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SYNTHESIZING THE MUSIC INTEGRATION RESEARCH TO EXPLORE
FIVE COMMON THEMES IN INTERMEDIATE ELEMENTARY
CLASSROOMS

by

ALEXANDRIA HARKINS

A thesis submitted in partial fulfillment of the requirements
for the Honors in the Major Program in Elementary Education
in the College of Education and Human Performance
and in The Burnett Honors College
at the University of Central Florida
Orlando, Florida

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Thesis Chair: Dr. Sherron Killingsworth Roberts

Abstract

Much scientific research has been conducted to examine the effects of music on the brain and abilities of people. The results have shown a positive correlation between music used in various ways and the abilities and skills of people, especially children. However, the use of music in the general intermediate classroom is lacking. After reviewing scientific research to provide a foundation for the study and synthesizing the five Music Integration Practices, two teachers were interviewed and observed on their use of music in their general intermediate classrooms. The interviews, observation checklists, and anecdotal notes taken by the researcher provide music activities and rationales for the use of music in the classroom, as explained by the participating teachers.

Acknowledgements

This has been an enlightening and beautiful journey, full of personal growth, and I am forever grateful to those who stood by me throughout it. To my family, who raised me to believe that my success was never a question; to my brother, who supports me in times when it seems that no one else understands; to my thesis committee for offering advice that helped me grow as a learner and a professional; and to Dr. Sherron Killingsworth Roberts, who provided the endless optimism and encouragement that proved to be my driving force and, when necessary, my lifeboat.

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Chapter One: Introduction

Music is an important part of life for many people, whether in the form of listening to it, performing it, or composing it. It is powerful in its influence on and conveyance of emotions, it is technical in its rhythms and chord progressions, and simple in its ability to be enjoyed. The researcher took classical piano lessons from the age of eight to 18, attended a Visual and Performing Arts high school, and enjoys listening to music on a day to day basis. In completing her education to become an elementary school teacher, she is looking for ways to use music to enrich the lives of her own students, as it enriches her own life

Rationale

High quality, caring educators are perpetually seeking out strategies and coming up with ideas to promote and enhance learning within their classroom. Howard Gardner's (1983) Multiple Intelligences Theory is a great resource for individualizing otherwise general lessons. One of the nine intelligences identified by Gardner is musical-rhythmic. Knowing the importance of this musical emphasis, the researcher explored and synthesized the ongoing research related to two areas: music training and music integration in the elementary grades. Therefore, this thesis sought to explore and analyze the current research related to the effects of long-term music training on the brain as well as the research related to the effects of frequent, short-term music integration practices of elementary teachers in the intermediate grades. To achieve this goal, this thesis utilizes five themes of Music Integration Practices developed by the researcher and reports on the scientific evidence that supports the use of these practices. It

also aimed to identify the practices of intermediate teachers identified as exemplary by experts in the field and observe their use of music in the elementary classroom.

Chapter Two: Review of Scientific Research

The ability to extensively research the effects of music on the physical brain has, relatively speaking, only recently been made possible by improved and new technology and research tools, such as adequate assessment tools for Magnetic Resonance Imaging (D'Esposito, 2008) and more advanced neuroimaging tools in general. Despite these young advances, research on the effects of music on the brain has become popular. As a result, though the findings are preliminary and have yet to be studied longitudinally, a number of researchers have initiated many studies that produced promising results. Given these improvements, this study first explores some of the scientific research as well as some of the research focusing on practitioners. The scientific findings, mostly with ties to brain research, are discussed here.

Posner et al. (2008) sought to find a correlation between music as a motivation tool and improved performance. Questionnaires were used to measure the differing level of interest in art. The researchers conducted a separate study on how motivation affects the outcome of a task performed by children. The findings were that higher motivation led to improved results. Further, with motivating factors included, children performed better on cognitive tasks such as conflict resolution. The questionnaire results suggested that art forms, such as music, are efficient motivation tools.

In Jonide's study (2008), three groups were tested to see how well they were able to remember groups of three words: a musical group, a theater group, and a control group with no arts training. MRI was used to observe the parts of the brain activated during the word activity. Non-musicians showed more brain activation during the activity, suggesting that musicians develop "rote rehearsal" or "strategies of rehearsal," which is more efficient for remembering information.

In Spelke's study (2008), there were three parts conducted to compare the math performance of different groups of children: the first part compared musically trained students to athletes, the second compared children who had received intensive music training to those who had received little, and the third part compared a variety of students trained in different arts. After conducting a series of tests, Spelke found that intensive music training leads to improved skills in geometry. She believes that this might be due to the musical tones and spaces in between each being represented in the brain, which is then thought to have high transferability to geometry and representation of shapes.

Rather than focusing on mathematics, Wandell et al. (2008) conducted a study to examine the correlation between music training and reading fluency. Children received music training for one year and within the next three years their improvements in reading fluency were recorded. The activity of the brain was observed using Diffusion Tensor Imaging (DTI). The findings were that there was a direct positive correlation between the amount of music training and the improvement of the students in reading fluency.

D'Esposito and his team (2008) had the goal of developing new MRI tools that they would use to examine the effects of the arts on the brain. After gathering information about the subjects using questionnaires, D'Esposito examined the brain activity of musicians and non-musicians who performed "slow learning," defined as "long-term motor expertise" by D'Esposito, and "fast-learning," defined as "rapid improvements in performance that lead to habituation-like brain changes" (p. 71). The findings suggest that musicians, through intensive training, develop greater cognitive control due to the attention demand of learning, practicing, and performing music. Memory, reaction time, and sequence acquisition was also superior in musicians, compared to their non-musician counterparts.

Again using MRI to explore the impacts of musical training, Dunbar (2008), showed more brain activation in the area of the brain which is involved with language processing which associates with conceptual thinking for musicians. The study included the use of a modified version of Guilford's Use of Objects test, which is used to measure creativity by asking the subject to come up with as many uses for one object as they can . The performing arts group used a more linguistic approach, which could be "connected to conceptual thinking (p. 81), to the task than their non-performing arts counterparts, who used a more perceptual approach. In another part of the study a behavioral test was conducted. The results of this test suggest that musicians have more efficient working memories compared to theater and non-arts students.

In her study, Petitto (2008) sought to examine the impact of music training on second language acquisition. Petitto studied a group of musicians, and a control group of non-musicians. All participants were monolingual students enrolled in an introductory Italian or Spanish class. The results showed that musicians acquired a second language more quickly and efficiently than the control group, possibly due to the transfer of the improved selective attention on higher cognitive tasks in musicians.

Neville et al. (2008) covered a large array of cognitive tasks believed to be improved through music training and studied the effects on preschool children. Four groups were included in this study: the experimental class, who received small group music training; the second class, who received regular instruction and included a large number of students; the third class, who received regular instruction and included a small number of students; and the fourth class, which included a small number of children who received attention training. The results of the music group, the attention group, and the small group class were similar and these groups outperformed the larger class in all activities except language and phonological

awareness development. Some of the results include increased non-verbal IQ, numeracy and spatial cognition, language and receptive vocabulary, letter identification, and quantitative reasoning and critical thinking. This study indicated that music training has the same benefits as small class instruction and intensive attention training.

Sparks (2013) reviews and quotes findings released on the effects of music on the brain. The studies reviewed found that language, creativity, decision making, and memory may be increased due to an increase of neural connections in certain regions of the brain. Additionally, students with behavioral problems may benefit from music due to music being an outlet for emotion and also because they may practice life skills such as attention and discipline with music training.

Rickard et al. (2010) conducted a study to determine the effects of music on the verbal memory of students. There were three groups of participants in the study: the experimental group was a group of primary students who engaged in an additional hour of music training per week in addition to the regular curriculum for two and a half to three years; the second group was a control group which included students who received only the regular curriculum for two and a half to three years; the third group was a juggling group in which students received instruction in juggling, one hour a week for a year. All students completed a series of pre- and post-tests that measured their verbal memory abilities, attention and concentration, and visual recall. Students who participated in the music training program made greater improvement than those who did not, in all areas except verbal delayed recall. The control group made greater improvements in immediate recall in year two of the study, and showed declines in visual perception between the first and second year of the study. The juggling group provided no significant information due to the limited duration of the study. The superior performance

of the music group may possibly be due to increased neuroplasticity in the brain as a result of music training.

These recent studies all focused on long-term music training and the possible benefits music may have on those who study it. Overall, these studies have discovered several correlations between cognitive abilities and studying music. These findings include increased attention; improved memory; higher achievement in academic subjects, such as math, reading, and language; and greater ability to think critically.

In addition to reviewing the most recent scientific studies related to long-term music training, this proposal also reviews pertinent research related to the effects of music integration practices. The following section outlines those practitioner-based music studies.

Chapter Three: Synthesis of Music Integration Practices Through Reviewing the Research Literature

To narrow and define the topic on music integration in the general intermediate classroom, it was necessary to search for articles and studies in the UCF OneSearch which includes a collection of pieces from several different databases. Several papers addressed how the authors incorporated music into various classrooms in elementary, secondary, and post-secondary classrooms and the effects of the music incorporation. While reading the articles, the researcher came to notice that the definitions of *integration* and *incorporation* widely differed in the perceptions of the different authors. All but one article supported the utilization of music in the classroom, but the different ways in which music was used varied. These various uses of music were organized by the researcher into what will be referred to as “Music Integration Practices,” or MIPs. The five Music Integration Practices identified across the initial 15 practitioner-based articles are:

- 1) music as a mnemonic device,
- 2) music as supplemental material,
- 3) music to teach a concept or curriculum,
- 4) music to regulate emotions and attention, and
- 5) the use of music to build skills in the general classroom.

These practices were created by the researcher and verified by the thesis chair by reading, reviewing, and re-reviewing the top 15 articles related to music practices of teachers.

These practitioner-based articles can be linked to the scientific research outlined in the prior section of this thesis, so that these practitioner-based studies can be backed up or substantiated with scientific evidence through studies and MRI analysis. These studies support

the stance on incorporating music in the general classroom and provide evidence for why and how music is beneficial when paired with music training outside of the classroom. The evidence is thoroughly discussed in the Review of Scientific Research and then again referenced under the corresponding MIP in Supporting Scientific Evidence.

Therefore, an objective of this thesis paper was to provide scientific evidence that supports the benefits of music on the brain and the integration of the five Music Integration Practices identified through the review of MIP practitioner-based articles in the intermediate elementary classroom. Further, this thesis sought to identify the practices of exemplary intermediate teachers and their use of music for instructional purposes in their classrooms.

Chapter Four: Review of Practitioner-Based Literature According to the Five Extracted Practices

Music Integration Practice One (MIP 1): Music as a Mnemonic Device

Music and jingles are used often in education, including to teach children their ABCs. In a study conducted by Haynes and Canady (1974), it was observed that students who were taught 16 nouns through a mnemonic device recalled the nouns more easily and thoroughly than those students who had learned them simply by memorization. For material that involves simple facts or information to be learned and remembered, such as the United States and their capitals, or the seven continents, mnemonic devices are an effective tool.

Supporting Scientific Evidence

In order to provide verification of why this music integration practice might work, one may turn to early research findings conducted by Jonides (2008). This research finds that musicians use “strategies of rehearsal” to remember information. Compared to their non-musician counterparts, musicians used memory strategies that helped them remember information more effectively. As seen through MRIs, this may be due to activation of the medial temporal lobe which is more activated in musicians, and which has the function of storing long-term memories. Furthermore, Dunbar’s (2008) study found that music students were also found to have better working memory than theater and non-performing arts students. Neville et al. (2008) study shows that students who received music training and students who received attention training improved after the eight-week study in working memory. Students who were in the general, large group class setting made significant improvements in only

language. To further solidify the scientific evidence available for supporting music as a mnemonic device, Rickard et al. (2010) found similar results in a study in which students showed greater improvement in verbal memory after two and a half to three years of training in music compared to students who received no music training or juggling instruction.

Music Integration Practice Two (MIP 2): Music as Supplemental Material

The second Music Integration Practice derived from the initial literature review states that music can also be used as supplemental material to add meaning or enjoyment to the lesson. *Lemonade in Winter: A Book About Two Kids Counting Money* aims to first teach the concept of math, but adds in a second dimension of fun by including peddlers' songs and rhythms to engage the reader (Cardany, 2014). More extensively, Pearman and Friedman (2008) constructed a curriculum in which language arts was taught alongside a music class, each being supplemental material to the other subject. Music was used to help develop skills in language arts through an entwinement of reading about music, listening to music, and watching various forms of visual media. In the reading section, students read a piece about music, discussed their findings and thoughts as a class, and notated rhythms of the reading. In the listening section, the students listened to music, then drew their visual representation of the music and discussed questions about the music that promoted higher-order thinking skills. Watching social media served as a form of visual literacy which also helped students develop higher-order thinking skills.

Supporting Scientific Evidence

According to research findings of Posner et al. (2008), the improved scores on the tests in the study are likely due to increased motivation. Because it is natural for people to find

pleasure and interest in some art form, using music in the classroom as supplemental material will lead to increased interest and motivation to learn the curriculum.

A study conducted by Neville et al. (2008) shows that students who received music training and students who received attention training improved after the eight-week study in language, including phonological awareness, expressive language, and receptive language. Students who were in the general, large group class setting made significant improvements in only language. This implies that students may practice fluency and develop phonemic awareness through listening to music, whether as background music or supplemental material to curriculum.

Music Integration Practice Three (MIP 3): Music as a Tool to Teach Curriculum

The third MIP allows that music can be used to teach a concept in a subject. In a long term action research study, Song An, Mary Capraro, and Daniel Tillman (2013) created a curriculum which used music to teach mathematic concepts. This curriculum was adopted and modified by two general math teachers who had attended multiple professional development courses on integrating music in the classroom. In addition to using music to teach math concepts, the teachers taught strictly music related lessons and also used music as supplemental material. The pre- and post-tests show that, with the use of music, students efficiently learned the material through the music-mathematics integration curriculum. Another example of a complex music integrated math lesson was created by Shelly Jones and Dunn Pearson Jr. (2013). In this unit lesson plan, students listened to popular music; learned basic music terminology, such as rhythm and notes counts; and applied this new knowledge to learning fractions, multiplications, and so on. For example, in *The Music, Movement, and Learning Connection: A Review*, Blasi and Foley refer to Schoolhouse Rock (2008) *Multiplication Rock*

as a good example of music to address logical-mathematical intelligence, which teaches multiplication through a song. They also refer to a song called “Alphabet Motion” that is used to teach young children the alphabet and the shapes of the letters through movement.

Emily Lenning (2012), a college professor of a criminology theories class, used music as a motivational tool and to teach criminology concepts. She used several popular songs, including songs by Tupac and other R&B artists. She asked the students to analyze the lyrics of the songs and identify which criminology theory applied to the situation being addressed in the song. Lenning claimed that students were motivated due to the fact that music was relevant to their own lives and also that the students were able to more easily understand the class content when receiving the information in the form of popular music.

Supporting Scientific Evidence

Evidence to support the use of music to teach a concept can be examined in the following studies. A study conducted by Spelke (2008) found that students who received intense music training scored better on geometric/spatial tests. Another study conducted by Neville (2008) also supported Spelke’s finding in math, but examined other academic areas as well. This study found that students who received music training and students who received attention training improved after the eight-week study in language, including phonological awareness, expressive language, and receptive language; in spatial cognition; and in quantitative reasoning. Students who were in the general, large group class setting made significant improvements in only language. This implies that students may learn fluency and develop phonemic awareness through listening, singing, and engaging in music. Math skills may also be improved.

Music Integration Practice Four (MIP 4): Music as a Tool to Influence Emotions and Attention

As background sound, research has found music to improve the achievement and abilities of students, as the fourth MIP indicates. In *The “Mozart Effect” and the Mathematical Connection*, a college professor played Mozart pieces in the background during testing. Compared to the control group, the experimental groups received, on average, higher scores (Taylor & Rowe, 2012). In a similar study, the effects of music on paintings done by children with disabilities were examined. Three groups were used in this study: the control group listened to no music while they painted, one group listened to classical music, and the third group listened to rock. A rubric was used to score the paintings of the students and the results were as follows: the group who listened to classical music scored highest, the rock group scored lowest, and the control group scored in the middle. A rubric was also used to score students on their behavior and the results reflected the painting results. The suggested explanation for these scores was that classical music promoted attention and focus while regulating the emotions of the students (Waugh & Riddoch, 2007). This theory is supported by research addressed by Lucille Foran in *Listening to Music: Helping Children Regulate Their Emotions and Improve Learning in the Classroom*. In this research, music therapy is used to help children who are experiencing trauma rewire their brain structures so that they may be able to better regulate their emotions (2009).

Supporting Scientific Evidence

Many of the research supporting MIP Four focuses on improvement of attention. As discussed in the third MIP, the findings of Posner et al.’s (2008) research, music can be used to motivate students to learn and to prolong their attention. Additionally, the study conducted by

Neville et al. (2008) showed that pre-school students who received music training scored similarly on tests compared to students who were taught in a small group and students who received attention training. This implies that music training has the same effect as attention training. Further, the study of Rickard et al. found that students show greater improvement in attention and concentration after two and a half to three years of training in music compared to students who received no music training or juggling instruction. Sparks (2013) references studies that supply a reason for behavioral changes in students. These studies suggest that students use music to channel their energy and emotions. Music also provides a way for students with behavioral problems to practice discipline and attention.

Music Integration Practice Five (MIP 5): Music to Build General Skills

The last manner in which to use music, identified through the fifth MIP, is the strengthening of skills through music, which are then transferred to general skills. Vocal-based and instrumental music lessons may help children with dyslexia improve phonological skills and spelling, distinguish conversation from background noise, improve tracking when reading, and improve motor skills. The theory is that, “through multisensory strategies, concepts may be learned more easily” (Heikkila & Knight, 2012, p. 57).

Supporting Scientific Evidence

The studies supporting the fifth MIP cover a range of skills and abilities, ranging from improved cognitive abilities, to increased creativity.

As discussed in MIP Two and Four, the findings of Posner et al.’s research, music can be used to motivate students to learn and to prolong their attention, which leads to improved cognition in problem solving tasks. Similarly, a study conducted by D’Esposito (2008) finds

that pianists have greater cognitive control, due to strengthened neural enhancement which improve the ability to suppress instinctual behaviors. Also improved is memory through increased neural efficiency. The MRI findings suggest that music affects many parts of the brain and certain regions of the brain are engaged in varying tasks in music. Music strengthens these unspecified areas and “may determine their processing efficiency” (p. 78). Also related, a study conducted by Neville et al. (2008) showed that students who received music training and students who received attention training improved after the eight-week study in their critical thinking abilities. Students who were in the general, large group class setting made significant improvements in only language.

Wandell et al. (2008) found that music training at a young age can aid in gaining phonological awareness and fluency, possibly due to larger axons connecting the parts of the brain found through MRI. Pettito (2008) found that musicians showed greater ability to learn and speak a second language than their non-musician counterparts. Dunbar’s (2008) study found that performing arts (theater and music) students are more creative, possibly due to increased activation of left inferior frontal gyrus and left superior frontal gyrus, as seen through MRI, which “suggests that they are taking a more linguistic approach to the task” (p. 83). Summing up the studies of Wandell, Pettito, and Dunbar, in *Studies Highlight Brain Benefits from Music Training*, Sparks (2013) references studies released at the Society for Neuroscience, which released findings that imply that language, creativity, decision making, and memory may be improved due to increase of neural connections in certain regions of the brain.

A Look Forward

Chapter Five will include the methodology of the action research, explaining the purpose of the study, who the participants of this study are, and the tools used to collect data. Chapter Six provides the results and Chapter Seven will discuss these results. Chapter Eight will outline the educational implications.

Chapter Five: Methodology

Statement of Purpose

The objective of this thesis is to first review the scientific research that correlates long-term training in music and improved cognitive abilities. This research then provides a foundation for the five Music Integration Practices (MIPs) synthesized by the researcher. These MIPs are to be paired with outside music training, such as instrument or voice lessons, to achieve the greatest results suggested through the scientific studies. Furthermore, exemplary teachers were interviewed and observed by the researcher to examine how the MIPs are utilized in general intermediate elementary classrooms. It was approved to conduct this research by the University of Central Florida Institutional Review Board. The approval letter can be found in Appendix A.

Procedures

First, the researcher worked to find scientific, brain-based research to support music training or integration. Next, conducting research on practitioner-based studies, the five Music Integration Practices were founded and defined. Further, two exemplary teachers were interviewed and then observed to examine how, how often, and why these music practices are implemented by these teachers. The interviews were completed first to provide a foundation for the subsequent observations.

Subjects

The participants of this study were intermediate elementary school teachers, identified by college professors, who are active in the elementary school setting and through the

researcher's internship. The participants were contacted with a recruitment email that can be seen in Appendix B. It was difficult finding teachers who qualified to participate in this study. Though approximately 15 contacts were provided, only a few responded, and of those, only two followed through to the interview and observation process. This could have been for a multitude of reasons including disinterest in participating in the study or beginning-of-the-year schedules that were simply too busy.

Two teachers were interviewed and observed. The interviews took place before the observation on the same day. One teacher was interviewed face-to-face, the other chose to complete the interview on her own time. Any clarifications were made afterwards by the researcher through face-to-face conversation with the participant. The interview was intended to gather information about the opinions, views, and values of the participants. The information was evaluated in conjunction with the anecdotal notes, which were taken throughout the observation, and the observation rubric, which was completed briefly after the observation.

Instruments

Based on the five themes identified and defined as the Music Integration Practices through the literature review, an interview protocol and observation rubric were created. The interview and observation rubric were created using a color-coded key to ensure that questions and observation points included each MIP. The key is as follows:

- 1) Mnemonic
- 2) Supplemental
- 3) Content
- 4) Emotion/Attention

5) Skills

Interview Protocol

The interview questions, as seen in Appendix C: Teacher Interview, were created by the researcher and were derived from the five MIP themes. The interview with the teachers were either face-to-face or the teachers completed it on their own time. The researcher was able to maintain contact with both participants so that it was possible to ask questions to expand on or clarify answers. The interview was completed before the observation. Answers were transcribed throughout the interview. The interview and observations were solely to examine the individuals' views and opinions of the teachers and were not meant to provide factual data.

Observation Protocol

The observation protocol was guided through the observation rubric, created by the researcher and based on the five MIP themes. The observation rubric can be found in Appendix D. The amount of time the participant was observed was for the entire length of the lesson in which music was employed. Throughout the observations, thorough anecdotal notes were kept which were later recorded on the observation rubric, thus providing number values as an end result score.

Timeline

Appendix K provides the timeline for the entire study.

A Look Forward

In the upcoming chapter, the results of this study are outlined. Subsequent chapters provide discussions and implications.

Chapter Six: Results

Originally, the plan was to identify a number of elementary teachers who utilize music regularly in their classrooms. Knowledgeable professors, who are active in the field and who serve as contacts for professional development schools, provided names and contacts, as did professors who teach integrated arts to elementary teachers. Ultimately, two elementary teachers were identified who employ music in the classroom. It was extremely difficult identifying these teachers. Approximately 15 contacts provided by various professors in UCF led to dead ends, as a majority of the email inquiries received no response. Though this fruitless pursuit was frustrating and disheartening, it also provided valuable information that lends to the conclusion of this research: teachers who use music to aid in the learning process of their students, though doubtlessly are out there, are few and far between, and thus are hard to come by.

Teacher A

The first teacher, who has taught a total of 10 years, was interviewed and observed in her role as a fifth grade math and science teacher at a grade A elementary school in Orange County Public Schools. She was identified by the researcher through a passing comment the teacher made about using music to help her students transition from class to class and subject to subject. She stated that her students had difficulty packing up and preparing for class in a timely fashion. After she attended a Kagan Professional Training in which the use of music was addressed, the teacher decided to attempt to use music to help her students transition. The teacher explained that the music played during transition time should be about 120 beats per minutes to stimulate the students and encourage movement. She also plays music in the

background while they are working independently. This music should be about 60 beats per minute to calm and focus the students. She has just begun using music in her classroom this academic year and expressed that she was “not a pro” just yet, and that she was planning on using music in the future in various ways in her classroom.

The interview for Teacher A can found in Appendix E for, the observation rubric in Appendix F, and the anecdotal notes in Appendix G.

Teacher B

The second teacher, who has also taught for a total of 10 years, was interviewed and observed in her role as a fifth grade teacher at a grade A school in Brevard County Public Schools. Previously, she worked in an elementary arts magnet school, and all of her students were actively involved in all forms of art, from music, to dance, to photography. They brought their love of art into the classroom and the teacher chose to capitalize on music as a motivation and learning tool in her own general classroom.

This teacher also attended professional workshops to learn about using music in the classroom. The activity observed in her class was presented to her at a workshop at the Kennedy Center for the Performing Arts in Washington, D.C.. The music activity is meant to help students control their behavior and understand what is expected of them for the rest of the day. As soon as the music began, without any cue from the teacher, the students moved their desks to the perimeter of the room to make room for the activity and gathered in a circle in the center of the room. The teacher then produced a dialogue to which the students moved their bodies into different positions. First, the students “signed” a “contract” that stated that they were in control of their body, behavior, voice, and imagination. Their movements were to be calm and controlled and they repeated the signing of the contract until all students achieved

this goal. They then engaged in a grouping activity in which the students were to meet the group criteria in a calm manner. For example, the teacher would say “You must be in a group with three boys and one girl.” Students were to form these groups and those who were left over moved to the “observation deck” where they were still expected to participate in the activity and observe their peers. To conclude the activity, the students came back to the circle and regrouped one more time. This last group was to be their group, in which they were to create a tableau, or “frozen scene”. They then transitioned to the activity, throughout which the teacher gently reminded the students to remain in control of their body, voice, imagination, or whatever behavior was beginning to verge on inappropriate.

The teacher expressed that she includes less music in her classroom these days due to the stress being placed on the teachers with standardized testing. She also included that it is difficult for parents to accept that their children are learning when they are involved in open-ended activities which do not include completing worksheets, and instead are learning through activities done in school. As a result, she often is confronted by concerned parents and has to explain how the activities she uses, some involving music, are oftentimes more beneficial than seat work and worksheets.

The interview for Teacher B can be found in Appendix H for the observation rubric in Appendix I, and the anecdotal notes in Appendix J.

A Look Forward

This chapter outlined the high points of the interviews and observations of the two fifth grade teachers who agreed to participate in this study. Chapter Seven will further examine these high points and discuss how they are related to the MIPs synthesized and examined in

this thesis. Chapter Eight will touch on the educational implications of these results and the reflections of the researcher.

Chapter Seven: Discussion

From the inception of this thesis, it was believed that teachers who use music to teach in the general classroom are rare. With this thought in mind, the goal of identifying exemplary teachers who do use music was established. After identifying, interviewing, and observing these teachers, their use of music was recorded in this thesis for other teachers to use as a resource for their own teaching. It was not anticipated, however, that finding area teachers to participate in this study would be so difficult. At first, this was disheartening, but in truth, though many teachers do use music to the benefit of their students, the finding that these teachers are so difficult to find lends to the stance that teachers who use music in the classroom are likely too few. The teachers that were identified and participated in this research provided a wealth of information on how and why they use music in the classroom.

The use of music seen in the observations largely focused on MIP 4, however, in the interviews, both teachers discussed their use of music under the other Music Integration Practices: MIP 1: Music as a Mnemonic Device; MIP 2: Music as Supplemental Material; MIP 3: Music as a Tool to Teach Curriculum; MIP 4: Music as a Tool to Influence Emotions and Attention; and MIP 5: Music to Build General Skills.

MIP 1

The second teacher uses music as a mnemonic, MIP One, to help her students. The resource she referenced is Scholastics Study Jams (<http://studyjams.scholastic.com>). This free website has math and science songs that students can listen to to help them remember information through the lyrics. Any teacher or student can type in the math or science subject he or she is teaching or learning about and songs related to the subjects will appear. Teacher B

plays the songs for the students several times so that they may learn them and sing along. The teacher reflected that the students often hum the songs during a test to recall information from the song. The catchy tunes get stuck in the students' heads and the students often find themselves singing the content information over and over, and thus remembering the information.

MIP 2

Both teachers expressed that they use music as supplemental material in history lessons on different time periods and cultures. Teacher A uses Jazz music from the 40s, Motown Rhythm and Blues, modern jazz, and polka. Teacher B uses pan flute music and circle dances to teach about the Native American culture. Music is a powerful teaching tool when examining different cultures and time periods because the political and social issues in each time era and culture strongly influence the music that is produced, and thus reflects these issues. Students can learn a great deal from hearing the music and understanding what they are hearing and why.

MIP 3

MIP Three, using music to teach content area, is possibly the most difficult MIP to integrate in the general elementary classroom. Many teachers, even those who are experienced in incorporating music into general lessons, are reluctant and often do not have the tools to use music to teach content. For example, in order to teach math using music, one must have a thorough understanding of music theory. Concepts in other subject areas simply do not match up with music and the topics artists sing or compose music about. Teacher B has used music in the past to help students with self-identification. Though developing self-concepts is not

academic by definition, it is still the use of music to teach a concept. The students were to find a song with lyrics with which they were able to identify, analyze the lyrics, and present how and why the song they chose represents who they are.

MIP 4

On the observation days in their classrooms, both teachers focused on MIP Four, to influence the focus, attention, and behavior of the students. The scientific research supporting MIP Four reflects the use of music in this way in that the proposed explanation for improved mood and focus in students when listening to music is that music helps regulate emotions. The first teacher used music for transitions and during independent work time. After implementing the use of music to indicate transition times, the transition times for the students decreased from three to four or five minutes to two minutes. The upbeat tempo of 120 beats per minute is meant to stimulate the students and encourage movement. The slower tempo of 60 beats per minute is meant to calm and focus students so that they may concentrate on their independent work.

The second teacher uses music under MIP Four to set behavioral expectations for the rest of the day. The students begin the day by regulating their emotions and are reminded to remain in control throughout the day. In observing the music activity and the academic activity afterwards, it seems that the music activity provided students with a metacognitive tool to monitor and self-regulate their emotions, imaginations, and body. As a result of this activity, the students were actively engaged and took responsibility for themselves during both music and academic activities.

MIP 5

The use of music to aid in growth of general skills, as identified in MIP Five, was referred back to MIP Four, regulation of emotions and focus, by both teachers. They believe that music helps the students focus and remain calm, thus contributing to growth in skill areas. In other words, because the students are able to control their emotions, their behavior, and focus their attention, they are able to focus on building other skills, as defined by MIP 5.

Concluding Remarks

Ultimately, the findings of this study provide opportunities for several conclusions. First, from interviewing and observing the two teachers, the information gathered indicates that one use of music in the general classroom is to influence the students' behavior, emotions, and attention. A majority of students, and people in general, choose to listen to music on their own time as a recreational activity, which implies that music is a source of enjoyment. If it can also be used as a teaching tool, teachers should feel compelled to use such a natural motivation tool to help students learn and keep them focused. It is also important to note that, as Teacher B stated, music has its place in the classroom. One caveat to remember is that music should not be used in excess so that it is no longer a motivator, but is used often enough to be effective and keep the students engaged. Each student must also be taken into account, as music may not have the same effect on everyone. Students who have trouble concentrating or those who have ADHD may find music distracting or detrimental to their success. The use of music in the classroom should be strategically intentional and have a purpose to be beneficial and effective. Most importantly, not enough elementary teachers include the arts, specifically music, in their general classrooms. As the pressure placed on teachers to raise student standardized scores increases, the use of hands-on, engaging, student-centered activities which

may strategically include music, appears to be decreasing to give way to textbooks and worksheets.

Chapter Eight: Personal Reflections and Educational Implications

As a future educator, the researcher's hope in completing this thesis was to identify various activities, strategies, and uses of music in the classroom that would lend to her growth as a teacher. Drama and art are often used in the general classroom, but music is utilized to a much lesser degree. A possible reason for this is that many teachers do not believe that they have the appropriate knowledge of music to utilize it in the classroom. This spurred the researcher to set a goal of researching how music is used and then how to present music to other educators in a way that would help them feel more comfortable and confident in using music. The supporting scientific evidence research alone provided an incentive to pursue this thesis. The initial research proved that exploring the use of music in the classroom was worthwhile because a large amount of research is being conducted and many of the studies are finding positive correlations between the use of music and improved skills and abilities of students.

A majority of people listen to music, sing along to songs, tap their feet to the beat, and allow their emotions to be influenced by music, and yet a majority of people do not identify themselves as experts in any aspect of music. In truth, most teachers have a great deal of experience with music and the ability to use it in the classroom. The second part of the goal was the more difficult part: to present music activities in a way that would help educators become comfortable and confident in using music to help their students learn. The best way to do this was to identify the teachers who had already accomplished this and were actively using music in their present classrooms. The results, though limited in quantity, were great in quality. Through the two interviews and observations conducted, it was possible to see

teachers implementing music in different ways and how the students were influenced by the music. Both music activities observed were effective and the students were motivated and fully engaged.

In her future classrooms, the researcher hopes to be the best teacher she possibly can. This means implementing engaging lessons; motivating her students to want to learn; exposing the students to a range of knowledge, cultures, and experiences, and so on. To be successful in all these areas, art is a great tool. Though this thesis is on the use of music in the general intermediate classroom, it is important to use music, drama, and visual art in lessons. In completing this thesis, the researcher has become more confident in using music in her own classroom, as she hopes others may come to feel. Moving forward, her goal is to develop a curriculum that employs the arts in many different ways to the benefit of her students and as a resource for other teachers who aspire to be the best.

Appendix A: IRB Approval Letter



University of Central Florida Institutional Review
Board Office of Research & Commercialization
12201 Research Parkway, Suite 501
Orlando, Florida 32826-3246
Telephone: 407-823-2901 or 407-882-2276
www.research.ucf.edu/compliance/irb.html

Approval of Exempt Human Research

From: **UCF Institutional Review Board #1
FWA00000351, IRB00001138**

To: **Sherron E. Roberts and Co-PI: Alexandria Harkins**

Date: **August 21, 2014**

Dear Researcher:

On 8/21/2014, the IRB approved the following activity as human participant research that is exempt from regulation:

Type of Review: Exempt Determination
Project Title: Exploring the Research Related to the Implications of Music
Training and the Music Integration Practices on Intermediate
Elementary Students
Investigator: Sherron E Roberts
IRB Number: SBE-14-10492
Funding Agency:
Grant Title:
Research ID: N/A

This determination applies only to the activities described in the IRB submission and does not apply should any changes be made. If changes are made and there are questions about whether these changes affect the exempt status of the human research, please contact the IRB. When you have completed your research, please submit a Study Closure request in iRIS so that IRB records will be accurate.

In the conduct of this research, you are responsible to follow the requirements of the Investigator Manual.

On behalf of Sophia Dziegielewski, Ph.D., L.C.S.W., UCF IRB Chair, this letter is signed by:

Signature applied by Joanne Muratori on 08/21/2014 04:52:52 PM EDT

A handwritten signature in black ink that reads 'Joanne Muratori'.

IRB Coordinator

Appendix B: Recruitment Letter

Recruitment Letter

Hello!

My name is Alexandria Harkins and I am an Elementary Education student at the University of Central Florida. I am currently attempting to conduct research for my Undergraduate Honors Thesis on the integration of music in the general, intermediate classroom. Your name and email contact was provided as an exemplary teacher who works to integrate music in your classroom by members on my thesis committee who recommended you as a participant. To collect the information, I need six participants who are elementary teachers and use music in their classroom in any manner (i.e. as background music, to teach a lesson, etc.). Participation would only be asked to make time on two days in the same week: the first day would be to complete a short interview; the second day would be for me to observe the class for the entire school day. If you would be willing to participate so that I may observe and learn from you, would you please contact me at the following email address by September 5th:

AlexandriaCourtH@knights.ucf.edu

If you have any questions or concerns to address with my faculty advisor, do not hesitate to contact Sherron Roberts at Sherron.Roberts@ucf.edu

Thank you for your time and attention,

Alexandria

Appendix C: Interview Questions

Interview Questions

Color Coding:

1) Mnemonic

2) Supplemental

3) Content

4) Emotion/Attention

5) Skills

Highest educational degree:

Years teaching:

Grade:

Do you have any musical background or training? If so, how much and in what form?

Instruments played?

How do you feel about using music in the classroom?

Do the students benefit from musical activities, background music, etc.? How so?

*Do you believe that music can influence the behavior, emotions, attentiveness, motivation, etc. of students? Why or why not?

*Do you believe that music can help students perform better academically by influencing their cognitive abilities? Why or why not?

*Do you play music while students are taking tests or working?

*Do you use songs to help students remember information, such as multiplications or the

continents?

*Do you use music from other time periods or places to demonstrate time or cultural differences?

*Do you ever have your students analyze the lyrics of a song to better understand a concept?

*Do you use music to teach math, such as fractions or multiplication?

* Do you use music to help (struggling*) students develop reading fluency?

*Intermediate students should have developed fluency already

Appendix D: Observation Rubric

Observation Rubric

Color Coding:

6) Mnemonic

7) Supplemental

8) Content

9) Emotion/Attention

10) Skills

Key:

2 – Clearly observes, or apparent.

1 – Not immediately observed but other evidence provided or implied.

0 – Not present or absent.

	2 Apparent	1 Implied	0 Absent
Teacher plays music in background throughout day.**			
Teacher uses music for transitions.*			
Teacher has instruments in			

classroom for students to interact with.			
Teacher has instruments in classroom that he/she plays.			
Students seem engaged in music activities.			
Students seem influenced by background music or respond well to transition music.*			
Teacher reads a book that employs a song or a strong sense of rhythm.*			
Teacher uses a song to help students remember simple information, such as			

multiplications or continents.*			
Teacher plays music from different time periods or cultures to demonstrate differences.**			
Teacher has students examine, sing, or listen to a song to understand a concept.*			
Teacher has students study the meter/note value of music to learn multiplication or division.*			
Teacher uses music to teach/help struggling students.			

Appendix E: Teacher A Interview

Teacher A Interview

Highest Educational degree: Elementary Education B.S.

Years teaching: 10

Grade teaching: 5

Do you have any musical background or training? If so, how much and in what form?

Vocal instruction in high school and through a private tutor.

Instruments played?

None

How do you feel about using music in the classroom?

Love it! I think music is a very therapeutic measure for those that tend to stress. It also helps with classroom management.

Do the students benefit from musical activities, background music, etc.? How so?

Helps with processing, motivation, and classroom management. Keeps kids focused and assists with transitions, based on number of beats per minute.

Do you believe that music can influence the behavior, emotions, attentiveness, motivation, etc. of students? Why or why not?

Absolutely. Faster transitions, improves moods.

Do you believe that music can help students perform better academically by influencing their cognitive abilities? Why or why not?

Yes. It keeps the students focused and research shows it does improve some skills.

Do you play music while students are taking tests or working?

Sometimes with tests. All the time with projects in class.

Do you use songs to help student's remember information, such as multiplication tables or the continents?

I have not yet, but plan to incorporate in class.

Do you use music from other time periods or places to demonstrate time or cultural differences?

Yes, I use 40's Jazz, MoTown R&B, Modern Jazz, and Polka.

Do you ever have your students analyze the lyrics of a song to better understand a concept?

Not sure.

Do you use music to teach math, such as fractions or multiplication tables?

I might use in the future.

Do you use music to help (struggling*) students develop reading fluency?

No, not yet. Some of my kids have attention problems and lose focus on their reading due to background sounds.

Appendix F: Teacher A Observation Rubric

Teacher A Observation Rubric

	2 Apparent	1 Implied	0 Absent
Teacher plays music in background throughout day.	X		
Teacher uses music for transitions.	X		
Teacher has instruments in classroom for students to interact with.			X
Teacher has instruments in classroom that he/she plays.			X
Students seem engaged in music activities.	X		
Students seem			

influenced by background music or respond well to transition music.	X		
Teacher reads a book that employs a song or a strong sense of rhythm.			X
Teacher uses a song to help students remember simple information, such as multiplications or continents.			X
Teacher plays music from different time periods or cultures to demonstrate differences.		X	
Teacher has students examine, sing, or listen to a song to			X

understand a concept.			
Teacher has students study the meter/note value of music to learn multiplication or division.			X
Teacher uses music to teach/help struggling students.			X

Appendix G: Teacher A Anecdotal Notes

Teacher A Anecdotal Notes

Notes: Because the fifth grade classes are departmentalized, the students go to one class for reading and social studies and another for science and math. This means that the students have additional transition time (lunch, specials, subjects). The students move very slowly and take a long time to get where they need to be. Teacher A decided to try using music to make transition times go more smoothly and quickly.

Upon entering the room, the students are greeted by upbeat music playing. The students are singing along as they unpack their stuff and prepare for class. The teacher also has a timer counting down minutes on the overhead projector.

Music off.

Classical music is played during “thinking time.”

Transition from math to science – teacher plays music for three minutes, again displaying timer on board. Students are ready and back in seats before time is up...completed transition in two minutes.

Science lesson, classical music played during thinking time and group discussion.

Upbeat music is played to pack up to change classes.

They pack up quickly and play a game. Teacher plays music and the students dance until the music turns off, at which point the students must freeze

Students exit room.

Appendix H: Teacher B Interview

Teacher B Interview

Highest Educational degree: Elementary Education B.S.

Years teaching: 10

Grade teaching: 5

Do you have any musical background or training? If so, how much and in what form?

None

Instruments played?

None

How do you feel about using music in the classroom?

It has its place...It distracts those students with ADD but is good for students with autism and soft music helps the higher achievers focus.

Do the students benefit from musical activities, background music, etc.? How so?

See above.

Do you believe that music can influence the behavior, emotions, attentiveness, motivation, etc. of students? Why or why not?

I use music as an incentive for my students to control their behavior. The students want me to play music and it can be a reward for them.

Do you believe that music can help students perform better academically by influencing their cognitive abilities? Why or why not?

Yes, if it helps calm and focus the students. I also use Scholastic Steady Jams to help the

students remember information and I'll often hear them humming the songs to themselves during the test.

Do you play music while students are taking tests or working?

I let the students decide if they want it. If its distracting for some, I don't.

Do you use songs to help student's remember information, such as multiplication tables or the continents?

Study Jam.

Do you use music from other time periods or places to demonstrate time or cultural differences?

When we learn about Native Americans, I use music with pan flutes and we learn about circle dances. We used to make instruments, but not anymore.

Do you ever have your students analyze the lyrics of a song to better understand a concept?

In the past I have done lessons on "understanding who you are." The students had to find a song and explain how they related to the lyrics or how the lyrics represented who they were.

Do you use music to teacher math, such as fractions or multiplication?

Usually when we get to fractions the students talk to the music teacher about fractions and how they relate to music.

Do you use music to help (struggling*) students develop reading fluency?

No.

Appendix I: Teacher B Observation Rubric

Teacher B Observation Rubric

	2 Apparent	1 Implied	0 Absent
Teacher plays music in background throughout day.		X	
Teacher uses music for transitions.		X	
Teacher has instruments in classroom for students to interact with.			X
Teacher has instruments in classroom that he/she plays.			X
Students seem engaged in music activities.	X		
Students seem influenced by			

background music or respond well to transition music.	X		
Teacher reads a book that employs a song or a strong sense of rhythm.			X
Teacher uses a song to help students remember simple information, such as multiplications or continents.	X		
Teacher plays music from different time periods or cultures to demonstrate differences.		X	
Teacher has students examine, sing, or listen to a song to understand a concept.			X

Teacher has students study the meter/note value of music to learn multiplication or division.			X
Teacher uses music to teach/help struggling students.			X

Appendix J: Teacher B Anecdotal Notes

Teacher B Anecdotal Notes

Students unpack and go to specials.

When they return they open their workbooks to learn about the Aztec and Maya. Read two pages aloud.

Teacher tells students to look for a scene to make a tableau (frozen picture) out of as they read.

The tableau must represent an important aspect of the Aztec life.

Students reread pages silently.

Teacher begins music.

Students immediately get up from their desks and push them to the perimeter of the room. They then gather in a circle in the middle of the room.

They begin the activity by signing a “contract.” The teacher provides a monologue for the students to move and breathe to. The contract includes that the students will remain in control of their body, their imagination, the behavior, and voice. They repeat the signing of the contract until each student exhibits sufficient control of their body, as judged by the teacher.

The teacher then provides the criteria for which students must form groups: “a group of two boys and two girls... A group of one person wearing a yellow shirt...” If the students are unable to find a group in the designated time, they are to move to the observation deck. Repeat grouping activity until only 3 students are left.

All students return to circle and complete one more grouping exercise. This group is their tableau group.

Students make tableau. Music still playing in background.

Students present tableau.

Students move desks back to proper placements.

End of lesson.

Appendix K: Timeline

Timeline

SUMMER	Date	Objective
✓	June 3, 2014	HIM Orientation
✓	June 10, 2014	Formatting Workshop
✓	June 11, 2014	Narrow topic and find research
✓	June 18, 2014	Begin writing Lit Review
✓	June 25, 2014	Consult with a librarian
✓		Find scientific evidence articles
✓	July 2, 2014	Write up supporting scientific evidence sections
✓		Begin IRB Certification
✓	July 9, 2014	Write Methodology
✓		Complete IRB Certification
✓		Create Signature Page
✓	July 16, 2014	Have mock interview questions and observation rubric prepared
		Have Rationale prepared
✓	July 18, 2014	Have Proposal completed and to committee
✓	August 1, 2014	Signature Page and Proposal due
✓	August 1-16, 2014	Recruit Participants

FALL		
✓	October, 3, 2014	Have Defense Date set
✓	October, 9, 2014	Andover Elementary School
✓	October 15, 2014	Hans Christian Andersen Elementary School
✓	October 20, 2014	Check for new literature
✓		Have results written
✓	October 23, 2014	Meet with thesis editor.
✓	October 29, 2014	Have Discussion written
✓		Have Conclusion written
✓	October 31, 2014	Submit thesis to Thesis Editor
✓	November 14, 2014	Thesis Defense
✓	December 1, 2014	Thesis due to Honors College w/ submission form and
✓		thesis by 5:00 p.m.
✓		Thesis due to Library
✓		File intent to graduate with Honors College
✓	December 5, 2014	Exit Slip due

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