



Teaching Phonological Skills Using Multisensory Strategies

By Kathy Gillette



Introduction

Many young students learn to read easily with little to no intervention, while other young learners need creative and unique strategies to stimulate their brains. In the 2017 Colorado Annual Read Act Report, 10.3 % of statewide kindergarten students were considered to have a significant reading deficiency. Explicit, systematic instruction is necessary to teach struggling readers. Using Multisensory teaching strategies, is one way to explicitly and systematically educate our young struggling readers. Multisensory teaching is defined as teaching strategies that simultaneously involve visual, auditory, tactile-kinesthetic sensory systems, and/or articulatory-motor components while linking listening, speaking, reading and writing (Birsch, 2019). Activating all parts of the brain increases the effectiveness and outcome of learning.

Although interventions are in place for struggling young readers, they may not be aligned with how a young kindergartner's brain is developing. Implementation of multisensory instruction increases phonological awareness by incorporating auditory, visual, tactile activities that stimulate the phonological processor of the brain. The purpose of this study was to examine the effectiveness of using multisensory strategies to teach phonological awareness in kindergarten students.

Literature Review

According to MRI studies of the brain while completing simple reading tasks show multiple brain areas and complex connections among those areas are activated during simple reading tasks. As they read, good readers activate the back of the brain and also to some extent the front of the brain. Poor readers under activate the neural pathways to the back of the brain. They have trouble analyzing words and transforming letters into sounds and words. Struggling readers are using the systems in the front of the brain to try and compensate for the disruption in the back of the brain.

Phonological awareness is necessary to develop a strong foundation in reading. Dr. Kilpatrick defines phonological awareness as having an awareness of sounds in spoken words, whether syllables, onsets, rimes, or individual phonemes.

Early reading intervention is key when working with struggling readers. The sooner a teacher or reading interventionist can provide specific, explicit, and targeted reading instruction for a struggling reader, the greater the chance is the student will close the reading gap with their peers. research conducted by Parten and Siegel supported the theory of early intervention. This study examined the longitudinal effects of an early literacy intervention in Kindergarten. A group of children completed reading and cognitive measures between Kindergarten (5–6 years old) and Grade 7 (12–13 years old). In their study, results showed that 22 % of children were identified as at-risk for reading deficits in Kindergarten, but only 6 % of children had reading difficulties in Grade 7. (Parten, Siegel, pg. 665). This research concluded that early intervention was successful for these kindergarten students.

One specific type of instruction that is successful with phonological awareness intervention is multisensory strategies. Multisensory strategies activate all parts of the brain to aid with struggling readers' inability to access the front and back, left side of the brain. Birsh, defines multisensory structured language education as an instructional approach that incorporates the stimulus use of visual, auditory, kinesthetic, and tactile sensory modalities to link listening, speaking, reading and writing together.

The purpose of this study was to examine the effectiveness of using multisensory strategies to teach phonological awareness in kindergarten students.

Research Method

Research Design: This study was a qualitative case study on a single group of kindergarten students aimed at examining the extent to which multisensory instruction affects phonological awareness. T-tests were conducted to analyze the change in students' reading scores pre and post-intervention.

Participants:

- Participants of this study were five public school kindergarten students at Elementary School X in a suburban school district.
- Elementary School X serves students in kindergarten-fifth grade
- Forty-eight percent of students at Elementary School X, qualify for the free and reduced lunch program
- Elementary School X had 429 students enrolled at the time of the study
- Eight percent of the student populations were qualified for individualized educational plans concurrent with the study

Data Collection:

- The intervention provided to the participants included multisensory instruction.
- All multisensory activities were repeated daily during the 30 minute intervention period beginning on January 10, 2020 - February 21, 2020.
- The interventions started after the administration of the middle of the year benchmark testing which occurred in December, one week before the end of the second quarter of the school year.
- Progress monitoring of the targeted skills was given bi-weekly
- Phonological awareness was measured using the Dynamic Indicators of Basic Early Literacy Skills (DIBELS) progress monitoring reading assessment. Specifically, Letter Naming fluency (LNF), phoneme segmentation (PSF), and Correct Letters Sounds (CLS) subscale assessments were used to collect data

Data

Three different kindergarten reading components were progressed monitored during one six week intervention cycle. Each kindergarten reading component used multisensory strategies to teach the phonological skill.

1. First Sound Fluency

The value of *t* is 0.58. The value of *p* is .59501.
The result is *not significant* at *p* < .05.

Name	MOY score	PM #1 1-22-20	PM #2 2-3-20	PM # 3 2-20-20	Change
Student 1 (R)	43	32	39	56	+13
Student 2 (Z)	31	26	30	30	-1
Student 3 (J)	36	27	36	30	-6
Student 4 (C)	28	28	27	29	+1
Student 5 (D)	17	18	23	19	+2

2. Rapid Letter Naming

The value of *t* is 3.38. The value of *p* is .02791.
The result is *significant* at *p* < .05.

Name	MOY score	PM #1	PM #2	PM # 3	Change
Student 1 (R)	24	25	30	35	+11
Student 2 (Z)	27	29	36	43	+16
Student 3 (J)	24	19	23	35	+11
Student 4 (C)	27	33	26	26	-1
Student 5 (D)	33	33	37	50	+17

3. Phoneme Segmentation

The value of *t* is 0.81. The value of *p* is .4625.
The result is *not significant* at *p* < .05.

Name	MOY score	PM #1	PM #2	PM # 3	Change
Student 1 (R)	22	26	29	36	+14
Student 2 (Z)	11	8	7	9	-2
Student 3 (J)	17	11	12	9	-8
Student 4 (C)	15	10	12	11	-4
Student 5 (D)	13	5	41	39	+26

Results/Findings

Data Revelation:

- First Sound Fluency and Phoneme segmentation did not show a significant change in scores with multisensory intervention.
- Rapid Letter Naming did show a significant change in scores with multisensory intervention

Other Research Studies:

- A study conducted by Campbell, Heff, Cooke, indicated that the fluency of decoding VC and CVC nonsense words increased when multisensory components were added to the supplemental reading intervention This intervention study lasted an entire school
- Other research conducted by Parten and Siegel supported the theory of early intervention. This study examined the longitudinal effects of an early literacy intervention in Kindergarten. A group of children completed reading and cognitive measures between Kindergarten (5–6 years old) and Grade 7 (12–13 years old). In their study, results showed that 22 % of children were identified as at-risk for reading deficits in Kindergarten, but only 6 % of children had reading difficulties in Grade 7.

Discussion

Although results of my study were inconclusive in supporting the positive effects multisensory instruction has on phonological awareness, other research studies show positive results with a longer data collection period. Perhaps, given a longer intervention period, my study would have seen a greater significant change. I was limited in the amount of time I had to collect data to six weeks. Most studies I reviewed lasted an entire school year.

Interruption of instruction do to snow days, dr. appointments and illness were uncontrollable variables that may have affected data results. The students had four snow days during my six week intervention. When working with struggling readers, consistency with intervention is key to their progress.

A final variable that may have interfered with positive results, was the limitations placed by administrators. It is an expectation to focus on letter naming fluency rather than all phonological skills necessary in becoming a successful reader. Given the opportunity to repeat this study considering all the uncontrollable variables, the study would show a substantial change in data.

