The effects of music and rhythm on phonics instruction with beginning readers

Gabrielle M. Moroder

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The Effects of Music and Rhythm on Phonics Instruction with Beginning Readers

By

Gabrielle M. Moroder

A Graduate Field Experience

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EFFECTS OF MUSIC AND RHYTHM ON PHONICS INSTRUCTION

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for Gabrielle M. Moroder
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Abstract
The purpose of this study was to investigate the effects music had on phonemic awareness instruction for beginning readers in five-year-old kindergarten. The *Dr. Seuss Nonsense Word Test: An Assessment Sequence for Emergent to Beginning/Early Readers* (Appendix A) was used for pre and post assessment. The intervention plan and procedures were connected to current research. The plan included explicit instruction in phonemic awareness skills such as decoding, rhyming, and segmenting/blending, within short /a/ and short /o/ vowel patterns. The students received approximately 60 minutes per week of intervention over a six week period. Analysis of pretest and posttest data showed improvement in the area of decoding within phonics.
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The purpose of this study was to investigate the effects music has on phonemic awareness instruction with beginning readers. In this chapter, the population of students will be introduced, as well as their demographics, setting, and the timeline in which it took place. A connection to current research will also be explained, as well as connections to the Common Core State Standards (CCSS).

Rationale for the Study

The students who participated in this study were all enrolled in full day kindergarten in a suburban, Catholic school. Their ages ranged from 5 to 6 years. Before the study took place, a consent form was sent home to each family, explaining the purpose of the study. Out of the sixteen students within the class, 6 boys and 10 girls, all but one form was returned, leaving fifteen students able to participate. During the middle of the intervention, one of the students transferred schools, leaving fourteen participants. The study began in early spring, and lasted approximately six weeks.

There are a few reasons I chose to explore music and its effect on phonemic awareness instruction. One of the main reasons was to link two things that I am passionate about; music and early literacy skills. The fact that I was teaching kindergarten at the time led me to examine this further. I always found myself singing with my students; whether it was a song just for fun, or a song that helped them learn about a certain subject. I tried to link music with many activities during daily instruction. Just from pure observation, I would catch my students singing or humming songs that we had learned to help them remember important information. For example in Science class, we learned a song called Animals Need, sung to the tune of Here We Go Round the Mulberry Bush. This song went through the three things animals needed to survive, but was
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put to a tune that the students were familiar with. Anytime we talked about animals and how they
survive on their own, I would reference the song we learned, and they would be able to come up
with the answer.

I also spent most of my daily instruction teaching my students literacy, and all of its
components, such as phonemic awareness skills. Students were also reminded how to decode
words, or look for a blend to make reading and writing easier. Because my students were just
beginning their school careers, it was important for me to make sure they started out on the right
foot. Essentially, one of their first forms of literacy instruction was from me, their teacher, so I
needed to make it meaningful and useful. One way I wanted to accomplish this task was through
the use of music and rhythm, which led to the exploration of this study.

Connection to Current Research

Research suggests that phonemic awareness is a strong predictor of reading achievement
(Abbott, Greenwood & Walton, 2002; Eastlund Gromko, 2005). With the right tools, methods
and models, teachers should be able to implement phonemic awareness instruction effectively, so
all students can benefit and succeed. Educating teachers on appropriate practices for phonemic
instruction, such as preparing students to recognize beginning sounds, rhyming and segmenting
words, allows students to receive instruction and reach proficiency by the end of the year. A
program that teaches these skills, as well as others, allows students to make proper gains in their
literacy development throughout the year. Phonemic awareness instruction was given, through a
supplemental reading program, or embedded within the reading series, such as the Basal reader.
Linklater, O’Connor & Palardy (2009) agree that phonemic awareness skills predict early
reading performance, and also phonemic awareness instruction becomes an aide for student that
have reading failure, or who are labeled ‘at-risk.’”
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Young readers are just beginning to learn tools and strategies, rhyming, blending, and segmenting sounds, are to be used to successfully develop reading over time. These skills become significant in the development of fluency as a student reads (Eastlund Gromko, 2005). Music and rhythm come into play through auditory sounds and perceptions of visual symbols within text, which are used both in reading music and reading words (Anvari, Trainor, Woodside, & Levy, 2002). Readers begin to form rhythms when decoding words, and using a simple song with a rhythmic pattern, such as a nursery rhyme, allows students to connect reading to music and how they learn. Based upon findings that will be summarized in Chapter Two of this study, the effect music and rhythm have, combined with phonemic awareness instruction, enhances reading and creates a more interactive and successful process for beginning readers.

Connection to Common Core State Standards (CCSS)

Wisconsin Common Core State Standards for English Language Arts indicate that by the end of kindergarten, students will: RF.K.2 Demonstrate understanding of spoken words, syllables, and sounds (phonemes); RF.K.2a Recognize and produce rhyming words; RF.K.2b Count, pronounce, blend and segment syllables in spoken words; RF.K.2c Blend and segment onsets and rimes of single-syllable spoken words; RF.K.2d Isolate and pronounce the initial, medial vowel, and final sounds (phonemes) in three-phoneme (consonant-vowel-consonant, or CVC) words; and finally, RF.K.3 Know and apply grade-level phonics and word analysis skills in decoding words. The foundation for reading, an essential life skill, is begun in the early childhood years. Learning to read requires phonemic and phonological awareness instruction daily in order to achieve proficiency. With that in mind, an intervention with phonemic awareness skills, as well as the influence of music and rhythm opportunities to enhance decoding skills, will be outlined in Chapter Three of this study.
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Conclusion

At the beginning of this chapter, the students were introduced, and background information was given. With the help of music and rhythm, an intervention plan was put into place, using these components as an aide in decoding words with beginning readers, which in this case, were five-year-old kindergarten students. The plans for intervention and direct connections to the Common Core State Standards were also made. In the forthcoming chapters, theories related to literacy instruction, previous research procedures for intervention and results will be discussed.
Learning to read is a key component in the development of young students as they enter into kindergarten and first grade. Students are expected to learn skills to help them successfully accomplish this task. Phonemic awareness skills are one of the most common that students begin with, which ultimately develop further as the years progress. According to Eastlund Gromko (2005), over the past 20 years, “phonemic awareness is one of the best predictors of how well children will learn to read” (p. 200). As students begin using these tools, such as rhyme, segmentation, and initial sounds, the development of their skills becomes more automatic and fluency increases. Students will put these initial sounds, or phonemes, together in a type of pattern to make sense of the word as a whole.

While these patterns are being formed, the relationship to music instruction is found to be of great importance. Through the help of music, students at these young ages are able to take what they have learned about phonemic awareness, and connect it to specific sounds in music, such as pitch. Through this process of distinguishing the different sounds, students can then apply it to phonemic awareness activities, such as alliteration and rhyme (Lamb & Gregory, 2003). Throughout this chapter, the following studies will show the effect phonemic awareness has on beginning readers, “at-risk” students and English Language Learners, and show how music instruction is incorporated into daily instruction to enhance reading and provide students with optimal chances for success.
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Phonemic Awareness

The following studies will show the effect Phonemic Awareness has on students who are beginning readers, and will show the importance of the program for students who are labeled “at-risk” or “low” for reading failure.

The study conducted by Abbott and Walton (2002) explored the effects of using a phonemic awareness program within kindergarten and first grade classrooms. The purpose of their study was to determine the extent to which teachers implemented research-based practices on a daily basis to encourage phonemic awareness and then subsequently, to determine the impact of this instruction on students’ phonemic awareness abilities. The authors hypothesized that with the right tools, methods and models, teachers should be able to implement the phonemic awareness curriculum effectively and that students would subsequently increase their phonemic awareness skills. The dependent variables in the study were the results of a nationally named standardized assessment of fluency, that included subtests measuring students’ knowledge in three different areas: 1) onset recognition fluency (beginning sounds), 2) letter recognition fluency, and 3) phonemic segmentation. A fidelity checklist was used with teachers, which helped them guide their instruction of the program.

The sample consisted of approximately forty kindergarten students from one elementary school, who all had received whole-class phonemic awareness instruction. Researchers used results from the nationally named standardized assessment to rank students into high, medium or low groups. Based on these results, the researchers selected approximately thirty students who qualified for instruction, based on their low performing scores. Ultimately, the authors chose a smaller group of students from that sample, who could be monitored more closely.
This study occurred over the course of three consecutive years. In the first year, when the students started in kindergarten, the teachers were asked to incorporate phonemic awareness lessons into their daily instructional plans. During the first year of instruction, students participated in whole-class book activities for 30 minutes, two times per week. Additionally, during this first year, researchers placed the students in high, medium or low groups based on their assessment scores. During center time, teachers provided students with more instruction. The low group met with their teacher four days each week, while the medium group met with the teacher two times per week, and the high group received additional instruction one time per week. As the intervention took place, the principal of the school expressed concerns that the teaching of phonemic segmentation was above the comprehension of the kindergarten students. For this reason, instruction from that point forward focused on onset recognition and letter naming. At the end of the first year, researchers administered the same pretest assessment and discovered that although the medium and high groups had advanced their scores, the low group did not.

During the second year of this study, the students matriculated into first grade. Segmentation and blending words were skills that these students deem necessary for advancement and achievement, but not many had learned these strategies from the previous year, according to the first grade teacher’s observations of the students so far. New instructional materials were introduced. Teachers taught phonemic lessons from these materials that matched the needs of the students; however, the authors did not perceive the program to be an effective tool for the students. Therefore, the researchers created an instructional plan focused on developing students’ ability to segment and blend only consonant-vowel-consonant (CVC) patterns, using formative assessments. After participating in this researcher-created instructional
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program for two to three times a week for 8 weeks, the students made gains, based on a researcher-created assessment aligned with the instructional program.

Over the summer before year 3 of this study, teachers and researchers decided to teach the incoming first graders from a different, published instructional program related to developing phonemic awareness. The first grade teachers used this instruction with their students that fall. Once again, the assessment was used throughout the year to monitor progress.

The authors found that the groups’ scores improved in the first grade classroom, especially in phoneme segmentation, during the second year of the study. However, none of the groups met the minimum scoring criteria on the assessment over the course of the whole study. This may be a result of how the strategies were taught in each classroom, and how ‘teacher friendly’ the materials were to use. Results from this study demonstrated that with an increase in phonemic awareness instruction, students and teachers were able to use different strategies to gain more knowledge in the early stages of beginning to read.

Just as Abbott and Walton (2002) provided evidence of Phonemic Awareness components and their effect on beginning readers in kindergarten and first grade, Musti-Rao and Cartledge (2007) also explored the effects of an intervention using a supplemental reading program to boost performance in the areas of Phonemic Awareness and Alphabetic Principle skills.

The study conducted by Musti-Rao and Cartledge (2007) explored the effects of adding a supplemental reading intervention program, which included phonemic awareness and alphabetic principle skills for students that were identified as at-risk for reading failure. The purpose of their study was to determine whether or not a research-based supplemental reading program would be taught effectively by the researcher and kindergarten aide. The authors hypothesized that
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students who are at-risk for reading failure can still be taught phonemic awareness and letter sound knowledge, with early intervention and support. With this effective reading program in place, at-risk students should be able to achieve higher reading scores when it is completed. The dependent variables in the study were the measures for collecting the data, used by a nationally named standardized assessment, which monitored students’ progress. Researchers also developed a pre/posttest that measured specific skills that were then introduced during instruction time. The independent variable was the difference in the timing of lessons that the students received during instruction; eight weeks vs. twelve weeks vs. sixteen weeks.

The Early Reading Program was implemented in seven urban elementary schools in the Midwest. From these schools, approximately ninety students in seven different kindergarten classrooms received seven months of supplemented instruction. After receiving the instruction, the standardized assessment was given again, and from those scores, students who still scored at or below the twentieth percentile were selected for the sample. The sample consisted of approximately seven kindergarten students and one first grade student, with the ethnic breakdown of 84% White, 13% Latino-Hispanic, and 2 were African-American. The schools that these children attended all qualified for Title 1 funding and free and reduced lunches. To be titled “at-risk”, students were coming from low socioeconomic backgrounds, and attended an urban school.

As the study began to take place, the reading program was introduced and taught to the kindergarten teachers, as well as the aides in the classrooms. Once training was complete, instruction was introduced to the students. The students had their regular reading class with the classroom teacher, and then were pulled out for an extra twenty minutes of supplemental reading instruction three days per week, for sixteen, twelve and eight weeks, respectively. There were
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three groups of students, and each group moved faster than the other, depending on the need of the students. During instruction, the researcher focused on phonological awareness, writing development and orthography. All the activities that were done were modeled first, and then the students were guided to put it to practice individually.

The authors measured the outcomes of the students’ progress through the nationally standardized assessment that was earlier discussed. Measures included tests on Phoneme Segmentation Fluency (PSF), Nonsense Word Fluency (NWF), and Curriculum Based Assessment (CB). After looking at the results tables, scores increased for all students in each group. Also, the parents of these students thought the reading program was successful and effective. Not all the students’ in the groups met the assessment goals per say, but all managed to achieve higher scores than on the pretest they were given. This lack of achievement in some areas just proved that some of the reading strategies were not enough for some students to make significant progress; due to lack of time or how below grade level the students may have been when the program began.

Like Musti-Rao and Cartledge (2007), Linklater, O’Connor & Palardy (2009) also studied the effects of a Phonemic Awareness program with English Language Learners (ELL) and English Only (EO) students identified as “at-risk” for reading failure.

The study conducted by Linklater, O’Connor & Palardy (2009) assessed the ability of English phonemic awareness to predict kindergarten reading performance and examine the growth on assessments for English Language Learners (ELL) and English Only (EO) students. The purpose of their study was to measure growth rates for three different subtests of a nationally named standardized assessment to predict kindergarten reading outcomes in ELL and EO students. Gender and language status were also taken into account to determine if reading
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performance was affected by the end of the kindergarten year. The authors’ labeled the independent variable as the ELL students vs. the EO students and if growth was made over the course of the kindergarten year. The dependent variables were the results of a nationally named standardized achievement test that measured students’ fluency.

The sample consisted of approximately 400 half-day kindergarten students at four elementary schools. These schools came from two different school districts in southern California. The districts both served a lower socioeconomic Hispanic population, and English was the language that instruction was taught. Of the students, about half were males, and the other half females; more than half of that population was labeled as EO, and the others were then labeled as ELL. The students labeled as ELL are classified this way due to the California English Language Development Test, and their Language English Proficient scores.

The students who were initially selected had participated in a tier-2 intervention program for 45 minutes per week. Students were selected from this larger study to participate in this intervention based on their low performance on literacy and vocabulary measures. These students—both ELL and EO—were given a standardized test to determine fluency and growth in these areas: Initial Sounds Fluency (ISF), Phoneme Segmentation Fluency (PSF), Combined Phoneme Segmentation Task (CPST), and Nonsense Word Fluency (NWF). The assessments listed as ISF, PSF, CPST and NWF were given to the students during the fall, winter and spring of their kindergarten year. Through testing, the researchers used a 3 level model, which looked at measurement of assessments, the children in the study, and the classroom effects on the student during reading instruction. Gender and language status were also taken into account during the growth of this model to find out if they had an effect on how learning took place.
The authors found that the ELL and EO students did differ on the scores that were produced during the school year. On average, children in both ELL and EO increased their scores from the beginning of the year to the end, but EO students’ scores improved significantly more than the ELL students. The test that the ELL students had the most trouble with was the ISF subtest, which tested for initial sounds. Both students’ individual backgrounds and different classroom environments contributed to how the reading skills increased or decreased over the course of the year as well. Gender differences seemed to vary as well across the two groups of students; not which group performed higher on the tests, but which group increased their scores at a faster rate. The girls’ rate increased faster than the boys’ on all subtests except for the CPST test. These scores helped researchers to indicate that the boys were behind the girls during the course of the school year, but gender was not a significant factor in determining reading ability. Overall, there were no significant differences between ELL and EO students’ growth rates. The ISF tests proved to lead to later reading success for ELL students, and the CPST test also predicted later reading ability for both groups, due to the fact that during the test, the examiner was able to model and practice problems with the student before actually giving the test. As the student gave a response, the examiner was also able to give feedback on a correct or incorrect response. This allowed for students to achieve better scores on average. In conclusion, in order for proficiency to take place between all students, Linklater, O’Connor & Palardy (2009) suggest early screening and literacy instruction to prevent reading failure (Linklater et al., 2009, p.392).

Just as Linklater et al., (2009) suggested how important early screening and literacy instruction is to prevent reading failures in students, Hogan, Catts & Little (2005) would agree and also suggest that phonological awareness skills are assessed in young students to reduce future reading failures.
The study conducted by Hogan, Catts & Little (2005) explored the effects that phonological awareness skills play into a students’ daily life, in terms of how they learn to read and decode new words. The purpose of their study was to investigate the usefulness of phonological skills assessments to determine whether or not it predicted early reading. The researchers came up with two hypotheses: 1) both word identification and phonological awareness would be significant predictors of word recognition up to second grade, after it was measured in kindergarten, and 2) the second grade measure of decoding would predict word reading up to fourth grade. The dependent variables in the study were the results of a nationally named standardized assessment of decoding and fluency.

The sample consisted first of over 7,000 students from many different demographic settings. Of those 7,000 students, approximately 600 were randomly chosen to participate. More than half the sample of students had speech and/or language impairments, and all spoke English.

The study occurred over two sessions; lasting approximately two hours each session. The type of assessment that was administered was dependent on the grade level of the students. The kindergarten students were given tests of phonological awareness and letter identification. The phonological awareness test was syllable/phoneme deletion, and the letter identification test asked them to name upper and lowercase letters in the alphabet. Both of these assessments were derived from a nationally named standardized assessment. The students who were in second and fourth grades were given the same phonological awareness test, and also phonetic decoding and word reading subtests. The phonetic decoding test asked students to decode nonwords, which would increase in length and complexity as the test went on (Hogan, Catts & Little, 2005). The word reading test asked students to read words orally just as they appeared on the page.
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In order to get results, researchers needed to weight some of the students’ scores, due to more than half of the sample having language impairments. In order to weight scores, researchers weighted all the data on these students, including demographics, gender, and IQ in order to have a more stable sample. Researchers then used a path analysis, which allows data to be analyzed in complex relationships—such as weighted scores (Hogan et al., 2005, p. 289).

The first hypothesis researchers wanted to analyze was if phonological awareness would predict word reading in second grade, if measured in kindergarten. Their hypothesis proved correct. The second hypothesis that was examined was whether phonological awareness would predict word reading and/or phonetic decoding in fourth grade, if measured in second grade. This was not the case, and it did not prove to be significant enough to show correlation. Researchers determined that phonological awareness skills were identified in kindergarten and second grade, but did not predict word reading in fourth grade, since students would have developed more complex reading strategies to help them decode unknown words. Phonological skills and word reading in second grade showed a relationship, but phonological awareness skills and word reading in fourth grade did not.

The usefulness of phonological awareness assessments does in fact predict word reading when students were tested in kindergarten and second grade. When studied in second to fourth grade, it was determined that phonological awareness should be used to make predictions about how a future reader will perform initially, but should not be the only form of assessment used when designing specific interventions, due to the fact that students in fourth grade are at a higher reading level.

The amount of text a student makes an effort to read over a lifetime can vary on their progress both in and outside the classroom. Many variables are taken into consideration as to
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how a student performs using skills and strategies put forth by their classroom teachers, such as their knowledge of sight words, rhymes, or just their attitude towards reading in general. It is crucial for students to have the skill set necessary for them to succeed in reading. Just as Hogan et al., (2005) described the importance of having phonological awareness tests administered to students to prevent reading failure, Sperling and Head (2002) explored the importance of having a strong phonological and phonemic skill set in order to increase motivation in young readers.

The study conducted by Sperling and Head (2002) addressed the development of reading attitudes, in comparison to literacy skills students gain as they move through early years of instruction, mainly prekindergarten and kindergarten. Their purpose was to find out if a student’s motivation towards reading increased due to literacy skills becoming mastered. The researchers hypothesized that if a reader’s motivation is increased and literacy skills are mastered, they will make a concerted effort to learn how to read, and become more successful and engaged in the reading process. The dependent variables in this study are the assessments that were administered at different times of the school year to the participants. Assessments included: two phonological awareness tests, a reading attitudes test, two rhyming tests, alphabet recognition and sight word lists.

Participants included approximately forty prekindergarten and kindergarten students; all of which attended the same school. Researchers divided students into three different cohorts and the students were assessed at different times of the school year. The first cohort consisted of approximately twenty prekindergarten students, whose ages ranged from 50 to 72 months. These students were given the seven assessments in October and January of their prekindergarten year. The second cohort consisted of approximately ten kindergarten students, whose ages ranged from 64 to 83 months. These students were given their seven assessments in January and May of
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their kindergarten year. The third and final cohort consisted of approximately fifteen prekindergarten students, whose ages ranged from 52 to 64 months. This cohort was tested four times, in January and May of their prekindergarten year, and then in October and May of their kindergarten year. All the participants in this sample were in full day classes, and received whole language literacy instruction.

The study occurred over the course of two years, and the students who were placed in the first cohort were administered assessments first. All assessments were administered aloud to students on an individual basis. The first two assessments were nationally named standardized tests that asked students to identify same and different initial sounds. The third assessment measured reading attitudes for in and out of school reading activities and library reading activities. Students were asked how they felt about each statement and colored a ‘feeling word’ on a scale to determine scores (Sperling & Head, 2002). The fourth and fifth assessments measured rhyming skills. Students were asked to say a rhyming word to the one presented to them, and their answers were measured on a rhyming and non-rhyming word scale. The sixth assessment asked students to identify lowercase letters in the alphabet, and the seventh and final assessment presented to students asked them to read a list of sight words until five in a row were missed. The number of correct words was what determined their score.

In cohort one, reading attitudes of students remained constant compared to the other two groups. There was also an increase in all literacy skills, except for rhyme discrimination. Researchers believed that this was due to the fact that not enough time was allotted to fully test the students in an appropriate manner. Alphabet recognition also was not a high score because the students had not learned all the letters just yet in the middle of their prekindergarten year. In cohort two, researchers found a decrease in reading attitudes, but an increase in alphabet and
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Sight word recognition. There was no increase in the rhyming aspect because it had been thought that students had already mastered these skills (Sperling & Head, 2002, p. 235). Finally, cohort three also had decreased reading attitudes, but just like cohort two, there were increases of alphabet and sight word recognition. Rhyme discrimination increased as these students moved from prekindergarten to kindergarten, respectively. The decrease of reading attitudes could be due to the fact that summer vacation was factored into the study.

Ultimately, across all three cohorts, alphabet and sight word recognition increased as students moved from prekindergarten to kindergarten. These two literacy aspects are an important part of any kindergarten curriculum, and are an early predictor of reading with beginning readers. The research in this study also proved that assessing beginning readers is a very beneficial way for teachers to take into account where their students fall, in terms of literacy development.

Due to the power phonemic awareness has on a reader’s ability to develop reading skills, Yeh and Connell (2008) developed a study that proved just that. Yeh and Connell (2008) agreed with Sperling and Head (2002) that much of reading development has to do with a reader’s motivation and personal gains throughout their literacy development. Without the basics of phonemic awareness, a young reader’s reading focus gets lost. Just as Sperling and Head (2002) promoted the development of phonemic awareness, Yeh and Connell (2008) agreed that instruction of phonemic skills leads to a reader’s acquisition of those important skills, which predicts early reading and is important in the development of beginning readers.

The study by Yeh and Connell (2008) explored the effects of rhyming, vocabulary and phonemic awareness instruction on phoneme awareness in Head Start programs. The purpose of their study was to train teachers in Head Start to better develop phonemic awareness skills, such
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as segmentation or blending, in the young students that attended their programs. Researchers hypothesized that rhyming and vocabulary activities may also aid in developing phonemic awareness skills, in a ‘school setting’ that had none in place. The participants were split into three different treatment groups, so the variables consisted of the different instruction each group was given: 1) Phoneme Segmentation, 2) Rhyming and 3) Vocabulary Development.

Participants in this sample consisted of approximately 130 students from sixteen Head Start classrooms. Students ranged in age from 4 years, 3 months to 5 years, 2 months. The students’ demographic were primarily African-American, making up seventy-two percent of the sample population. Eighteen percent were Hispanic, six percent White and four percent Asian (Yeh & Connell, 2008, p. 246). All students came from low-income families, and all were non-readers.

The study began by training the teachers in the Head Start program in the three areas of focus: phoneme segmentation, rhyming and vocabulary development. Each teacher was trained in workshops, once at the beginning of the study, and then four weeks after. Once training was in place, students were given a pretest on seven different areas of literacy. The first was a nationally named standardized assessment that tested for phonemic awareness, segmentation, blending, deletion and substitution. The next was a subtest of the first assessment, which tested students on letter-sound knowledge. Students were shown a letter, and were required to make its sound. Decoding was the next test, and students were shown nonsense words and asked to read each word. Another nationally named standardized assessment was use to test for word recognition. Rhyming was the sixth test, and students were asked to produce rhyming words. The final assessment tested students on their vocabulary knowledge. Once the pretests were completed, students were randomly placed into the three different treatment groups: Phoneme Segmentation,
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Rhyming and Vocabulary Development, respectively. The teachers who were trained to implement instruction in these three groups did so in a small group setting for approximately 25 minutes, twice per week. During this time, teachers were observed randomly by the researchers, and then given a survey at the end to determine the program’s effectiveness.

The first group was instructed on phoneme segmentations. Students were required to do activities on segmenting, blending and substituting 3-4 letter words, and writing short sentences. The second group was exposed to rhyming activities. Teachers were required to follow a curriculum and produce activities such as; “A cat is wearing a ___ (hat)” (Yeh & Connell, 2008, p. 248). The third group was instructed around vocabulary development. Teachers were trained on teaching new vocabulary strategies that transferred over to the students during instruction time. They were also required to read more books to children and stop and explain meanings of new words that came up in the readings, to aid in this development. Questions before, during and after reading helped check for understanding as well. After the fourteen-week instruction period ended, students were given a post-test on the seven subtests given prior to the study beginning.

The researchers found that each group made fairly significant gains from the pretest to the post-test. The group that was instructed around segmenting made greater gains than the rhyming or vocabulary groups. However, when rhyming and vocabulary development were examined on whether or not they were good predictors of reading development, the overall gains did not prove this hypothesis correct. Ultimately, phoneme segmentation and blending skill instruction proved more effective in developing reading abilities in beginning readers than instruction on rhyming or vocabulary.

In review, these studies showed the importance of having a phonemic awareness program built into the everyday reading programs that were already in place in schools. As Abbott and
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Walton (2002) designed their study, they found that many teachers did not have a phonemic awareness component built into their curriculum. By using specific programs and interventions in their study, and others, students were able to increase their knowledge and become prepared for later success in reading. According to Musti-Rao and Cartledge (2007), strong evidence has been published shows “phonemic awareness and letter sound knowledge are needed to promote the acquisition of reading” (Ball & Blachman, 1991, as cited in Musti-Rao & Cartledge, 2007, p.70). Yeh and Connell (2008) would also agree with this statement, add that children who lack these skills remain poor readers. If teachers can get students to make an effort in their reading and make it meaningful, students will succeed. According to Sperling and Head (2002), “if children are interested and motivated to read, they will make more of an effort to learn reading, and will become more successful and engaged readers” (p. 233). Students of preschool and kindergarten ages were put in “literacy-rich environments” and succeeded. However, students that were labeled “at-risk” led this lifestyle due to environmental factors around them or lack of educational experience, either by themselves or their parents.

In the study of Linklater, et al., (2009), providing intervention to kindergarten students who were struggling in reading was important so it does not continue throughout their entire lives. Without early identification of these students, poor readers were more likely to remain this way. Hogan et al., (2005) would also add that the “assessment of phonological awareness to preschool and kindergarten students provides critical insight into the sills that children use to learn to read” (p. 285). Properly assessing students with the correct materials would hopefully lend itself to early prevention in the reduction of reading failure.
The following studies examined the effect of music and rhythm instruction on reading ability in beginning readers. Different forms of assessments were used to determine an association between reading and music and/or rhythm instruction, which was an effective way to link music and phonemic awareness skills and instruction.

The study conducted by Eastlund Gromko (2005), explored the effect of music instruction on phonemic awareness in beginning readers. The purpose of the study was to determine if music instruction was related to a young student’s knowledge and development of phonemic awareness and reading abilities. The author hypothesized “active music making and the association of sound with developmentally appropriate symbols may develop cognitive processes similar to those needed for segmentation of a spoken word into its phonemes” (Eastlund Gromko, 2005, p.199). The independent variable was the degree of music instruction provided to two kindergarten classrooms: one classroom received music instruction versus the classroom that received none.

The sample consisted of approximately 100 kindergarten students who were from two elementary schools in the same district, in the midwestern area. Kindergarten students at both schools received the same amount of reading instruction, and both were given a nationally named assessment periodically throughout the school year. Prior to the study, neither school used music to supplement their instruction for kindergarten students.

This study began as researchers administered the assessment to kindergarten students at both schools. In the fall, each student had been given subtests on initial-sound fluency (ISF) and letter-naming fluency (LNF). In the winter, the students were tested on ISF, LNF, phoneme-segmentation fluency (PSF), and nonsense-word fluency (NWF). The spring testing included
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subtests measuring LNF, PSF, and NWF. Researchers used this data to understand students’ beginning reading skills and abilities.

The kindergarten students at both the control school and the treatment school were engaged in the same amount of reading instruction time per day. However, the treatment school received music instruction for 30 minutes per week, and the control school did not. The researchers recruited four advanced music-methods students to teach music to the kindergarten students each week. Their theory of teaching music to the students came from Jerome Bruner’s theory of cognitive development that suggested children develop concepts through “active experience” (Bruner, 1966 as cited in Eastland Gromko, 2005). During treatment, the kindergarten students learned a folk song and an accompanying simple movement; additionally, students learned the meaning of rhythm, beats, and different pitches. The students were then introduced to simple instruments, such as rhythm sticks, maracas, or cymbals. These instruments helped the students reinforce the beats they had just learned and continued to use when ‘reading’ music or repeating rhythms. The authors suggested that this ‘reading’ of the music supported fundamental aspects of print literacy; for example, children followed music beats/notes from left to right, just as they would when reading text. After four months of this musical instruction, the researchers administered the same pretest measures as posttest assessments. Students in the treatment group obtained lower scores on the LNF and NWF than students in the control group. The treatment school’s scores were lower than the control school’s in LNF and NWF. The researchers suggested that this difference might be related to the students’ socioeconomic status. Approximately 20% of the students at the treatment school qualified for free or reduced lunches, compared to approximately 10% of the students in the control school. The treatment school also qualified for Title 1 funding. Posttest mean scores demonstrated significant differences between
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the groups in relation to far as phoneme segmentation fluency, which was what the researchers had hypothesized would occur. Music instruction did have an effect on the development of phonemic awareness in beginning readers developed.

The author suggested that the control group may have at times outperformed the treatment group for two main reasons. First, reading instruction implementation might have differed across the schools; selecting classrooms from the same school for future experiments would help to control for this confounding variable. Additionally, kindergarten students at the treatment school received much more attention from the advanced music students; whereas the control school did not. The students in the control school might have been more apt to perform if the university students were teaching them.

As Eastlund Gromko (2005) studied the effect of music instruction vs. no music instruction and the differences in how reading abilities progressed, David, Kirby, Smithrim & Wade-Woolley (2007) investigated rhythm as a potential influential factor in reading development of first grade students.

The study conducted by David, Kirby, Smithrim & Wade-Woolley (2007), investigated rhythm as a potential factor in reading development of first through fifth grade students. The purpose of the study was to determine if rhythm and reading had any relationship in the areas of phonological awareness, naming speed, word reading and pseudo-word reading. The author hypothesized students who receive reading instruction using rhythm or music intervention will improve their phonological awareness skills. One of the dependent variables in the study was the results of a nationally named standardized assessment that measured phonological awareness in five different areas: 1) sound oddity, 2) blending phonemes, 3) blending onset and rime, 4) phoneme elision, and 5) sound isolation. Another assessment was administered which dealt with
measures of naming speeds of colors and pictures. A third assessment was from another nationally named standardized assessment that measured a reader’s ability to read real and pseudo-words in isolation, in Word Identification and Word Attack. Lastly, a rhythm assessment was used, which tested five different rhythmic tasks set to music.

The sample consisted of approximately 50 students who were from three schools in the same district in Canada, with a range of socioeconomic backgrounds. All students were tested in the fall of first grade, and each fall thereafter, in the grades of 2-5 in the years to come. All tests were given by the researchers on a one-to-one participant basis.

The study began in the fall of the students’ first grade year, as researchers administered the phonological awareness subtest, followed by the naming speed, reading ability and rhythm assessments. Researchers used these exact same tests each year, until the students reached fifth grade. As the school years went on, the sample reduced by approximately 3-4 students each year, ultimately resulting in approximately forty students by the end of the study in grade five.

The students at the three schools were engaged in the same assessments each time, and all students were administered the test the same way. In looking at the students’ results, researchers first had to determine whether rhythm had enough “power to predict reading ability uniquely, or whether its ability to predict reading was shared with phonological awareness and/or naming speed tests” (David et al., 2007, p. 176). Since this seemed to be the case, two first grade reading scores in word reading and pseudo-word reading tests served as the dependent variables. In these two cases, rhythm was able to predict reading ability up to grade 5. The next variable that was studied removed the phonological awareness piece, and looked at rhythm in isolation in the Word Attack and Word Identification tests. The results of these tests were confirmed false; proving that rhythm never ‘survived control’ when it stood alone (David et al., 2007, p. 177).
Finally, the relationship between naming speed and rhythm was studied. With naming speed removed, rhythm did not play a significant role in prediction reading ability in first grade, but a distinctive variance in second and third grades with Word Identification and second, third and fifth grades Word Attack.

The researchers suggest that when phonological awareness activities and naming speed is taken away, rhythm does not account for a significant amount of variance in first grade reading predictability (David et al., 2007). The study did conclude that the two main predictors of reading ability were phonological awareness and naming speed from first to fifth grades, respectively. Additionally, the strongest relationship came in the fifth grade, correlating rhythm and word reading. Researchers can account for this because in first grade, students are reading ‘fairly simple, monosyllabic words’ (David et al., 2007) and rhythm is overlapped in their direct instruction as they learn these new words. As students reach fifth grade, their word identification is increased to more polysyllabic words; thus providing a more complex demand in the words they read. Also, the students are using more of a rhythm to decode the longer, more difficult words. Researchers conclude that rhythm is definitely a phenomenon that needs further study, to determine its impact on predicting reading.

As David et al., (2007) investigated the effect rhythm as a potential factor in reading development of first through fifth grade students, Lamb and Gregory (1993) studied the effect of how musical listening skills applied to reading ability, and whether it was a factor when Phonemic Awareness was studied.

The study conducted by Lamb and Gregory (1993), explored the relationship between phonemic and musical (nonphonemic) listening skills to reading ability. The purpose of their study was to determine a relationship between reading, phonemic awareness skills and musical
The authors hypothesized that children who achieved high scores on the tests of musical ability would also score highly on phonemic awareness and phonics skills tests. The dependent variables in the study were the reading and music tests measuring the students’ knowledge on phonemic awareness concepts and musical ability, both regarding listening skills to complete each test.

The sample consisted of approximately twenty children from a primary school class; half were males, and the other half females, with their ages ranging from four to five years of age. This study occurred individually with each student, over the course of five sessions.

In the individual sessions with a researcher, children were given two different tests: one focused on reading and phonemic awareness, and the other focused on musical ability and listening skills. The reading test that was administered focused on four subtests: concepts about print, word matching, letter sounding and word reading. The concepts about print focused on where to begin reading; going from left to right. The word matching allowed the children to match words in different columns. The letter sounding focused on the children to name letters and the sound it made, in random orders. And, the word reading allowed the children to read isolated words aloud, and if the word was unknown, the children were asked to sound it out. After these subtests were given a phonics reading test was administered, involving consonant blends and reading nonsense words or syllables.

After the reading portion test, the musical ability tests were given. The authors stated that because there were no official tests that went below the age of five, they were able to design one on their own. This test contained the two subtests of pitch awareness and timbre awareness. Pitch awareness concentrated on the child listening to pairs of notes or chords and asked whether they
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were the same or different in pitch. Timbre awareness allowed the child to listen to two sounds and then asked whether they sounded the same or different on the basis of the sound quality.

The authors found that children who were able to isolate and manipulate phonemes in words on the phonemic awareness assessment, had higher success on the reading portions, than those who had difficulty on the phonemic awareness portion. However, the results from the music ability test proved pitch discrimination significantly correlated with both reading tests, but the timbre discrimination did not significantly correlate with any of the assessment measures. The authors seemed to think that achieving a high score on listening and distinguishing different sounds beneficial to how reading was learned and processed. As a result, the authors conclude that musical training should be an essential part of the school curriculum.

Just as Lamb and Gregory (1993) explored the relationship between phonemic and musical (nonphonemic) listening skills to reading ability, Register, Darrow, Standley & Swedberg (2007) moved into a slightly different direction and looked at how music enhances the reading skills of students with and without reading disabilities.

The study conducted by Register, Darrow, Standley & Swedberg (2007) explored the notion of adding a music curriculum to the already present reading curriculum in three second-grade classrooms. The purpose of their study was to determine the effectiveness of using music as a remedial strategy to enhance the reading skills of second grade students and students who have been identified as having a specific learning disability in reading. The authors hypothesized that by adding a music curriculum into the current reading curriculum, students’ with a learning disability should be able to show more significant gains with their reading skills, than those who do not receive the music component. The dependent variables in the study were the reading skills that were evaluated pre and post music intervention, conducted by a nationally named
standardized assessment of reading comprehension, which included subtests of decoding, word knowledge, and reading comprehension (Register et al., 2007). The independent variables focused on activities that would promote the three reading skills the control group was tested on: decoding, word knowledge and reading comprehension. Each activity taught had a different music focus, such as “listening, singing, instrument playing and movement” (Register, 2007, p. 28). The regular reading curriculum was used by all teachers in both groups as a guide.

The sample consisted of approximately thirty second-grade students, and approximately ten of those students had a learning disability. The students were from a public school in a Southeast region of the United States. The researchers then split the students between two groups: the treatment group contained only the students with learning disabilities, and the control group contained the students without.

The study occurred over a four-week period, and the students received instruction three times per week. Before instruction was given, a nationally named standardized assessment was given to evaluate students in the areas of decoding, word knowledge and reading comprehension. This assessment was meant to “organize students into appropriate instructional groups, identify students who were ready for more advanced instruction, and ultimately evaluate the effectiveness of the reading programs” (Register et al., 2007, p. 31).

In the treatment group, music instruction was introduced within each reading lesson, with a focus on the three subtests of the standardized assessment. Each lesson allowed students to listen to music, sing along to a rhyme, or use special instruments when reading. This movement permitted students to utilize their musical skills to enhance their reading skills by allowing students to use movement and music to aid in decoding unknown words, such as “Movement Word Build.” Students sang a song that helped them match phonemes to a blend (c to –at)
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(Register et al., 2007, p. 29). The word knowledge activities used activity songs such as “Froggy Went a Courtin” to make sure the new words encountered were defined, such as ‘courting’ or ‘pistol’ (Register et al., 2007, p. 30). The final activities researchers taught focused on reading comprehension. Within each lesson, a reading strategy and story component was practiced. Students would learn the strategy of sequencing by placing story cards in order, and use music to help them retell the story. Students also learned how to bring these skills back into their regular reading curriculum when the researchers’ time was over. After the four weeks of lessons were finished, the standardized assessment was given again, and results were tallied by the researchers.

The authors found that both treatment and control groups did make gains from pre to posttest scoring on decoding and word knowledge. Reading comprehension scores remained the same, and did not make a significant improvement in both of the groups. The students with learning disabilities did receive effective treatment overall, because of the intervention strategies that were put in place. Because the student sample size of learning disabled students was so small, it also allowed for these students to actively participate in a smaller group setting; thus resulting in greater gains on the assessment. They also benefitted from having their normal reading lessons, and ones with music instruction. Results from this study indicate that even short-term music intervention with any reading curriculum has the potential to be beneficial to improve reading skills and strategies, for students with or without a learning disability.

Just as Register et al., (2007) provided evidence showing music instruction builds better reading skills in students with and without learning disabilities, Corrigal and Trainor (2011) explored a similar avenue regarding how the length of musical training improves reading scores among students who play an instrument.
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The study conducted by Corrigal and Trainor (2011) explored the impact musical training has on reading skills; specifically word decoding and reading comprehension. The purpose of their study was to determine if the length of musical training a student had had any impact on their reading skills. The authors hypothesized that the more musical training a student had, the higher the impact it had on their reading skills and strategies. The authors also hypothesized that a high reading score stemmed from a student’s background, such as; socioeconomic status, IQ, age, and parent involvement. The authors chose to do a correlational study, so all the students were in one controlled group. The differences that came up were due to a student’s musical training and how long he or she had played an instrument.

The sample in this study included approximately fifty students, ranging from ages six to nine years of age. Students’ musical training also ranged from one to six years. All students received the same method of instruction, and their parents were also involved. The parents were required to fill out a questionnaire with questions about their child’s demographic, IQ, socioeconomic status, and the parent’s highest level of education achieved. Researchers were curious to see if any of these impacted how well the student scored on the assessments. The study lasted for two days, and the students participated in it for one and a half hours each day. Two nationally named standardized assessments were given; one that tested the students on word identification and passage comprehension, and the other tested rhythm and tone.

The results the researchers found proved their hypothesis correct; the more musical training a student had, the higher their reading scores were. Their hypothesis also proved correct when following parental involvement and educational achievements. Ultimately, a correlation was found between length of musical training and reading comprehension, but not between musical training and word decoding. These results did not prove that music and rhythm predict
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word decoding, mainly due to the age of the students involved. Evidence supports the notion that because the students’ ages ranged from six to nine, word decoding was something they would have been taught earlier than age six when they were just learning to read (Standley, 2008, as cited in Corrigal & Trainor, 2011). Other factors impacted a student’s success in addition to how they could decode words, such as how much time they spent reading each week or their general intelligences (Corrigal & Trainor, 2011).

Ultimately, the age and IQ of the students played a major part in whether reading skills were predicted by the length of musical training. These students had high intelligences, which put them a step above the norm. Students who played musical instruments already are good students and better readers, and they are able to focus their attention on detail; not only in reading, but music as well.

As Corrigal and Trainor (2011) examined the impact musical training has on reading skills, specifically in word decoding and reading comprehension, the authors Anvari, Trainor, Woodside and Levy discussed similar topics, and contributed to Corrigal and Trainor’s study (2011) by investigating the relationships between phonological awareness, music perception skills, and early reading skills.

The study conducted by Anvari, Trainor, Woodside and Levy (2002) explored the relationship between phonological awareness, musical skills and ability, and early reading skills. The purpose of their study was to determine if phonological awareness skills contributed to the auditory mechanisms required for reading, as well as learning music, due to the fact that speech and language in reading are closely related in music as well. The authors hypothesized that phonological and phonemic awareness, linked with the auditory memory and vocabulary, predict reading development in readers. The dependent variables in the study were the subtests of the
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assessments researchers measured students’ knowledge on: 1) music, 2) phonemic and phonological skills, and 3) vocabulary.

The sample consisted of approximately 100 four and five year olds from different schools and daycare centers in Canada. Researchers used different assessments over five days with these students; with each of the sessions lasting approximately thirty minutes. The standardized measures of assessment were given to each student on an individual basis. Each student was tested on both phonological and musical skills. The subtests included in the assessment are as follows: Rhythm Generation, Rhythm Production, Blending, Same/Different Rhythm Discrimination, Oddity, Same/Different Chord Discrimination, Rosner, Chord Analysis, Same/different melody discrimination, Digit Span, Mathematics, and two nationally named standardized forms of assessment in vocabulary and reading.

As a result, the researchers first studied the effects that music played on the phonological skills that were assessed. Both the four and five year-olds in the study accounted for variance in the following areas of musical skill: Same/Different Melody, Same/Different Chord, Chord Analysis, Same/Different Rhythm, and Rhythm Production, which meant that because of their young ages, rhythm abilities were able to be measured, and they correlated highly (Anvari et al., 2002). Next, researchers looked to see if music predicted phonemic and phonological skills, or if it predicted reading on its own, when phonemic variance was taken out. Ultimately, when both groups added music and phonemic skills together, the findings showed significant gain in predicting reading ability. The overlap between the auditory sounds needed for music ability were also found when learning to read and produce sounds, which explained the relationship in this study (Anvari et al., 2002).
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The researchers then looked at the possibility that auditory memory was involved in the relationship between music and reading. This relationship took the subtest Digit Span and phonemic awareness together, which explained the student’s overall scores. Ultimately, because these students were so young and still developing many of the phonological skills that the researchers were testing them on, auditory memory seemed to become less important as they continued to learn phonemic awareness skills and strategies in school. Musical skills were correlated with auditory memory, and thus continued to predict reading, even after memory was taken out of the equation.

Vocabulary size was another area that was studied to see if it was a part of the relationship between reading and music. Researchers predicted that it might be, due to the fact that both music and reading correlated with vocabulary when the students were assessed (Anvari et al., 2002, p. 123). In this set, the nationally named standardized assessment for vocabulary was studied. The students in the four year-old category had vocabulary scores that correlated with phonemic awareness, reading and musical ability, but the students within the five year-old category only had vocabulary scores correlate with phonemic awareness, and not music or pitch. In the end, vocabulary could not fully predict reading ability.

The results of this study indicate that music ability is a very strong predictor of phonological awareness and reading development within beginning readers. “Music is also a strong predictor of reading skills, even when phonological awareness is removed” (Anvari et al., 2002, p. 126). Just as Anvari et al., (2002) had a hypothesis that was proved correct, Lamb and Gregory (1993) had similar results, when they studied the relationship between pitch and reading development. The conclusion that phonological awareness has a relationship with musical ability suggests that one’s auditory memory factors into it. Listening to sounds in music and listening
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and repeating phonemic sounds in reading are essentially the same, causing this relationship to occur. Ultimately, researchers found a relationship between music and reading, without the prediction of vocabulary.

In review, these studies showed that music instruction is indeed a factor in the development of phonemic awareness in beginning reading instruction. According to Eastlund Gromko (2005), music has been promoted as a way to enhance reading comprehension and the ability to read text by having children sing. Phonemic awareness is defined as “the ability to recognize that a spoken word consists of individual sounds or phonemes” (Eastlund Gromko, 2005, p.201), which helps to suggest the relationship between music instruction and reading skills. Students that are able to segment words and isolate sounds during reading instruction should potentially be able to associate those sounds into music instruction, which in turn helps their sound processing. According to Anvari et al., (2002), music and reading skills trigger somewhat of the same “auditory memory mechanisms that allow readers to overlap their phonological awareness and music/rhythm skills when reading is taught” (p. 111).

Subsequently, in the study conducted by Lamb and Gregory (1993), pitch and timbre awareness aided in the students’ ability to identify and isolate different sounds during instruction. Through this process of distinguishing the different sounds, students were able to apply it to phonemic awareness activities, such as alliteration and rhyme. Overall, these studies implied that musical awareness can be a consistent predictor of reading ability and skill. Corrigal and Trainor (2011) would also agree with Lamb and Gregory’s statement. They, too, found that the “more musical training a student has, the more likely they are to have higher reading scores in word decoding and reading comprehension” (p.147). Register et al., (2007) designed their study around “using music as a skill or strategy to enhance reading skills of students with or without
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learning disabilities” (p. 23). Rhythm can also be a predictor of early reading skills, as beginning readers use rhythm as a way to enhance phonological awareness and fluency (David et al., 2007). As each of these music and reading components were taken into consideration, teachers would be able to shape their classroom reading instruction differently to provide students with a more balanced approach between music, rhythm and literacy.

Conclusion

It is important to take into consideration how children learn to read and what tools are used that allows reading to successfully develop over time. Due to the fact that a strong predictor of reading achievement is phonemic awareness (Abbott & Walton, 2002), it is essential for an early literacy program to incorporate phonemic awareness into everyday teaching. Children who are introduced to phonemic awareness and letter sound knowledge at this early age are able to reach higher levels of achievement than those children who are not. The children who are not introduced to phonemic awareness skills can then be labeled “at-risk” and experience reading failure for much of their lives. In order to prevent reading failure, more direct instruction and intervention should take place, according to Musti-Rao and Cartledge (2007). An effective intervention program should be full of the components that beginning readers need, such as phonemic awareness skills. By identifying these poor readers early on and providing intervention, the challenges these readers face might disappear. Measuring performance and providing intervention more frequently might ultimately lead to later success in school for struggling readers (Linklater, O’Connor, and Palardy, 2009; Hogan et al., 2005).

Once phonemic awareness is introduced, students begin to use the components of the program, such as alliteration, rhyme, segmentation or initial sounds. These skills become significant in the development of fluency, as a student reads (Eastlund Gromko, 2005). In order
for phonemic awareness instruction to become successful, teachers should perceive how music instruction plays an important role in the students’ development through the reading process. Through auditory sounds and perceptions of visual symbols within text, patterns and rhythms are used both in music and reading processing (Anvari et al., 2002). Students able to sing a simple song with a rhythmic pattern should also be able to segment words into its different parts (Eastlund Gromko, 2005). As readers connect sounds together to form pitch and rhythm in music, so too, does this happen when beginning reading takes place. High achieving students in musical ability should also carry over to high scores on phonemic awareness skills tests (Lamb & Gregory, 1993).

The reviewed studies provide information on an important aspect of the process students go through when learning to read and the connection to music that it has. Based upon the findings, the effect music and rhythm have on phonemic awareness instruction is combined to enhance reading to create a more interactive and successful process for beginning readers.
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CHAPTER THREE

Procedures for the Study

In the previous chapter, my theoretical perspectives regarding reading and musical skills provided evidence on how much of an impact music and rhythm have on beginning readers’ literacy skills. The purpose of this study was to investigate the effects music had on phonemic awareness instruction. Research has reported that phonemic awareness is a strong predictor of reading achievement (Abbott, Greenwood & Walton, 2002). In this study, music and rhythm became a factor which led to reading and decoding success. On the next few pages, the intervention plan and strategies used with my own classroom of beginning readers will be described.

Description of Sample Population

The students who participated in this study were all enrolled in full day kindergarten in a suburban, Catholic school. Their ages ranged from 5 to 6 years. Before the study took place, a consent form was sent home to each family, explaining the purpose of the study. Out of the sixteen students within the class, 6 boys and 10 girls, all but one form was returned, leaving fifteen students able to participate. During the middle of the intervention, one of the students transferred schools, leaving fourteen participants. The study began in early spring, and lasted approximately six weeks.

In the following section, the specific intervention and procedures will be described, which includes the phonemic awareness activities such as the poetry activities, used to aid beginning readers’ decoding skills, in the form of reading with a rhythmic feel.
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Description of Procedures

Over a period of six weeks, students participated in phonemic awareness rhyming activities approximately 60 minutes per week during the regular school day, in addition to the regular literacy activities taught during Language Arts time. Before intervention began, the students were each given the *Dr. Seuss Nonsense Word Test: An Assessment Sequence for Emergent to Beginning/Early Readers* (Appendix A). Only the short /a/ and short /o/ vowel patterns were assessed, as those were the vowel sounds that were the main focus on intervention. Specific procedures of this assessment are described in Chapter Four. Determination of the students’ decoding fluency allowed the researcher to provide a more complex approach with activities when teaching the two vowel sounds. Once students were tested, results were recorded for use at the end of the intervention to see if any changes occurred. The book, *Phonemic Awareness: Songs and Rhymes* by Wiley Blevins, was a resource that was used in instruction. The book contained poems for short /a/ and short /o/ vowel sounds that were put to rhythm and short nursery rhymes, such as “London Bridge.” The idea was for students to learn the poems through the form of music, using popular songs that they would have already learned.

During the first week of instruction, students were introduced to the short /a/ vowel sound, with the help of the poem, *Rags*. Along with the short /a/ words, the –ag word family was also introduced, as this was the focus of the poem. The researcher read the poem aloud first, and then gave each student a written copy of the poem. This exact poem did not have a song attached to it, but rather, as it was read, the reader made sure it was read in a rhythmic way that students would be able to pick up on the short /a/ vowel pattern through the rhyming words at the end of each line. After the poem was read once, the students were prompted to identify the words found within the –ag family. Students identified the words: *Rags, sags, wags, and zag.*
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researcher then instructed students to use text manipulatives to form these words, as well as others; such as: *bag, flag, nag,* and *brag.* The researcher gave students the text manipulatives, and recited clues as to what word was to be made, by scaffolding. The researcher knew students were proficient when students were able to produce the correct words each time. The researcher then asked the students to echo read, meaning, the researcher read a line, and the students then repeated it. The point was to get the students to make rhymes, and read rhythmically to enhance their own decoding skills as the weeks continued. During reading of this poem, students would also underline the short /a/ vowel words.

During week two, students were again introduced to another poem, *My Cat, Pat.* This time, the /at/ family was re-introduced, as students had previously learned this word family in the beginning of the year. Because this word family was familiar, students were able to identify the words that belonged within this family quite easily. Words such as: *cat, pat,* and *fat* were included in the poem, and other rhyming words were asked to be produced, using manipulatives to create them. This time, the words *splat, that* and *mat* were made. Students also used a rhyme to help them remember which words belonged in this word family. Using the –at family, it would have gone something like this:

“Mom and Daddy –at, had a baby /c/ whose name was cat!”

“Mom and Daddy –at, had a baby /f/ whose name was fat!”

Students used this rhyme throughout the year, and were able to adapt it easily to any word family they encountered throughout the year. Once words were identified, the researcher read the poem, one stanza at a time, and students repeated. Because the poem contained many of the sight words the students had been learning, the rest of the poem was easy for many to read. Students took turns reading the poem aloud, and everyone else would repeat after the reader. Once the poem
was complete, students went back through and highlighted the –at family words that the poem contained.

Week three was the last week for short /a/ words, and the students were introduced to the poem, *Apples*. This poem was a little different than the first two, because only the word *apple* contained the short /a/ vowel sound. However, this poem was to the tune of *BINGO*, and instead of spelling the word BINGO, they sang/read the word APPLE. Because there were not any word family words present within this poem, students relied on the familiar tune to help them decode and then read the poem. The researcher began by reading the poem, using a rhythmic tone, and once students were able to connect with the rhyme, they put it to the musical tune. Students were able to basically sing the poem each time as they read it.

When the three weeks of short /a/ instruction were finished, the posttest was given on the short /a/ vowels. The researcher had prior knowledge that the students had previously had instruction on different short /a/ word families, so scores should have increased at the end of this three week intervention.

During the last three weeks of intervention, the same format was used, but this time, the short /o/ vowel pattern was used and introduced to students. This vowel pattern was not one that students had previous knowledge of, since the classroom teacher had not taught it yet. Since the pretest was already given, instruction began right away. In week four, the students were introduced to the poem, *Higglety, Pigglety, Pop*, which was to the tune of Hickory Dickory Dock. The researcher again read the poem to the students, and students were able to repeat the reading. Students again used the “Mom and Daddy” word family rhyme to create the –op family words, such as: *mop* and *pop*. Manipulatives, or notecards, with the spelling pattern on one card,
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and the consonants on another, were also used to create words like flop, top, shop and cop.

Students reread the poem, and highlighted the –op words within it.

Week four students learned the poem, Popcorn. It was a short /o/ poem that contained more –op words, just like the week before. This time, the poem was not put to music, but in order to read it, students needed to make sure they were reading in rhythm. Because the –op family was taught the week prior, the researcher wanted to see how much the students retained. One student was asked to read this poem by himself, which he did, using the decoding strategies that had been taught previously. Students used manipulatives and highlighted the words within the poem as well.

During the last week of instruction, students were given the poem, Tick, Tock. The researcher wanted to find a poem this week that had three letters at the end of the word, instead of two, to see if the students understood the meaning of the instruction. During instruction time, students were directed to use the rhyming song they had learned in the previous weeks to help them decode the –ock words before actually reading. As the students sang, they found the word they needed to within the poem, and circled it. The researcher then directed the students to find a partner to read with. As the students read, the researcher was able to walk around the classroom, and listen for the things that were taught in the previous weeks. After the final week of instruction, the posttest was given on the short /o/ vowels only.

Description of Data Collection

In order to determine where the readers’ oral decoding fluency was, data was collected through the use of anecdotal notes after each lesson each week. Pretest and posttest measures included the Dr. Seuss Nonsense Word Test: An Assessment Sequence for Emergent to
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*Beginning/Early Readers* (Appendix A). In the next chapter, the results of the research will be presented and analyzed.

**Conclusion**

The purpose of this study was to investigate the effects music and rhythm had on phonemic awareness instruction with beginning readers, and to determine if their decoding skills increased as music and rhythm was introduced during reading instruction. Data collected through pretest and posttest measures, as well as observation during the six weeks, will be presented and analyzed in Chapter Four.
CHAPTER FOUR

Results

The purpose of this study was to investigate the effects music had on phonemic awareness instruction for beginning readers in five-year-old kindergarten. In Chapter Three, the procedures that were followed were described and the method of data collection was presented. This chapter discusses the results of the kindergarten students’ pre and post testing using the *Dr. Seuss Nonsense Word Test: An Assessment Sequence for Emergent to Beginning/Early Readers* (Appendix A) which consisted of the short /a/ and short /o/ vowel patterns, using nonsense words for testing. Students would read ten rhyming words; all of which presented one of the short vowel sounds. This assessment measured decoding skills of the students who participated. The data will be presented with a series of figures and graphs to represent progress.

Presentation and Analysis of the Data

The data presented in this section shows pretest and posttest scores from the *Dr. Seuss Nonsense Word Test: An Assessment Sequence for Emergent to Beginning/Early Readers* (Appendix A). Students who took this assessment were labeled as beginning to early readers, and this assessment tested their knowledge on how well they could decode nonsense words. The data is shown below and analyzed to explain the results.

*Dr. Seuss Nonsense Word Test*

The *Dr. Seuss Nonsense Word Test* (Appendix A) assessed emergent and beginning readers’ recognition of the most common word families/spelling patterns/rimes. All short vowel sounds were represented, and each subtest contained ten words. As the student moved through the subtest, the words became more complex, which allowed students to use their decoding skills. The words were presented to the student in isolation, and the student had three seconds to
identify the nonsense word. If it was correctly identified, it was marked. But, if it took longer than three seconds, it was incorrect, even if the word was spoken correctly. If the student identified the word incorrectly, the word they said aloud would be noted. When a student missed three items in a row, the test would be stopped. After all ten words were given, and the student scored 90% or above, the administrator would move onto the next vowel pattern. This description is the standard way of using the test. In this case, these kindergarten students were just tested on short /a/ and short /o/, so the entire short /o/ and short /a/ tests were given. The test was administered fully even if students missed three in a row, for the sake of this study.

The short /a/ pretest showed more than half the students scored 50% or above, meaning between five and ten items were correctly identified. The short /a/ post-test indicated growth in the students’ rhyming and decoding, and only two students scored 50% or under, with the rest of the scores between 60% and 100%. Overall, nine of the fourteen students who participated improved their scores; three students’ scores went down, and two scored the same on both their pretest and posttest. Students 5, 10 and 11 scored low on the short /a/ pretest, but dramatically improved their scores on the posttest, using the strategies taught to them through the intervention. See Figure 4.1 for a visual representation of pretest and posttest performance on the short /a/ vowel pattern.
Figure 4.1. Short /a/ Pretest and Posttest Scores.

This figure illustrates the short /a/ pretest and posttest scores from students at the beginning and end of the intervention. The scores listed above are a representation of how each student scored on the ten words on the Dr. Seuss assessment.

The short /o/ pretest showed more than half the students scored 50% or above as well, meaning between five and ten items were correctly identified. The short /o/ posttest indicated growth in the students’ rhyming and decoding, and only one student scored 30% or lower, with the rest of the scores between 60% and 100%. Overall, eleven of the fourteen students who participated improved their scores, and three students scored the same on both their pretest and posttest. Students 5, 10, and 11 had scores that dramatically improved from the pretest to posttest with the short /o/ sound. These students were labeled as low readers, due to the fact that through observation and informal assessments, reading kindergarten sight words and decoding word family words still came as a struggle for them. They were, however, able to use the strategies
from the three weeks of short /a/, and apply them when learning short /o/. See Figure 4.2 for visual representation of pretest and posttest performance on the short /o/ vowel pattern.

*Figure 4.2. Short /o/ Pretest and Posttest Scores.*

This figure illustrates the short /o/ pretest and posttest scores from students at the beginning and end of the intervention. The scores listed above are a representation of how each student scored on the ten words on the Dr. Seuss assessment.

The short /a/ and short /o/ tests that were given also provided data on the vowel patterns students knew and had trouble with. The figures below lay out the individual nonsense words that students were tested on. Both short vowel tests started out with cvc patterns, and moved to more complex patterns of ccvc and cccvcc respectively. In the first figure, the short /a/ vowel patterns are shown, and in the second, the short /o/. The data shows that more students correctly identified more nonsense words on the short /o/ pretest and posttest, after the intervention was in place. 11 of the 14 students, or 79%, increased scores on the short /o/ posttest, as opposed to 9 of
the 14 students who increased scores, or 64%, on the short /a/ posttest. Students were able to use the skills in they learned in the three weeks of short /a/ instruction, and apply it to the short /o/ instruction.

After analyzing the two figures, students made significantly more growth on the words on the right side of the graphs in each of the subtests. The nonsense words in the beginning of the assessment just focus on cvc patterns, but as the assessment progresses, students are supposed to use the strategies they know to produce the rest of the words. Students who scored significantly higher on the short /o/ test used phonemic awareness skills to figure out the unknown words. This made the study effective in its instruction, because students used the tools given to them during the intervention, and succeeded on the posttest because of that. Figures 4.3 and 4.4 show the visual representation of the short /a/ and short /o/ words that were listed on the assessment.
Figure 4.3. Short /a/ Pretest and Posttest Word Patterns.
This figure illustrates the nonsense words students were tested on before and after the intervention took place, and how students scored on each word. The pretest and posttest are both listed to show the comparison.
Figure 4.4. Short /o/ Pretest and Posttest Word Patterns.

This figure illustrates the nonsense words students were tested on before and after intervention took place, and how students scored on each word. The pretest and posttest are both listed to show the comparison.

Data Analysis

As a result, the intervention was effective, and students made significant progress over the course of the six weeks. In order to know this, the researcher looked back to a September checklist that the kindergarten students were given before any instruction or intervention was given. It was also given again post short /a/ instruction and intervention to chart growth. The main focus of this checklist was reading readiness, which included concepts of print, recognition of the letters of the week, and their sounds. Students were instructed on the short /a/ vowel pattern, and were assessed pre and post intervention. Of the fourteen students within this study, thirteen of them scored Progressing, and one scored Proficient in this area on the progress report before the researcher’s intervention took place. Students then were instructed using the
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intervention of music and rhythm, and on their report card, eight stayed at the Progressing stage, and six were Proficient. Short /o/ instruction was given after short /a/ instruction, and Figure 4.5 points out the effectiveness music and rhythm had when the short /o/ vowel pattern was introduced to the students. Figure 4.5 shows a visual representation of students’ progress from the September progress report before intervention of short /a/, after short /a/ and after short /o/, when students moved from progressing to proficient.

**Figure 4.5. Pre and Post Intervention Results.**

This figure illustrates the students’ progress before the short /a/ intervention, and after short /a/ and short /o/ intervention. The results show more students meeting the Proficient stage after explicit instruction was given.

**Conclusions**

Overall, the students in this sample improved their decoding scores on the short /a/ pretest/posttest and the short /o/ pretest/posttest. It seemed that the intervention was successful, and students were able to increase scores once each posttest was administered. In looking at the
ten words students had on the short /a/ and short /o/ assessment, many of the words do not match in difficulty from one test or another. In the short /a/ test, word patterns seem easier and words are shorter, compared to the words on the short /o/ test. Short /o/ began with only two CVC words, and after that, students were expected to decode more challenging words, such as *spock* and *sprots*. One word that does not seem to belong on either of these tests is the word *shotted* on the short /o/ test. Nowhere between the two assessments or short /a/ and short /o/ is there another word such as this for students to decode. Students who correctly identified this word on the pretest were few, but students who were able to identify it on the posttest were much greater after the intervention was in place.

Looking back at the data in figures 4.3 and 4.4, in the short /a/ pretest, many of the students who did not score over 90% seemed to miss the words in the second half of the test. Words such as /chack/ and /splack/ became troublesome, due to the fact that they had more unfamiliar patterns within the words themselves; as opposed to words in the beginning of the test such as, /dat/ and /lan/. Thirty percent of the test covered cvc patterns, and seventy percent covered the more complex blends and patterns. Students were familiar with word family instruction on a weekly basis, but most of the words that that were recognizable to them were words containing three sounds.

This was also the case during the short /o/ pretest. This vowel sound had not yet been introduced to the students during the course of the school year, and was unfamiliar to many. Again, the data shows that most of the three-letter words were easier to sound out, but when it came to words with more blends, it was more difficult to decode. Many times, letters were switched around, creating a new word; such as, /sports/ for /sprots/. As the students were saying the words, they would do it carefully and slowly. At times, each individual letter would be
sounded out, and when the student tried to put the entire word back together, it made it virtually impossible, since the blends were missing initially. Blending and segmenting instruction had been taught throughout the year, but just as it came up; it was not an individual lesson.

After the intervention was completed, the short /a/ and short /o/ posttests were given. Almost all of the students’ scores increased; with the exception of a few either decreased or stayed the same. There were more significant improvements on the short /o/ posttest, due to the fact that the students now had the knowledge of decoding through the rhythmic poems they had read over the past few weeks. Students were looking at the individual words and saying the blends, rather than each individual sound. The vowel sounds were correct, but the students that still needed extra practice would try and insert sounds that were not there, to try and have the word make sense. For example, in the short /o/ subtest, the word *thop* was given. The word preceding it was *spock*. The student used the ending from the previous word, and sounded it out as /th/ /o/ /ck/, without looking at the ending. This is something that was taught to the students on a regular basis, so for some of the students to miss them completely, may have shown their lack of attention to detail on which sounds to put together, and which to sound out individually.

Presentation of pre and posttest data on the *Dr. Seuss Nonsense Word Test* (Appendix A) show improvement of phonemic awareness skills in the short /a/ and short /o/ vowel patterns. This chapter presented the data collected through pretests and posttests. Chapter Five will provide connections to existing research, and an explanation of the results.
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CHAPTER FIVE

Conclusions

In Chapter Four, pre and posttest data was presented and analyzed. In this chapter, the purpose of the research will be revisited; connections to existing research, an explanation of the results, the strengths and limitations of this study, and recommendations for the students will be provided.

The purpose of this study was to investigate the effects music had on phonemic awareness instruction for beginning readers in five-year-old kindergarten. During the six weeks of instruction, a formal decoding fluency assessment was administered to the students, and instruction took place thereafter. The results of this study regarding music’s effect on phonemic awareness and decoding instruction, can be connected to research presented in Chapter Two.

Connections to Existing Research

The kindergarten students in this study had the benefit of early literacy instruction offered to them the moment they entered the school. Their classroom teachers were able to provide this instruction through the use of a Basal reading series, phonics instruction, guided reading groups, and supplemental materials, which aided in their reading successes. The music intervention that took place in this classroom over a six-week period, was successful in aiding with phonemic awareness instruction.

As students worked their way through the intervention, music and rhythm were infused into their phonics instruction, to see whether or not this would aid with their phonemic instruction, and if their decoding skills would progress. Researchers have found that “phonemic awareness is one of the best predictors of how children learn to read” (Eastlund Gromko, 2005, p. 200). The approach of connecting sounds to letters provides students with a strong base to
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continue reading further as they learn how to read and what strategies to use. All of the students that participated in this study came into kindergarten having some phonemic knowledge, which helped them in situations when decoding and rhyming were present, such as in the Dr. Seuss Assessment that tested them on unknown words. Musti-Rao and Cartledge (2007) found research on phonemic awareness as well, stating, “an effective early intervention reading program should be packaged with the critical elements of beginning reading (e.g., phonemic awareness)” (p. 72). Providing students with these reading skills will ultimately make them more successful readers.

In this study, music and rhythm were introduced to students along with regular phonemic awareness instruction. This was meant to enhance reading and decoding throughout the year. As students went through the intervention of the short /a/ and /o/ vowel patterns, new poems were introduced that had a rhythm to them, or were to the tune of a familiar nursery rhyme. David, Wade-Woolley, Kirby & Smithrin (2007) would agree that the use of rhythm in reading instruction is an “influential factor in reading development” (p. 170). As young children learn to reproduce sounds, they are often segmenting and blending these sounds in a way that will help them decipher the words each time. This rhythm and music instruction is especially effective in students ages 4 to 6 years of age, due to their eagerness to learn and their abilities to produce and mimic sounds used by their parents or teachers. Using rhythmic patterns during phonemic awareness instruction develops a relationship between onset and rime, as students begin to learn how to form complete words. Through this process of distinguishing the different sounds, students can then apply it to phonemic awareness activities, such as alliteration and rhyme (Lamb & Gregory, 2003).

As students in this study began to learn how to decode, blend and segment sounds, music was the useful tool that led to such significant effects of the intervention. Students’ scores from
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their pretests to posttests on both short /a/ and short /o/ tests improved as the rhythmic readings of the poems continued each week. Students were able to listen to these rhythmic patterns as it was modeled by the teacher, and then produce the sounds in an effective manner as they read the poems or sang the songs each week. By cluing the students into the rhythm of learning new words, allowed for scores to climb on the posttests.

**Connections to the Common Core State Standards (CCSS)**

The ultimate goal in the Common Core State Standards-Phonological Awareness RF.K.2 is for children to demonstrate an understanding of spoken words, syllables, and sounds (phonemes). That is, to recognize and produce rhymes, blend and segment syllables in spoken words, and isolate and pronounce the initial, medial vowel and final sounds (phonemes) in three-phoneme (consonant-vowel-consonant, or CVC) words. The Common Core Standards for Phonics and Word Recognition RF. K.3 is also included to allow children to know and apply grade-level phonics and word analysis skills in decoding words. Children would need to demonstrate basic knowledge of letter-sound correspondences by producing the primary or most frequent sound for each consonant, as well as associate the long and short sounds with the common spellings (graphemes) for the five major vowels. Decoding words and ultimately reading is a developmental process with phases that all children go through in learning to read. Phonemic awareness is the ability to think about and articulate the individual sounds in spoken words. Developing phonemic awareness skills is a step towards meeting the Common Core State Standards in English-Language Arts.

**Explanation of Results**

This study examined the effectiveness music and rhythm had on phonemic awareness instruction for beginning readers in five-year-old kindergarten. The phonemic instruction took
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place in the form of short poems that the children learned throughout the six weeks. Phonemic activities such as, decoding words and producing rhymes, were included within daily instruction. Presentation and analysis of pre and posttest data on the Dr. Seuss Nonsense Word Test: An Assessment Sequence for Emergent to Beginning/Early Readers (Appendix A) showed improvement from the pretest in short /a/ and short /o/ vowel sound to the posttest of each vowel sound.

Initially, the bulk of each session included work with recognizing word family patterns and their rhymes. Students were each given a poem or short rhyming song with a corresponding word family, such as -at and -ag. Since each poem was set to music, or had a specific rhythm about it, students relied on the familiar tune they already knew, such as BINGO to help them decode and then read the poem easily. The short /a/ vowel pattern was taught for three weeks, and then the Dr. Seuss posttest was given. The same instruction was given to the students for the three weeks after when short /o/ was the focus. A posttest was also given to end instruction after the six week period.

Instruction in decoding words was completed with the use of manipulatives on note cards. Students were familiar with this activity since it was something they recognized from earlier phonics instruction throughout the year with short /a/ vowel patterns that had previously been taught. Students really connected with this activity, and were excited to make words on their own. Music and rhythm seemed to be an excellent aide for some students’ reading and decoding abilities. Students were able to transfer the rhythms they learned from short /a/ instruction to short /o/ instruction, and apply them appropriately when reading other texts.

Finally, improvement is evident on both short /a/ and short /o/ posttests, especially for the students who scored less than 50% on the pretests. It is possible that improvement in decoding
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and phonics is due to the countless opportunities to use music and rhythm, as well as manipulatives to help decode unfamiliar words. Additional practice with word families, such as learning songs, took place at school as well; not only within intervention, but in regular instruction throughout the entire year, which is why this study is well-suited for beginning readers. Students were able to learn a reading strategy in a fun, yet effective way.

Strengths and Limitations of the Study

The study’s strength was the music and rhythm effects that aided with instruction as readers read and learned to decode unfamiliar words. For some students within the study, as determined by the pretests, decoding unfamiliar words or blending sounds together was next to impossible. In looking back at the Dr. Seuss assessment, some blends, such as /sh/ and /ch/ were expected to be known. In this classroom of students, the researcher only taught these blends as they were encountered in words in the text during reading lessons, or other lessons across contexts. Rather, it was not a main focus of the study, which explains the lower scores for words such as chack and splack on the short /a/ tests, and chock and sprots on the short /o/ test. This study allowed for these students, as well as the others, to excel in their reading, using fun rhythms and rhymes to enhance their learning. Students were able to learn strategies and take away information to put towards readings that increase in difficulty. Students were able to have an excitement for reading, using familiar songs they loved, and rhythms they were familiar with to aid in their reading.

Conversely, there were a few limitations to this study. One limitation was the timeline in which this study was completed. Students left for a week during spring break, which is why the intervention took a little longer than anticipated. If this intervention had been done over six consecutive weeks, data may have been different, and some students may have scored higher on
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their posttests. Another limitation of the study was the amount of students who participated.

Originally, sixteen students were in the classroom, and throughout the intervention, one student moved to a new school, leaving fifteen students. Another student was not able to be counted in the study due to the fact that her consent form had never been submitted. This student was very bright, and would have boosted the scores had she been able to participate. If the sample size was larger, the scores would have statistically been better for analyzing, to see if the intervention truly was successful. It also would have been beneficial to collaborate with the other kindergarten classes to see if the intervention was successful in those classrooms as well.

Recommendations for Future Research

The results of this study confirm the effectiveness music and rhythm have on phonemic awareness instruction. It is therefore recommended that music and rhythm instruction need to be present in primary classrooms as one way to enhance reading and strategies that support reading, such as blending, segmenting and rhyming, just to name a few. In addition, instruction incorporating music is useful as well. For example, teaching students a song in Science class allows students to have an auditory clue to remember the information, once they hear the song, even if it is not Science class.

Ultimately, not all students were able to make significant strides with this intervention, which allows the researcher to make an improvement. If this study was to be used again, specific teaching of blending and segmenting would need to occur before, during and after the intervention was used, to ensure that most, if not all students, had their reading needs met. Just by looking at the results on the posttests of both short /a/ and /o/, students made significantly more growth with the words on the second half of the tests, which was apparent by their high
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scores. With future studies, more intervention time should be spent working with digraphs, along with a short vowel pattern, to ensure all areas of the Dr. Seuss test are being covered.

Another improvement for this study would be to set enough time aside for the intervention to occur. In this particular study, spring break fell right in the middle of the intervention, and students were out of school for over a week. The results may have been different if the students had six weeks of consecutive instruction, rather than three weeks on, a break, and another three weeks.

Finally, little research has been done on this topic, which is why it is so important to educate fellow teachers about music’s effectiveness in the classroom. As students’ move onto the next grade, it is important that the upcoming teachers know of this study’s effectiveness, and how much of an impact it can have to help beginning readers. Music can be a great outlet for many students, and can be easily transferred across contexts to make reading meaningful for all learners.

Conclusion

The purpose of this study was to examine the effectiveness music and rhythm had on phonemic awareness instruction for beginning readers in five-year-old kindergarten. In this chapter, a connection was made between this study and existing research. An explanation of the results was provided as well as the strengths and limitations of this study. Finally, recommendations were given.

Results of this study confirm that music and rhythm have an effect on phonemic awareness instruction, and students’ posttest scores improved after the six week intervention took place. Posttest data provided information for the teacher on where the students’ strengths and weaknesses were, and scaffolding was able to be put into place. As the students in this study
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continue their journey in learning to read, collaboration and communication between teachers will make this a more effective approach to reading instruction.


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Reading Dr. Seuss Words!!!
An Assessment Sequence for Emergent to Beginning/Early Readers

The words listed below are designed to assess emergent and beginning readers' recognition of the most common word families/spelling patterns/rimes. This sequence is based on Santa and Holen's (1999) Early Steps word family sequence.

Explain to the student that s/he will be reading made-up words that rhyme with words we know. These words are like the bouncy rhyming words Dr. Seuss uses in his books. A short passage from a Seuss book such as Wocket in My Pocket would provide good modeling—and a literature context connection.

On the lists below, indicate whether a) the student can correctly decode the word and b) it takes more than 3 seconds for the student to decode the word. Place an X in the Correct box if the word is correct; write what the student says if it is not. Discontinue if a student misses three items in a row. If the student has fewer than 90% words correct at a level, reteach the level emphasizing the words missed. If the student has more than 90% words correct in all Level 1 word families, move on to the Level 2. If 90% or more words at Level 2 are correct, move to the Power Patterns chart assessment. Always teach missed patterns if moving to a new level.

**Level 1 (cvc families sequenced by short vowels)**

**Short a word families**

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**Short i word families**

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**Short o word families**

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