction can benefit students' abilities to gain and sustain essential skills.*
- **Survey Learning**
  - *The use of surveys encouraged students to share their thoughts and opinions with each and every multisensory task as well as opinions toward reading at home and school. Through the use of these surveys, students shared that they have a high interest in learning, specifically when they are engaged using certain multisensory techniques.*

## Findings

### **Multisensory Approach and Engagement**

*Using multisensory tasks and techniques when integrated into the daily phonics lesson has the ability to positively benefit students' ability to recall and retain necessary literacy skills. Despite a lack of motivation from students at the onset of the research study, when multisensory tasks were included student interest and engagement in the activity was apparent.*

Multisensory instruction is using learning that engages two or more of the senses into the learning process. As a teacher, when I think of multisensory learning, I think of fun, engaging, interesting activities that get students up and moving, touching objects or textures, manipulating objects and so many other exciting tasks.

My students needed fun. The results from beginning of the year testing was concerning, considering I had never had this many students appear as at-risk or below grade level. Not only did I need to teach them literacy skills, I needed these students to recall and retain these skills so that they could build upon them and begin to learn how to read.

Results showed by integrating the multisensory techniques into our phonics lessons the students in my class were continuing to show progress toward literacy goals. Student scores in identifying first sounds were improving, this was evident in the mid-study data as well as through the end of the study. Students also showed positive growth in this through independent work. As the study progressed more skill retention and recall were needed. We moved from

identifying only the beginning sound to identifying ending and medial sounds as well as blending and segmenting. Multisensory techniques such as gestures, sound boxes and wipe off boards were crucial in helping students with recall and retention of these skills. Student data from middle of the year benchmark indicate students made immense growth from the beginning of the year. Including multisensory activities into the phonics lesson, students' ability to recall and retain literacy skills such as identifying beginning sounds, segmenting VC and CVC words, and decoding nonsense improved.

At the beginning of the year, the students in my classroom were bored and uninterested. They did not want to be doing any schoolwork; they would have rather been playing. Anything I tried to make into a *fun* activity turned out to still be "boring" to these students. As Delpit (2012) states "we can and must build curricula that connect to our students' interests, thereby allowing them to connect the knowns to the unknowns (p. 25). By taking every day activities that had to be in the curriculum and completing these same activities using more than one of the senses at a time was my plan to get my students active, engaged, and more interested in learning.

I started introducing multisensory learning by beginning with a class favorite from the past. Introducing the songs and dances to the class was going to be my way of hooking them in to this new idea of using more than one of our senses to learn. Each song consisted of lyrics that used words with our new sound. This new multisensory activity definitely got the students excited about what was

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to come! Students were cheering and asking when we could listen to the song again or listen to the newest song. The results show that this is one of the activities the students enjoyed and were engaged in most. Each week a new multisensory activity was introduced. Some of the activities and tasks were more favored than others. A total of five multisensory activities were introduced to students throughout the study. The results [from student surveys](#) showed that students would be most engaged and interested in their learning when they are learning through song and dance as well as wipe off boards. For all activities, a majority of students shared a positive interest in the task. The number of students who shared they had an interest in the activity from the beginning of the study, was the same or higher for that same activity by the end of the study. This was positive feedback from the students sharing that there was interest in doing the activities! The results also allowed me to see which activities students may not have as much of an interest in. Sky writing was the least favorable activity of the class. Many of the students' reasons were due to the inability to see the letters and correctly form the letters. [I began to realize that students' inability to correctly form letters was because we had not covered letter formation of all letters.](#) [Understanding this reasoning has allowed me to make changes for future students.](#) [Also, realizing that students' enjoyment of using whiteboards, they could have easily completed this activity on a whiteboard instead.](#) I believe from integrating

the five multisensory activities into our daily [literacy](#) lessons, it helped students to become more interested and engaged in our learning.

### **Integrated Approach**

*Instructional strategies such as the use of systematic and explicit instruction and the gradual release of responsibility into all forms of instruction can benefit students' abilities to gain and sustain essential skills.*

It was important to use instructional strategies that were supported from the literature. I believe using an integrated approach to teach literacy provided my students with the necessary skills and confidence that could be essential in developing their literacy skills. "From their study of structural principles, they argue that the learning process can never be reduced simply to the formation of skills but embodies an intellectual order that makes it possible to transfer general principles discovered in solving one task to a variety of other tasks" (Vygotsky, 1978, p. 83). Teaching skills in a systematic order can help students to apply learning of one task to learning of a new task.

I began instructing students in teaching them letters and letter sounds. After each week, we would build upon their skill set by not only identifying the letter and sound, but also identifying the beginning sound in a word. We also transferred these skills into beginning to segment and blend two and three-sound words. These skills would be completed in the same order each week as to keep the routine consistent for students. Each week students could identify new letters

and sounds, segment and blend new words. Along with each new letter, I introduced a new dance that correlated to the letter and sound we were learning. This provided students with opportunities to hear and identify more words that began with the same letter sound. Along with the introduction of the letter, articulation support was provided for all students. [This support included mouth formation and recognizing if it was a voice or unvoiced sound.](#) This eliminated any confusion students had about what sound they should be listening for and what formation their mouth should be in. Some students were not successful in mastering the new letter, sound, or phonological tasks. Each week we would continue to review previously taught skills. This spiral review helped my students build upon their skill set and give them a plethora of opportunities for practice.

In addition to teaching new skills in a sequential order, the literature also supported using explicit instruction. Researchers have recommended the use of explicit instruction in teaching students reading strategies and skills (Reutzel, Child, Jones, & Clark, 2014). Other researchers have supported using both systematic and explicit instruction when teaching children. In using both explicit and systematic instruction, Smith and colleagues (2016) have also supported the use of both systematic and explicit instruction; their study suggests that using both is beneficial to students because it supports their working memory. I provided my students with direct instruction using an active learning approach. I provided instruction with clear explanations leaving no need for inference. This included

telling my students new spelling pattern rules as we came upon them. For example, when reading words with one vowel followed by a consonant the vowel sound will be short. This was followed by an example of me reading the word and explaining the rule again. This way of teaching leaves little discretion to the learner and tells them the rules and offers opportunities to practice. After I had modeled reading the word and explaining the rule [on the teacher whiteboard](#), we would [practice reading](#) a few different words that followed the same rule together. Students would have multiple opportunities to practice and master the skill. Using explicit instruction is critical in their ability to internalize the correct way of doing something. Without the explicit instruction, struggling students could be internalizing incorrect responses.

An important part of my use of systematic and explicit instruction was the integrated approach of the gradual release of responsibility ([GRR](#)) model. There were many aspects of this research study that required me to use *I do, we do, you do*, as a way for students to fully grasp the concept of what they are being asked to do. “Using imitation, children are capable of doing much more in collective activity or under the guidance of adults” (Vygotsky, 1978, p. 88). When I first introduced the first letter and sound M and /m/, I modeled for the class how to say the letter name and sound, then we did it together and then they did it on their own. This continued for each new letter and sound learned. We also used the GRR for completing independent work during our literacy block. For example,

the picture sorts, I first modeled for students how they were to cut out the picture and glue it on to the paper under the corresponding letter while explaining my reasoning for picking the side I did. As class we completed another picture together, deciding what side the picture should go on. The class independently completed the *you do* during independent work time.

While including systematic and explicit instruction with the gradual release model, I felt I was setting my students up for success. It was frustrating to see that even with all my modeling and opportunities for practice there were still students who were struggling in the beginning phases of decoding as well as simply following directions. I would like to think that at the beginning and even still in the middle of this research study, students were still familiarizing themselves with routines and the importance of listening. All of this played an important role in determining the effectiveness of the integrated approach. By the end of the study, the scores of the DIBELS assessment provided valuable data to show my efforts to use the integrated approach were effective in helping the students acquire foundational literacy skills. While the DIBELS assessment is a great snapshot of student skills, using the decodable sentences allowed me to see how students were applying these skills in actual text. It was disappointing to see how many students mixed up letters and had trouble decoding a few of the words. Many needed reminders to “sound it out” or “say the sounds”. Perhaps with more

repetitions and opportunities to decode meaningful text students could become more successful.

### **Survey Learning**

*The use of surveys encouraged students to share their thoughts and opinions with each and every multisensory task as well as opinions toward reading at home and school. Through the use of these surveys, students shared that they have a high interest in learning, specifically when they are engaged using certain multisensory techniques.*

Student opinions and interests are important when designing lessons. I think students should freely share their thoughts about their learning. I included the use of surveys throughout the study to gain insights into whether the students were enjoying these new activities and how they felt about reading at home and school.

Surveys were given to my class about a week after each new activity was introduced and again at the end of the research study to see how their opinions had changed or not. I was able to administer the survey with explicit directions, using frequent modeling for my students. With the first survey being quite frustrating and time consuming, I was unsure what the results were going to show and if they would be valuable. Through the continued use of explicit directions, most students were able to accurately complete the rest of the surveys. Teacher

knowledge, modeling, and flexibility are crucial in explicit instruction. Looking at the results of the first survey, I was able to realize how important it was for me to continue to use explicit directions to model and have clear expectations.

Another insight gained from using surveys was the feedback from students about whether they liked or did not like an activity and/or why they like or do not like reading at home and school. Student perceptions of self were so valuable. I realized that students, even as young children, are concerned about other students listening to them read. They shared they were afraid that others might hear them. Other students shared they did not feel like they were good readers or that they were even reading at all. As a result of students sharing their feelings, I was able to monitor student reading in a small group or individually instead of asking to read chorally in whole group. I was able to encourage the students that are reading and provide them with more positive praise to boost self-confidence. The results showed that by the end of the study that more than three quarters of the class enjoyed reading and looking at books at home and school. I think that by the students being open and sharing their feelings with me, I was better able to fill their needs and provide them what they needed in a way that suited them best.

Lastly, the surveys helped to guide instruction to fit the needs of the learners in my classroom. From each survey, I was able to determine the activities that were preferred and non-preferred. I was able to use song/dance and wipe off boards more frequently to keep them engaged and excited because they liked

these activities best. Using gestures and sound boxes was interesting for most students as well. Specifically, the students who were struggling shared they liked using gestures to help them remember sounds. Through observations, it was apparent that these students used gestures more frequently than others who knew their letters and sounds. Surveys helped to gain insights into the positives of student learning and feelings and helped to foster students' interest in learning to read.

Limitations and Further Questions:

Although the use of a standardized measure of literacy (DIBELS), student surveys, and student work samples provided me with a wealth of information as I taught literacy skills to this particular group of kindergarteners, a few limitations to this study need to be noted. First, results from this study are descriptive only. I do not know if the explicit instruction of the literacy skills, the multisensory activities, or child developmental growth elated more with children's growth in reading skills. It could be the case that the systematic explicit modeling suggested by the authors of this particular rigorous curriculum provided the young children with direct teaching of both phonemic awareness and phonics skills, which supported their reading growth. On the other hand, since the children indicated that the majority enjoyed two multi-sensory activities, songs and whiteboards, it could also be the case that tapping into student interest and learning style, as suggested in research, actually supported the children's learning in both phonemic

awareness and phonics. Further control group intervention research will be important to distinguish between and control for specific instruction. Furthermore, the surveys used in this study were completed by the children. Caution is warranted as perceptions of children's interest may be swayed by other external factors, such as the time of day or the children's emotions. Although the survey data has also related to observational data, as I have also seen the children reach out to these particular activities during literacy instruction.

### **What's Next?**

Although my study has ended, I plan to continue to implement the same multisensory techniques and activities with this class as well as future classes. I have found that students, no matter their level, truly look to these activities for guidance during learning.

As this year continues, I find students continuing to ask when we are going to do the activities. I also have found that they know the routines so well, I do not even have to give directions to the activities anymore!

There were other multisensory activities that I wanted to include within this study, such as sand boxes, shaving cream, paint, wiki sticks, etc; however, I could not find the time to include them. As I continue in my teaching, I want to include more of these hands-on activities to continue to excite and engage my learners. Each class of students is different and I never know what each group is really going to enjoy. I plan to continue to include the five multisensory techniques from my study but integrate some new activities as well. This way I can hope to reach the needs of all my new learners.

In conclusion, my research study has allowed me to implement a few engaging activities into our core curriculum. It provided students with opportunities to become more engaged in their learning. Students were able to share their thoughts and communicate their needs with me. These experiences

have led to an increase in achievement in their literacy skills. I cannot wait to see what the future will hold for these students and students in the coming years!

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## Appendix A: HSIRB Approval



Account, HSIRB <hsirb@moravian.edu>

Jul 11, 2018, 2:54 PM



to me ▾

Dear Lindsay,

Thank you for submitting your revisions. You have addressed all of the concerns listed in your conditional approval. The HSIRB has completed its final review of your proposal and is granting approval of this proposal.

Please note that if you intend on venturing into topics other than the ones indicated in your proposal, you must inform the HSIRB about what those topics will be. Should any other aspect of your research change or extend past one year of the date of this email notification, you will need to file those changes or extensions with the HSIRB and receive approval of the changes before implementation. If you need a hard copy letter indicating your approval status for record keeping purposes, please let me know.

One last step. We need to collect your **electronic signature(s)**. If (each of) you could respond to this email with your own name and the project title in the subject line, that will serve as your electronic signatures. Please do not hesitate to contact me if you have any questions.

Good luck with your research!

Take care,

Dr. DesJardin



## Appendix B: Principal Consent Form

### Principal Consent Form

Dear Mr. Horvath,

As you know I am currently working on my Master's Degree at Moravian College for Curriculum and Instruction. I am currently working on my thesis titled "Using Multisensory Techniques to Improve Reading Achievement". My research is about providing kindergarten students with more than one modality of learning while learning a new skill in order to retain the skill. During this study, I will use the data I gather to engage students in activities that fit their individual needs. I will expose students to a variety of multisensory activities to fit their differing learning styles. The purpose of my research is to provide a variety of multisensory learning activities to meet the needs of all learners so that these students can become successful readers.

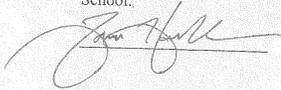
I will use student surveys and DIBELS scores to monitor student learning. Surveys will allow me to see which activities the students like to participate in best. I will also be collecting data on my students through the use of progress monitoring. This data will allow me to see where student strengths and deficiencies are. This data will give me a focal point on where I should be focusing my instruction.

This study will take place in my kindergarten classroom from October 11 until November 28, 2018. I will be collecting data during my research. I will use only data from students who have parental consent to participate in my research. All students' names will be kept confidential, and I will not identify the school or district. If at any time, a parent does not want his or her child to participate in my study, the parent may withdraw the child from the study without penalty. In a letter to parents, my contact information is listed if they have any questions. If a child is withdrawn, his or her data will not be used in any part of my study.

My faculty sponsor at Moravian College is Dr. Tristan Gleason. He may be reached at 610-861-1452 or at [gleason@moravian.edu](mailto:gleason@moravian.edu). If at any time you have a question or concern about my action research study, please let me know. If not, please sign and return the bottom portion of this letter. Thank you in advance.

Sincerely,  
Lindsay Jordan

I attest that I am the principal of the teacher conducting this research study, that I have read and understand the consent form and received a copy. Lindsay Jordan has permission to conduct this study in her kindergarten classroom at Asa Packer Elementary School.



5/4/18

## Appendix C: Parent Consent Form

Parent Consent Form

Dear Families,

I am currently working on my Master's degree at Moravian College. The course that I am currently enrolled in will help me complete my thesis. The topic of my research is to help students engage in multisensory activities that will help all students become successful readers. My research will be about providing kindergarten students with more than one modality of learning while learning a new skill. During this study, I will use the data I gather to engage students in activities that fit their individual needs. I will expose students to a variety of multisensory activities to fit their differing learning styles. The purpose of my study is to provide a variety of multisensory learning activities to meet the needs of all learners so that these students can become successful readers.

I will use student surveys and monitor student progress in literacy. Surveys will allow me to see which activities the students like to participate in best. I will also be collecting data on my students through the use of progress monitoring. This data will allow me to see where student strengths and needs are. This data will give me a focal point on where I should be focusing my instruction.

This study will take place in my kindergarten classroom from October 11 until November 28, 2018. I will be collecting data during my research. I will use only data from students who have parental consent to participate in my research. All students' names will be kept confidential, and I will not identify the school or district. If at any time, you do not want your child to participate in my study, you may withdrawal your child from the study without penalty. My contact information is listed below if you have any questions. If a child is withdrawn, his or her data will not be used in any part of my study.

My faculty sponsor at Moravian College is Dr. Tristan Gleason. He may be reached at 610-861-1452 or at [gleason@moravian.edu](mailto:gleason@moravian.edu). If at any time you have a question or concern about my action research study, please contact me at [ljordan@basdschools.org](mailto:ljordan@basdschools.org) or 610-865-0660. If not, please sign and return the bottom portion of this letter. Thank you in advance.

Sincerely,  
Lindsay Jordan

\_\_\_\_\_  
To Miss Jordan,

I \_\_\_\_\_ give my permission for \_\_\_\_\_ to take  
(your name) (child's name)

part in your research.

\_\_\_\_\_  
(Parent/Guardian Signature)

\_\_\_\_/\_\_\_\_/\_\_\_\_  
(Date)

## Appendix D: Student Survey

Name \_\_\_\_\_

### Directions

-Read the statement

-Ask students to circle the picture that shows how they feel about the activity.

### How I like to Learn Survey

1. I like to read and look at books.

2



2. I like to read and look at books in school.



3. I like to listen to songs and dance to each letter song.



4. I like to use paint/shaving cream to help me remember letters and words.



5. I like to use gestures to help me remember the sounds of letters.



6. I like to use gems/squares to help me hear the sounds in words.



7. I like to use wipe off boards to help me write letters and spell words.



8. I like to use sky writing to help me spell words.



## Appendix E: Phonics and Decoding Diagnostic

### Phonics and Decoding Grades K-6

Grades K-1					
<b>1. Letters</b>			<b>Score</b>		<b>Score</b>
(a) Names	m t a s t r d f o g l h u c n b j k y e w p v qu x z		/26	(b) Sounds /m/ /t/ /a/ /s/ /t/ /r/ /d/ /f/ /o/ /g/ /l/ /h/ /u/ /c/ /n/ /b/ /j/ /k/ /y/ /e/ /w/ /p/ /v/ /kw/ /x/ /z/	Consonants: /21 Vowels: /5
Grade 1					
<b>2. VC and CVC</b>				<b>Comments</b>	<b>Score</b>
(a) In List	wat pon mip	fod sib hav	leb cug	tym raf	/10
(b) In Text	Sam and Ben hid the gum. Pat had a nap in bed. Mom had a top on a big pot. Tim can sit in a tub.				/20
Grade 1					
<b>3. Consonant Digraphs</b>				<b>Comments</b>	<b>Score</b>
(a) In List	shap pilh mich	ming chan whaf	gack thog	whum kosh	/10
(b) In Text	That duck had a wet wing. Dad hit a log with a whip. When can Chip pack? A fish is in that tub.				/10
Grade 1					
<b>4. CVCC and CCVC</b>				<b>Comments</b>	<b>Score</b>
(a) In List	clab slad jast	trin fosp sund	snaf lonk	greb mant	/10
(b) In Text	Glen will swim past the raft in the pond. The frog must flip and spin and jump.				/10
Grades 1-2					
<b>5. Silent e</b>				<b>Comments</b>	<b>Score</b>
(a) In List	sice vate gane	nole rine fote	fune lade	maze sile	/10
(b) In Text	Mike and Jane use a rope to ride the mule. Pete had five tapes at home.				/10

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