

Running head: LEARNING STYLES IN THE MUSIC CLASSROOM

**AN EXPLORATORY STUDY OF LEARNING STYLES
IN THE ELEMENTARY MUSIC CLASSROOM**

by

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ABSTRACT

Today's classrooms are becoming increasingly diverse and teachers are expected to develop strategies that reach every student (Immanuel, 2011; Williams, 1999). Since not all students learn the same way, teachers must be willing to adjust their teaching to meet the needs of students, however, teachers often teach the way they prefer to learn instead of recognizing the diverse learning styles of their students (Gumm, 2003; Hawk & Shah, 2007; Flannery, 1996; Labuta & Smith, 1996; McKeachie, 1995; Fatt, 1993, 2000). This study addressed learning styles in the elementary general music classroom. Research questions were: (1) To what degree does teachers' awareness of personal learning styles influence their strategies in teaching an American folk song? (2) When multiple strategies are used, do teachers utilize their personal styles over other styles? The research sites included elementary general music classrooms ($N=13$) where fourth grade students received instruction. Teachers were separated into two groups. Group A ($n= 7$) completed a learning style questionnaire. Group B ($n= 6$) did not complete a questionnaire. Teachers were observed by video during a two-week treatment period. Data indicated that teachers favored teaching strategies that matched their own personal learning styles. All teachers, whether they were aware or not aware of their learning styles, engaged students with multimodal strategies. Most of the teachers who were aware of their learning style used their dominant learning style as their dominant teaching style.

Keywords: Learning style, Learning modality, VARK

CHAPTER I INTRODUCTION

Today's teachers are faced with challenges that did not exist several decades ago. Classrooms are more diverse, students have new learning needs and the expectations of teachers are at an all time high. In today's school climate, a major focus is placed on teacher quality and accountability (Colwell, 2011). Teachers are expected to develop strategies that reach every student (Immanuel, 2011; Williams, 1999). Not all students learn the same way and teachers must be willing to adjust their teaching to meet the demands of students in their classrooms, however, teachers often teach the way they prefer to learn instead of recognizing the diverse learning styles of their students (Hawk & Shah, 2007; Gumm, 2003; Flannery, 1996; Labuta & Smith, 1996; McKeachie, 1995; Fatt, 1993, 2000).

As a new teacher in the field of music education, I made every effort to immerse myself in the newest educational strategies and techniques to use in my classroom. I attended conferences and workshops. I read books on classroom management, child psychology and methodology. During my first couple of years teaching, I encountered various teaching colleagues when I attended workshops. I often heard veteran teachers describe their current strategies using statements like these: "I do this every year."; "This one always works."; "I tried this my first year and I still use it today, twenty years later." Fundamentally, there is no problem with these statements. Teachers were using strategies that worked for them. They used materials that they remembered from when they were students and used them with their students. However, in my experience, I have observed

teachers who have been in the profession for a number of years who are reluctant to experiment with new approaches in the classroom. Often, teachers who have a successful year of lessons will recycle those same plans instead of trying new approaches with new students.

Available technology has transformed the culture and student learning at home and at school. According to the National Association of State Boards of Education Study Group (2010), the traditional model of education that once worked with great success is no longer the model that should be used with today's technologically savvy students:

The current education model in the United States, a relic of the Industrial Age, is increasingly out of touch with the needs of society and the students it serves. The Internet and efficient global communications have fundamentally changed how individuals access information. Today's generation of students is growing up in an environment where information is available anywhere and anytime on any topic imaginable. They find the methods used by schools in stark contrast with how they learn and interact outside of the classroom. (p. 6)

As students entering the classroom become increasingly diverse, so do the learning styles that students bring with them. Students have unique learning styles in which they absorb information (Kolb, 1974; Myers & Briggs, 1975; Barbe, Swassing & Milone, 1979; Gregorc, 1985; Honey & Mumford, 1986; Fleming, 2001). Teachers who understand that different learning styles exist in their classrooms should make efforts to engage multiple types of learners. Teaching all students the same lesson in the same way without identifying the multiple learning styles or offering a reflective response is unprofessional, irresponsible and immoral (Dunn, 1993).

Statement of Problem

The problem of this study was to determine whether teachers' awareness of their own learning styles influenced their choice of strategies to teach an American folk song. This exploratory design was intended to collect data to answer research questions.

Need for the Study

Papierniak (2011) studied music teachers and their students' learning styles using Neil Fleming's (2001) *VARK*¹ questionnaire as the assessment tool for evaluation. Based on the sample collected using the *VARK* questionnaire with music students and teachers, Papierniak concluded that teens studying music prefer multimodal learning whereas most music teachers prefer to learn by reading or writing. Papierniak recommended that teachers become aware of their student's learning styles and their own personal learning styles and adjust accordingly to meet the needs of their students. While Papierniak's study answered questions about teacher and student learning styles in private music studios, it did not address learning styles in the PreK-12 school music curriculum. Only a small portion of recent research has involved elementary age music students who are taught collectively as a group. Little research has specifically addressed the learning styles of elementary music teachers and their students who are taught general music as part of a formal elementary school music curriculum. In this study I explored teachers' knowledge of learning styles and sought to answer questions about teacher's perceptions of their own learning styles and how that knowledge influenced or did not influence the strategies teachers used to engage students. The current research on how music relates to learning styles is limited. In this

¹ VAR^K is an acronym that stands for: Visual (V), Aural (A), Read/Write (R) and Kinesthetic (K).

study I investigated learning styles in the music classroom and contributed to related literature discussed in Chapter II.

Research Questions

Research questions for the study were: (1) To what degree does teachers' awareness of personal learning styles influence their strategies in teaching an American folk song? (2) When multiple strategies are used, do teachers utilize their personal styles over other styles?

Scope of Study

This study examined fourth grade general music teacher's perceptions of their own learning styles and how that influenced the ways they taught their students. Participating teachers were observed during a treatment period.

Definitions

Learning style is the preferred way in which an individual retains information (Pritchard, 2005). This term is often used in conjunction with *learning preference* which describes an individual's preferred way of learning. An individual might discover their preferred ways of learning by completing a questionnaire or learning style inventory. In the 1970s-1990s, many learning styles models were created in order to help individuals reflect upon their personal learning preferences and become aware of other learning styles (Kolb, 1974; Myers-Briggs, 1975; Swassing-Barbe, 1979; Gregorc, 1985; Honey-Mumford, 1986; Fleming, 2001). Today, learning style models are still used in the workplace, schools and other institutions and they are being revised to meet the needs of people living in today's changing society.

Learning modalities are the channels by which people understand information through sensation, perception or memory (Barbe, Swassing & Milone, 1979). Some examples of modes are: visual, kinesthetic or aural. For instance, a teacher who has visual learners in the class may use graphs, maps or color-coded charts to engage the students.

VARK is an acronym for the learning style model developed by Fleming (2001) that is used in the current study. Each letter represents a separate sensory learning style as indicated by the results of the questionnaire that participants complete. V means visual, A means aural, R means reading/writing and K means kinesthetic. When a participant possesses multiple styles, they are identified as *VA*, *VR*, *VK*, *VAR*, *VAK*, or *VARK* they are considered a *bimodal* or *multimodal learner*.

Summary

Today, teachers have students who are different from the students they had twenty years ago. No two students are alike. They all come with unique learning needs and learning styles. It is essential that teachers reflect on their practice and consider changing their strategies in order to engage the diverse students in today's classroom.

The current research on how music relates to learning styles is limited. This study seeks to explore learning styles in the music classroom and contribute to related literature discussed in Chapter II.

CHAPTER II REVIEW OF LITERATURE

Today's classrooms are becoming more and more diverse and teachers are expected to develop strategies that reach every student (Immanuel, 2011; Williams, 1999). Not all students learn the same way and teachers must be willing to adjust their teaching to meet the needs of students in their classrooms, however, teachers often teach the way they prefer to learn instead of recognizing the diverse learning styles of their students (Hawk & Shah, 2007; Flannery, 1996; Labuta & Smith, 1996; McKeachie, 1995; Fatt, 1993, 2000). Some teachers do not critically reflect upon their teaching practice. It is vital that teachers reflect and think critically about their teaching approaches in order to be able to relate to the students entering the classroom today (Brookfield, 1995).

Learning Styles

Why do students fail at school? What are the students doing wrong? What methods are the teachers using that are not allowing students to learn? Why do some students succeed and others fail? People have been asking these questions for a long time. In the past, blame would be placed on the students for not paying attention or on their socioeconomic status or ethnicity. For example, students of low socioeconomic status may not have the resources or access to materials or good schools whereas students of a high socioeconomic status may have more resources, access to materials and they may be able to choose to attend a particular school based on where they live. As history evolved, so did beliefs about problems with education. The focus then became the schools, teachers, their methods and

approaches used in the classroom. (Dunn & Dunn, 1978). There was a new focus on teacher accountability, instructional approaches and learning styles. Researchers worked to find factors that influenced the learning styles of students (Trilling & Fadel, 2009). In the past several decades, many learning style models were developed to identify individual learning styles. This section describes six different learning models, many of which are still used today in learning style research.

Kolb's experiential learning theory. The first model is Kolb's *Experiential Learning Theory* (1974). This model suggests that learning is a different experiential process for each individual. The process is organized in a cycle that usually begins with Concrete Experience (CE), Reflective Observation (RO), Abstract Conceptualization (AC) and Active Experimentation (AE). The most effective learning occurs when all four parts of the cycle are combined. Learning styles occur when two of the processes are combined. Kolb's four types of learning styles include: the *diverger* (CE/RO), the *assimilator* (RO/AC), the *converger* (AC/AE) and the *accommodator* (AE/CE). The *diverger* is one who often asks for explanations for why they are doing something. They like to observe, brainstorm, use their imagination and tend to be sensitive. The *assimilator* is one who often asks for explanations as to what they are doing. They like organized, logical information they can put in a precise order. The *converger* is one who asks how something works. They like to solve problems, find practical ways to use ideas and like to be active in their work. The *accommodator* is one who often wonders about scenarios. They learn by doing, work with their hands, rely on their feelings and enjoy working with other people. A measurement tool known as the *Kolb Learning Style Inventory* (LSI) is used to determine an individual's learning style. To complete the Kolb LSI, a person completes a questionnaire that requires

ranking their learning style using twelve questions. The LSI is typically completed as a self-test (Kolb, 1974; Hawk & Shah, 2007; Pritchard, 2005).

Myers-Briggs model. The connection between personality and learning style is important to consider. The *Myers-Briggs Model* (Myers & Briggs, 1975) outlines personality types. The model is derived from the theories of psychologist Carl Jung. Eight types of personalities are listed in this model: *extroverts, introverts, sensors, intuitors, thinkers, feelers, judgers and perceivers*. Two of the most famous personality types indicated in this model are the *extroverts* and *introverts*. (Pritchard, 2005). *Extroverts* enjoy talking about ideas, working in groups and trying new things, whereas *introverts* enjoy listening to ideas, working alone, thinking first and trying new things later. *Sensors* enjoy clear goals, paying attention to details and focusing on practical life skills. *Intuitors* enjoy using their imagination, creativity, variety, and big ideas instead of details along the way. *Thinkers* like to be treated fairly and enjoy clear directions. *Feelers* like to work with friends, enjoy choosing their own topics and like to help others. *Judgers* enjoy short-term goals, like having specific expectations laid out before them and enjoy finishing their projects on time. *Perceivers* like new experiences when learning, open-ended projects and are flexible. The assessment tool for this model, called the Myers-Briggs Type Indicator (MBTI), is a questionnaire that determines personality type. This tool is commonly used in the workplace.

Swassing-Barbe modality index. Swassing, Barbe & Milone (1979) suggest that people have dominant, secondary or mixed modalities that they use to process information. Modalities are defined as the channels by which people understand information through sensation, perception or memory. The learning modalities described in this model are:

visual, auditory and kinesthetic. Students are evaluated by completing the Swassing- Barbe Modality Index (SBMI). The SBMI requires students to complete a matching task to determine their learning style. It is designed in a way that is appropriate for young children to use because it does not require the student to read the questions. The SBMI is to be used as a supplement for assessing learning modalities in coordination with teacher observations during the administration of the test. After collecting the data needed to identify learning types, it is suggested that teachers use the results and structure lessons that incorporate student strengths. This assessment tool allows teachers to develop strategies that match with students who possess specific modality strengths. The SMBI has been used with students of all ages to identify how they learn, but it has been used most often in elementary school settings because of the format of the test.

Gregorc learning style model. The Gregorc Learning Style Model (1985) is a theory based on Gregorc's original research and Kolb's work on learning styles. Gregorc asserts that individuals have strong natural dominant learning styles. Four types of learning styles are listed in this model: Concrete Sequential (CS), Abstract Sequential (AS), Abstract Random (AR), and Concrete Random (CR). *Concrete Sequential* learners prefer clear and logical instructions they can follow. They are precise in their work, extremely motivated to perform well and take their work seriously. *Abstract Sequential* learners enjoy symbols, charts and logical clear instructions. They are excellent at manipulating others by using carefully constructed words. *Abstract Random* learners enjoy discussing ideas in a variety of ways, people pleasing and reflective learning. They enjoy utilizing a variety of methods to complete a task, such as writing a poem, a song or a subjective essay. *Concrete Random* learners enjoy experimenting and solving problems through trial and error. They function

well in an environment that has many sensory stimuli. The *Gregorc Style Delineator* is the measurement tool designed to measure one's awareness of his or her own learning preference (Gregorc, 1985; Hawk & Shah, 2007).

Honey-Mumford model. Similar to the Myers-Briggs model, Honey and Mumford (1986) classify learners according to learning style and personality traits. Kolb states that learning is most effective when all parts of the cycle are brought together. Unlike Kolb, Honey & Mumford suggest that one style is dominant and it is advised that the individual completely understands and adopts their dominant style as their own. The four types of learners in this model include: *activists*, *reflectors*, *theorists* and *pragmatists*. The *activist* is one who learns by doing. They like to share ideas with others in a group setting, and are often enthusiastic and open-minded. The *reflectors* learn by observing. They are often indecisive because they take time to reflect and learn from others before making a decision. *Theorists* are logical observers. They find connections between old and new ideas by organizing them into a framework. *Pragmatists* are creative. They are confident seeking new ideas and enjoy solving problems. Like Kolb and Myers-Briggs, individuals complete a Learning Style Inventory developed by Honey-Mumford to identify their preferred style of learning (Honey & Mumford, 1986; Pritchard, 2005).

Fleming's VARK model. In the VARK model, Fleming (2001) describes four types of learning styles based on an individual's senses. VARK is an acronym that stands for: Visual (V), Aural (A), Read/Write (R) and Kinesthetic (K). *Visual* learners prefer to learn by seeing. They enjoy graphs, posters, maps, pictures and other things of that sort. *Aural* learners prefer to learn by hearing. They enjoy lectures, discussions, recordings and other things similar to those listed. *Readers/writers* prefer to learn by reading or writing. They like

making lists, writing diaries, reading dictionaries and other things similar to those listed.

Kinesthetic learners prefer to learn by doing. They enjoy physical activities, manipulative objects and experiential learning. Like all of the other models listed, this model uses a short questionnaire as an assessment tool, called the VARK Questionnaire. Fleming indicates that higher student achievement is attained when instructors match their teaching strategies with the learning styles of the students in their classrooms. The VARK questionnaire is used in this study (2001).

Summary of Learning Styles

The learning styles described support similar ideas and reinforce that people learn in different ways. When teachers become aware of their students learning styles and utilize multiple strategies, student achievement increases (Pritchard, 2005). In the theories and models described, learning styles are evaluated by completing questionnaires or self-tests. The primary purpose of the tests and questionnaires is not to diagnose the learner but to encourage self-reflection on the learning process.

Kolb describes learning as a cyclical process that combines many different individual experiences. The learner processes the information by doing, reflecting, thinking critically and experimenting. Kolb describes the most effective learning environment as one that includes all four parts of the process. Learning styles occur when two specific parts of the process are combined. This theory advocates learning as a process that combines experiences and is very different for each individual, depending on where they enter the cycle of learning (1974). The Gregorc Learning Style Model is derived from Kolb's research on learning styles. This model simplifies Kolb's original cyclical process theory and combines several different combinations of experiential learning conditions. Gregorc

adopts Kolb's ideas about concrete and abstract experiences, but classifies each experience to be random or sequential (1985).

The Myers-Briggs Model addresses personality types. The model is derived from the writings of psychologist, Carl Jung. This model emphasizes the important role an individual's personality plays in their ability to learn and process information. Employers often use this questionnaire to promote a collaborative work environment (1975). Honey-Mumford emphasizes the importance of clearly defining a dominant learning style. In this model, people learn best when they identify their dominant learning style traits and develop an understanding of their own style. When learners identify their own style, it allows them to understand how best their individual needs will best be met (1986).

Swassing-Barbe Modality Index suggests that students possess learning modality strengths. Some students learn visually or aurally while others learn kinesthetically. It is advantageous for teachers to identify their student's learning strengths so they can structure their teaching to match the way the students learn best. The test can be administered to young children because it does not require reading skills (1979). Fleming's VARK Model allows the learner to clearly define his or her dominant learning style. Fleming maintains that an individual should possess a combination of learning traits. The most ideal learning occurs when teachers are aware of their own learning traits and make use of multiple strategies in their approach to reach many types of learners (2001).

Criticism of Learning Styles

While learning style models have been widely used and supported by many, others have criticized these models. This section discusses criticisms made by Curry, Stahl and Willingham.

Curry discusses the use of measurement tools in conjunction with learning style models. Measurement tools used in learning style models are not accurately reviewed and assessed before they are used. Researchers often become more focused on marketing their measurement tool than spending the necessary time to test it and confirm it is valid. For example, test developers fail to provide the test users with the margins of error that sometimes occur. If a test is twenty questions and the test user answers the twenty questions accurately but receives a score with which they disagree, test developers do not give the users explanations that describe the reasons why their scores turned out the way they did. Test users desire explanations that provide them with valid evidence about their scores, but this is not the case with many measurement tools used with learning style models (1990).

Stahl addresses matching student learning styles with specific teaching styles. Matching a learning style with a teaching style has little effect on the student. Often times it puts them into a self-fulfilling box where they are unable to open their minds to other strategies to learn new information. Measurement tools created to assess learning styles tend to be vague and sometime generate responses that are not entirely accurate. For example, if a participant is taking a questionnaire about their learning style and they read a question the way that was not intended by the author of the questionnaire, they may answer the question in a way that would not reflect their actual preferred learning style. In an educational setting, where there are twenty or more students and one teacher in a classroom, it is difficult for the

teacher to utilize individual methods of instruction that allow each of the students to learn. (1999).

Willingham argues that all learning should be a meaningful experience for the students involved. Teachers should not try to match their teaching style with the student's learning style. This does not provide the most effective instruction for the students. Instead, they must choose the modality that fits best with the content area they are teaching. Strong memories are made when students have meaningful experiences learning. Even if a teacher uses a specific modality to teach a particular objective, it makes no difference to the students. Their brains will automatically extract the parts of the information that are most important, according to their natural modality strengths (2005).

Many researchers have criticized learning style models. Measurement tools are quickly put on the market before they are accurately assessed. This does not allow test users to have an accurate idea of their projected learning style as indicated on the tests (Curry, 1990). Matching learning styles with teaching styles has not proven to be effective with student achievement. When students become aware of their own personal learning styles, they are at a disadvantage because they expect a particular method of instruction and when that method is not used, they have difficulty processing the information presented (Stahl, 1999). Modalities are not as important as creating a meaningful learning environment for the students so they will later recall the information. When students are presented with new material in a way that allows them to have an active role experiencing the material, they are able to remember the information more successfully (Willingham, 2005).

Learning Styles and Music

Formal music education begins with children in pre-school or Kindergarten in most school settings. Music educators who work with young children have the great responsibility of teaching the basic skills of music making. Often elementary music teachers neglect to recognize the diverse group of students they teach. No two human beings are exactly alike. Each person has his or her own set of beliefs, values and experiences. When people are put together in groups to receive instruction all together, it is essential that teachers make efforts to use multiple instructional approaches (Bradley, 2009). When teachers design their lessons so they reach many learning styles, they are using differentiated instruction (Labuta & Smith, 1996). Consider the students in today's classroom. They use technology in ways that are completely unimaginable to most teachers. Some students spend hours in front of their televisions or computers playing video games where they receive constant visual stimulation. Other students spend hours listening to music on iPods where they are being stimulated aurally. Still others spend time in athletics, dance, theatre and the like. It is irresponsible for teachers who have this knowledge about their students to use only one approach to teaching. In order for learning to occur, students must be actively engaged in the process (Dunn, 1993; Labuta & Smith, 1996). If only a few students are able to engage in the material because only one approach is being used, teachers are the ones to blame.

In the past couple of decades, several studies were conducted that investigated learning styles in music education. The following studies examined learning styles of high school age students. Stuber (1997) studied the relationship between learning style, personality and specific teaching behaviors of instrumental music teachers. Teacher's

learning style and personality were evaluated by using the *Myers Briggs Personality Type Indicator* and the *Gregorc Style Delineator*. Twenty band directors were divided into groups based on experience and their teaching behaviors were observed. Specific behaviors that were observed included time management, verbal behavior, nonverbal behavior and musical concepts verbally addressed. Stuber made several conclusions. Teachers with less experience disciplined students for longer periods of time. Teachers with abstract learning styles used analogies, modeling and illustrations more than teachers with concrete learning styles. Introverted teachers were more approving of student's work than extraverted teachers. Dorfman (2006) investigated the influence of learning styles, music experience, technology experience, and strategies for teaching music technology in a high school music education setting. Ninety-four high school students completed a survey that focused on their music technology experiences. The students completed the *Gregorc Style Delineator* to find their dominant learning styles. Students were asked to use the program *Sibelius* under two different treatment conditions. One group used independent exploration and another group viewed a video tutorial. Then, students completed a task in *Sibelius*. Dorfman concluded that *Sibelius* is an example of a software program that is appropriate to use in an educational setting with students of varied learning styles and levels of technology experience.

Other researchers found that private music instructors should become aware of their students' individual learning styles. Green (2010) conducted a pilot study on learning styles used in private instrumental lessons. Fifteen instrumental students were observed as they were instructed to use an exclusively aural approach to learn a new piece of music. The participants in this study were middle and high school aged students. Green found that when students were asked to use only an aural approach to learn a new piece of music,

several methods emerged from the participants thinking. The participants used “impulsive,” “shot-in-the-dark,” “practical,” and “theoretical” methods in order to help them learn the music by ear. Papierniak (2011) studied private music teachers and their students’ learning styles using the VARK model as the assessment tool for evaluation. Papierniak made several conclusions in her research. Based on the sample she collected using the VARK questionnaire with music students and teachers, she concluded that teens studying music preferred multimodal learning whereas most music teachers preferred to learn by reading/writing. A multimodal learner prefers several strategies (ie. visual/aural/reading and writing/kinesthetic) whereas a single mode learner prefers one strategy (ie. reading/writing only). Papierniak recommended that teachers become aware of their student’s learning styles and their own personal learning styles and adjust accordingly to meet their needs of their students.

Pautz (1988) conducted a study that investigated learning styles in the elementary music classroom. Pautz studied learning modalities using the Swassing-Barbe model. Forty-eight third and fourth grade general music students participated in the study. Students were selected based on participants’ scores from the *Swassing-Barbe Modality Index*. Students were placed in three treatment conditions where the same lesson was taught but using different learning modalities as the treatment. In Group 1, an auditory approach was used, in a Group 2, an auditory/visual approach was used and in Group 3 an auditory/kinesthetic approach was used. Pautz found that when an instructional strategy was matched with a learning strategy, students benefited positively.

While these studies answered questions about teacher and student learning styles in music educational settings, only a small portion of research involved elementary age music

students. Little research has specifically addressed the learning styles of elementary music teachers and their students who are taught general music as part of a formal elementary school music curriculum.

Conclusions

It is important that teachers develop an awareness of their students' learning styles, however, teachers should use caution when trying to match their teaching styles to their students' specific styles of learning. Studies have suggested that it is most effective to engage multiple learning approaches instead of trying to match specific approaches with specific learning styles (Loo, 2004). Teachers who use a variety of learning approaches are able to engage more learning styles (Bauer, 2001; Fleming, 2001; Loo, 2004). Teachers often select repertoire that engages specific things. For example, teachers engage repertoire in specific ways, often times, simply aurally. Some teachers might be reluctant to teaching a rap or something that deals with rhythm or theatrics, creativity or improvisation because they are naturally drawn to repertoire that is appealing to their personal learning styles and personal musical styles. When teachers want to engage a certain type of learning, they choose a specific repertoire and only teach to one type of learning.

People possess all different types of skills and it is important to recognize the value of each one. Too often too much emphasis is placed on one type of skill instead of recognizing the many diverse abilities people acquire naturally (Gardner, 2006). The related literature mutually supports the same overall goal of learning modalities. The purpose of each one is to promote self-reflection and awareness of multiple learning styles.

The current study sought to determine whether teachers' awareness of their own learning styles influenced their choice of strategies to teach an American folk song in the fourth grade general music classroom.

CHAPTER III METHOD

Research questions for the study were: (1) To what degree does a teacher's awareness of personal learning styles influence their strategies in teaching an American folk song? (2) When multiple strategies are used, do teachers utilize their personal styles over other styles?

Research Sites and Participants

In order to collect data that would reflect information about today's current elementary music settings, homogeneous sampling was used. Homogeneous sampling is a purposeful sampling strategy in which the researcher samples individuals or sites based on membership in a subgroup with defining characteristics. (Creswell, 2008). The sample involved thirteen fourth grade general music teachers. The research sites were fourth grade general music classrooms where students received music instruction as part of the formal school curriculum. The participating schools involved a variety of diverse populations, demographics, in public, charter and private school settings, each with diverse instructional hours per week in rural, urban and suburban communities. The participating teachers each spent an average of forty-five minutes total on the lesson. Twelve of the teachers in the sample taught at schools in the state of Michigan and one teacher taught at a school in the state of Virginia. All of the teachers in the sample had at least two years of teaching experience. All teachers had experience using one or more of the following music educational approaches: Orff-Schulwerk, Kodaly and Gordon's Music Learning Theory.

Teachers obtained permission from administration before collecting data and completed an informed consent form. (See Appendix A)

Data Collection Procedures

Teachers ($N= 13$) were observed during a two-week treatment period in which all teachers taught the same song, *Simple Gifts*. (See Appendix B and Appendix C) Teachers in Group A completed Fleming's *Visual Aural Reading Kinesthetic VARK Questionnaire* (2001) before teaching the lesson. (See Appendix D) The *VARK* was used in a recent and similar study conducted by Papierniak (2011). The results of the questionnaire provided details about the teacher's personal learning styles. Teachers in Group B did not complete the *VARK Questionnaire*, but they taught the same lesson as Group A.

Group A. Teachers in Group A completed the *VARK* before teaching the lesson. The purpose of the questionnaire was for the teachers to become aware of their own learning styles before they started the teaching period. After the teachers completed the questionnaire, they began the two-week teaching period.

Group B. Teachers in Group B were the non-treatment participants. They started the two-week teaching period without completing the questionnaire. They taught the same objectives as Group A, but did not complete the questionnaire at any point during the study.

Lesson. During the treatment period, both groups of teachers taught the same song to the students using any strategies they preferred. Teachers in Group A completed the *VARK Questionnaire* before they taught the lesson in order to sensitize the teachers to different types of learning styles. Teachers in Group B did not take the questionnaire, but they taught the same lesson as the teachers in Group A. Each teacher selected one section of fourth grade students.

After the teachers in Group A completed the *VARK Questionnaire*, they taught the American folk song, *Simple Gifts* to one section of fourth grade students over the course of two weeks. A running video camera was set up to record the strategies used by the teacher over the course of the two weeks. Observations were recorded using two methods of systematic observation: (1) a behavior checklist and (2) digital recording software (Mays, 2011). The researcher designed the checklist. It is called the *Learning Styles in Music Observation Checklist (LSMOC)* (See Appendix E). These strategies are divided into five sensory learning style categories: (V) visual, (A) aural, (RW) reading/writing, (K) kinesthetic and (MM) multimodal. Each of the five categories lists several subcategories that describe specific music teaching strategies typically used in an elementary music classroom setting. All subcategories are coded to allow for sorting during the analysis process. During the first viewing of the videos, behaviors listed on the behavior checklist were selected as they occurred. During the second viewing of the videos, the behaviors from the checklist were recorded into the digital recording software as they occurred. Similar to a stopwatch, the digital recording software recorded and calculated the percent of time spent each particular teaching behavior. The duration recording software used in this study is an application purchased from Apple's App Store called *Duration, An ABA Duration Recording App*. It was used with an iPad. Christopher Mays (2011) created the application.

Observations. Observations provide context and details about specific behaviors of participants (Merriam, 1998). In this study, observations provided the data needed for analysis. Due to full-time teaching obligations of the researcher, observations were recorded on video, recording the teachers' instructional strategies during the two-week treatment period. Video data were coded using two methods of systematic observation. A behavior

checklist that was designed by the researcher was used first. Then, a duration recording software was used to calculate the percentage of time spent on a particular strategy or strategies.

Piloting the Observation Protocol. I designed an observation checklist to be used in the current study. In order to verify the validity of the instrument, I tested the measure before using it for data collection. Piloting an instrument before starting data collection allows the researcher to get feedback from others on the construction of the instrument. This type of feedback is important for several reasons. It ensures that the instrument makes sense to the participants, helps the researcher construct a more concise data set and most importantly allows the research to construct a reliable and valid instrument (Creswell, 2008). In order to test the reliability and validity of the observation checklist, an undergraduate pre-service teacher and another research assistant were enlisted to observe and offer feedback on the observation protocol instrument. Inter-rater reliability was calculated between two observers using 25% of the data for one teacher according to the formula $\frac{\text{agreements}}{\text{agreements} + \text{disagreements}}$. The reliability was .56. We tested the protocol with two teachers and found that a frequency count was not the most effective method to collect the data. Some of the behaviors lasted for a very long time and others passed by very quickly. Recording the frequency of the behavior did not provide the most concise and accurate data needed to answer the research questions. We revised the protocol and combined a behavior checklist with duration recording software. These two methods of systematic observation allowed us to keep track of the percentage of times a specific behavior occurred. After testing the protocol with two teachers, a third teacher was added to the tests. The subcategories were then revised after similar behaviors were

observed. Behaviors listed in each of the categories and subcategories were entered into duration recording software.

Summary

In this study, I sought to determine whether teachers did or did not tend to use their learning styles as their teaching preferences in the elementary music classroom. Research questions were addressed by observing two groups of teachers during a treatment period; one was made aware of their learning styles and one acted as the control group. Research sites and teachers were diverse in order to make a valid comparison. The main objective of the lesson was to teach fourth graders to independently sing the American folk song, *Simple Gifts*. Observations were recorded on a behavior checklist and duration recording software in order to identify specific strategies used by participants. It was determined by the Institutional Review Board that this study was exempt from review. (See Appendix F)

CHAPTER IV ANALYSIS

This study sought to determine to what degree teachers' awareness of personal learning styles influenced their strategies to teach an American folk song and when multiple strategies were used, if teachers utilized their personal styles over other styles.

Research questions were addressed by observing two groups of teachers ($N=13$) during a treatment period; one ($n= 7$) was made aware of their learning styles and one ($n= 6$) was not made aware of their learning styles. All teachers were instructed to teach one section of fourth grade general music students to sing the American folk song *Simple Gifts*. Each teacher had two weeks to teach the song.

Treatment

The teachers in Group A completed the *VARK Questionnaire* (Fleming, 2001) before teaching the lesson. This made teachers aware of their own learning styles before they began teaching the lesson. The scores from *VARK Questionnaire* are listed in Table 1.

Table 1

Group A: Teacher Learning Styles

VARK Questionnaire scores					
Teacher	Visual	Aural	Read/Write	Kinesthetic	Learning Style
1	5*	8*	5*	10*	MM-VARK
2	0	7*	2	7*	BM-AK
3	7	14*	8	13*	BM-AK
4	12*	13*	12*	15*	MM-VARK
5	0	3	6*	7*	BM-RK
6	4	0	6*	6*	BM-RK
7	1	7*	2	6*	BM-AK

*Individual learning style strengths as indicated on the questionnaire

V=Visual; A=Aural; R=Reading/Writing; K=Kinesthetic; BM=Bimodal; TM=Trimodal; MM=Multimodal

Results

In this chapter, data are presented in two sections: Group A and Group B. Tables and figures are used to summarize information, portray data visually and offer detailed explanations of the results (Creswell, 2008). The data generated from *Duration* is organized in Tables 2 and 4. Data generated from the *LSMOC* and *Duration* is corroborated to formulate conclusions about the teacher's instructional strategies in Figures 1 and 2.

Group A. Detailed descriptions of the learning styles were given to each of the participants in Group A after they received their personal learning profile. The descriptions provided specific information about the participants own learning styles describing how they personally learned best.

Data from the *VARK* indicated that all of the teachers in Group A had bimodal or multimodal learning styles. None of the teachers had a single dominant learning style, however all of the teachers possessed kinesthetic learning styles combined with other modes such as visual, aural or reading/writing. Some of the teachers in Group A possessed similar

learning profiles. Teachers 2, 3 and 7 had bimodal learning profiles with aural and kinesthetic (BM-AK) as their dominant learning styles. Teachers 1 and 4 had multimodal learning profiles with visual, aural, reading/writing and kinesthetic (MM-VARK) as their dominant learning styles. Teachers 5 and 6 had bimodal learning profiles with reading/writing and kinesthetic (BM-RK) as their dominant learning styles. This data is reflected in Table 1.

Table 2 shows the teaching strategies used by the teachers in Group A after they became aware of their individual learning styles. The numbers in Table 2 reflect the percent of time spent on each of the teaching strategies: visual, aural, reading/writing, kinesthetic and multimodal. The results were uploaded into a spreadsheet, listing the percentages of time each behavior was observed. Data indicated that Teachers 1, 3, 4, 5, 6 and 7 spent the highest percentage of time using multimodal strategies. Teacher 2 spent the highest percentage of time using aural strategies, but still spent a large amount of time using multimodal strategies.

Table 2

Group A: Teaching Strategies

Teaching strategies used by teachers who were aware of their learning style.						
Teacher	Visual	Aural	Read/Write	Kinesthetic	Multimodal	Learning Style
1	4.78	34.4	0	0	63*	MM-VARK
2	14.09	41.25*	2.82	0	38.92	BM-AK
3	15.1	28.59	0	22.02	35.3*	BM-AK
4	23.94	7.28	7.33	17.16	36.9*	MM-VARK
5	2.92	28.39	0	7.24	68.19*	BM-RK
6	13.11	24.88	3.49	3.09	54.82*	BM-RK
7	6.75	25.09	18.49	0	52.71*	BM-AK

The numbers in this table represent percentages.

*Indicates dominant strategy

Almost all of the teachers in Group A favored multimodal teaching strategies over any other strategies. Teachers who had multimodal learning styles used multimodal teaching strategies most frequently after they became aware of their personal learning styles. Data showed that teachers favored their personal learning styles when they chose strategies to teach the American folk song. The teachers in Group A taught the lesson using the strategies they preferred as learners. Table 3 shows the types of multimodal strategies used by the teachers in Group A.

Table 3
Group A: Multimodal strategies

Multimodal strategies as indicated on the LSMOC								
Teacher	MM.1 sing and move	MM.3 sing and play	MM.4 sing and read notation	MM.5 sing and read words	MM.7 move and listen	MM.8 sing and listen	MM.9 listen and read words or notation	MM.10 Other
1	4.72	0	0	0	*42.46	0	0	15.62
2	*23.67	11.35	1.44	2.46	0	0	0	0
3	*20.32	0	10.1	0	0	0	4.88	0
4	2.91	0	16.44	0	0	*17.55	0	0
5	0	28.8	0	2.6	6.67	*30.12	0	0
6	*51.17	0	0	7.41	20.29	4.3	0	26.47
7	9.84	0	*22.49	0	5.52	13.29	1.57	0

The numbers in this table represent percentages.

*Indicates the multimodal strategy that the teacher used most frequently.

In Figure 1, the Group A data generated from the *LSMOC* and *Duration* were corroborated. When the strategies listed in the subcategories were combined with the duration of time spent on each of the strategies, several themes emerged. Overall, multimodal strategies were most frequently used. The most favored strategy used by teachers in Group A was the aural strategy: “A.5- Lectures, explains, engages in class discussion, giving examples, tells stories or jokes”. Teachers also favored the multimodal

strategy: “MM.1- Instructed students to move and listen”. Few kinesthetic strategies were used alone. Kinesthetic strategies were frequently combined with strategies from other categories and qualified as multimodal strategies. Most multimodal strategies involved some form of kinesthetic learning. Teachers spent the smallest amount of time incorporating reading/writing strategies.

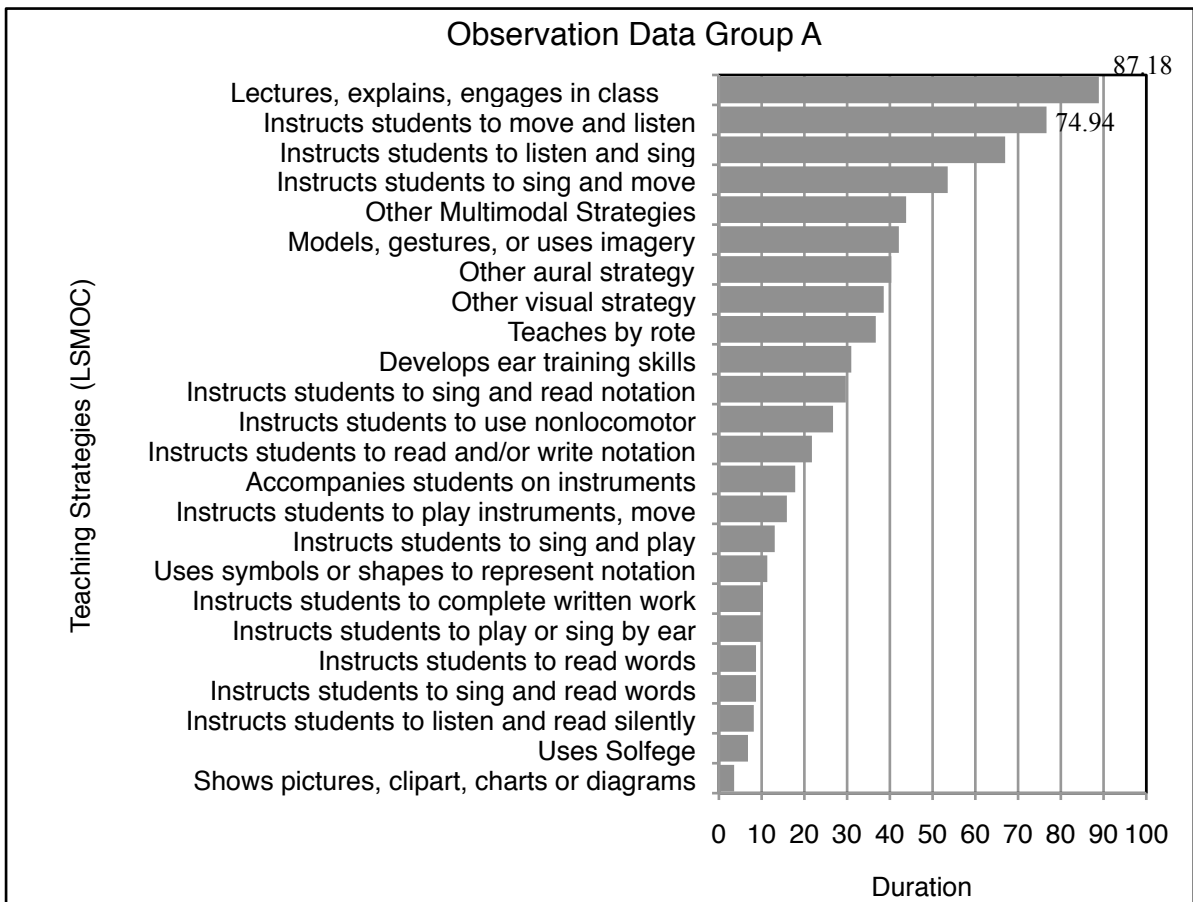


Figure 1. Group A Observation Data. This figure illustrates teaching strategies from the *Learning Styles in Music Observation Checklist* used by the teachers in Group A.

Group B. Teachers in Group B were the non-treatment participants. They started the two-week teaching period without completing the questionnaire. They taught the objective as assigned to them over the two-week period but they did not take the questionnaire at any

point during the study. Data indicates that Teachers 9, 11, 12 and 13 spent the highest percentage of time using multimodal strategies. Teacher 8 used kinesthetic strategies the most. Teacher 10 used visual strategies the most. Kinesthetic strategies were used alone, but most often they were used in combination with visual or aural strategies. This data is reflected in Table 4.

Table 4

Group B: Teaching Strategies

Teaching strategies used by teachers who were not made aware of their learning style.

Teacher	Visual	Aural	Reading/Writing	Kinesthetic	Multimodal
8	23.93	8.71	0	32.46*	31.85
9	25.67	8.59	7.94	0	39.35*
10	37.99*	0	27.35	0	31.16
11	7.66	27.92	0	0	65.5*
12	16.37	31.56	0	0	33.56*
13	14.47	10.18	3.1	0	70.18*

The numbers in this table represent percentages.

*Indicates dominant strategy

In Figure 2, the data from the *LSMOC* and *Duration* were corroborated. Several themes emerged. Similar to Group A, in Group B, overall, the most frequently used teaching strategies were multimodal. Unlike Group A, the most favored strategy used by teachers in Group B was the multimodal strategy: “MM.8 Instructed students to listen and sing”. Teachers also favored the multimodal strategy: “MM.4 Sing and read notation”. Teachers in Group B spent more time using visual and reading/writing strategies than the teachers in Group A. Group B teachers spent the smallest amount of time incorporating kinesthetic strategies.

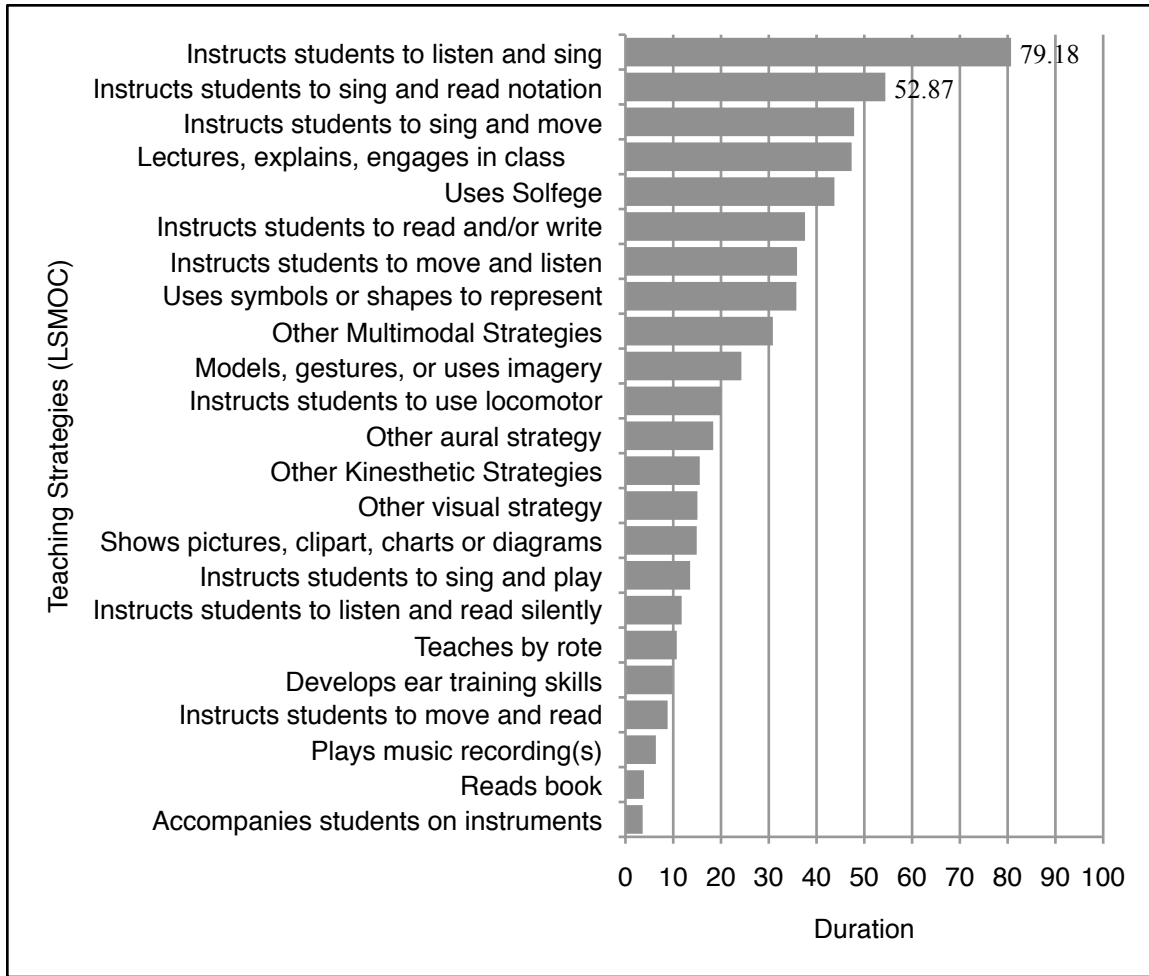


Figure 2. Group B Observation Data. This figure illustrates the teaching strategies from the *Learning Styles in Music Observation Checklist* used by the teachers in Group B.

Summary

Teachers in Group A favored teaching strategies that matched their own personal learning styles. Teachers who possessed bimodal or multimodal learning styles used a high percentage of bimodal and multimodal strategies when they taught. Most teachers, whether they were aware or not aware of their learning styles, engaged students by using multimodal strategies. Teachers incorporated multiple strategies in order to engage the diverse group of students they taught. Most of the time, kinesthetic strategies were combined with other modes of learning, but they were seldom used alone.

CHAPTER V CONCLUSIONS

The problem of this study was to determine whether teachers' awareness of their own learning styles influenced their choice of strategies to teach an American folk song. Data was gathered from observations conducted during a treatment period. The research sites were elementary general music classrooms where students received general music instruction. The sample ($N=13$) included practicing elementary general music teachers. Data was collected during a two-week treatment period. Teachers in Group A completed Fleming's *VARK* (2001) before teaching the lesson. Teachers in Group B did not complete the *VARK*, but they taught the same lesson as Group A. Teachers were observed during a two-week treatment period in which both teachers taught the same objectives.

Data indicated that teachers favored teaching strategies that matched their own personal learning styles. The teachers in Group A were sensitized to their personal learning style by completing the *VARK*. Six out of seven teachers used their dominant learning style as their dominant teaching style. Teachers favored their personal learning styles over other styles after they became aware of their personal learning styles. Teachers in both Group A and B utilized multimodal strategies most frequently. The teachers in Group B spent more time using visual and reading/writing strategies than the teachers in Group A. Teachers in Group B spent the least amount of time incorporating kinesthetic strategies.

Teachers who possessed bimodal or multimodal styles on the *VARK* used a high percentage of bimodal and multimodal strategies when they taught. Most teachers, whether they were aware or not aware of their learning styles, engaged students with multimodal strategies. Teachers incorporated multiple strategies in order to engage the diverse group of students they taught. Most of the teachers who were aware of their learning style used their dominant learning style as their dominant teaching style. All of the teachers in the study used multimodal strategies when teaching the lesson.

Implications for practice

The current study suggests that most teachers choose to teach using strategies they prefer as learners. Teachers should implement multiple strategies when choosing strategies to teach students. Teachers have students that are different from the students they had twenty years ago. No two students are alike. They all come with unique learning needs and learning styles. It is essential that teachers reflect on their practice and change their strategies in order to engage the diverse students in today's classroom. Related literature suggests that it is most effective to engage multiple learning approaches instead of trying to match specific approaches with specific learning styles (Loo, 2004). Teachers who use a variety of learning approaches are able to engage more learning styles (Bauer, 2001; Gumm, 2003; Loo, 2004).

As a full time practicing elementary music educator, I often find myself teaching my objectives the same way each year. I wonder if the teaching strategies I use are appropriate for the diverse group of learners that I teach each day. Am I engaging the students who need visual cues? Am I implementing multimodal teaching strategies? Do I make efforts to meet the needs of my students by reflecting upon my own teaching practice? These are the

questions that brought the inspiration to conduct the current study. I investigated how teacher's awareness of their personal learning styles influenced their strategies in teaching an American folk song and explored whether teachers do or do not tend to use their learning styles as their teaching preferences in the elementary music classroom. I developed a content focused, learning style centered behavior checklist that measured the strategies teachers used to teach an American folk song.

When teachers are observed, they are provided with suggestions for improvement from another person. This person is usually an administrator. Often administrators without a musical background observe of music educators. The same generic observation checklists are used for the math, science, art, physical education and music teachers. Many administrators do not know where to begin when evaluating music educators. If administrators would use content focused observation checklists instead of generic checklists that do not accurately measure music educator's ability to engage learners, then teachers would have more informative data that would allow them to truly reflect upon their practice and make necessary changes to their teaching. The *LSMOC* is a content focused observation checklist that could be used by administrators who are hoping to offer suggestions to music educators.

Implications for Future Research

The current study could be replicated in a variety of educational settings such as the pre-school music classroom, the secondary music classroom, the university music classroom or any other educational setting where music education is administered. The *LSMOC* could be adjusted to fit the observational needs of the researcher investigating younger or older students.

The *LSMOC* could be revised and combined with the duration recording software. If the technological capabilities of *Duration* were combined with the music technicalities of the *LSMOC*, the observation data would generate one spreadsheet. This spreadsheet would provide the researcher with one document instead of two during the data analysis process. This would allow the researcher to spend less time on data entry and more time on synthesis of themes that emerge from the data.

**Appendix A
Informed Consent Form**

**AN EXPLORATORY STUDY ON LEARNING STYLES
IN THE ELEMENTARY MUSIC CLASSROOM**

Dear Participating Teacher,

The following information is provided for you as you decide if you do or do not want to participate in this study. Participating in this study is completely voluntary. Even if you decide to participate now, you can change your mind and stop at any time.

The purpose of this study is to investigate learning styles in the elementary music classroom. You will be given a fourth grade general music lesson to teach over the course of two weeks. You and your selected fourth graders will be observed (by video record) during a two-week treatment period. You may be asked to complete a short questionnaire.

IMPORTANT: You may begin the two-week teaching period anytime between now and October 19. Please return this packet to me with the videos you recorded by October 19.

Please feel free to ask questions at any time during the course of the study. I look forward to share the results of the study with you after the study is complete. Your name and your school's name will NOT be used in the research document.

The University of Michigan Institutional Review Board Health Sciences and Behavioral Sciences has determined that this study is exempt from IRB oversight.

By signing below, you understand the purposes and procedures of this study and your involvement with the study.

I agree to participate in this study.

Signature

Date

Thank you so much for your help!

Angela Biedenbender
Graduate Student in Music Education, University of Michigan
Music Teacher, Detroit Country Day School
Email: angelabiedenbender@gmail.com
(734) 904-9570

**Appendix B
Special Instructions for Group A**

INSTRUCTIONS

1. QUESTIONNAIRE

BEFORE you start the lesson plan, please take 10 minutes at fill out the *VARK Questionnaire*. Find out your VARK learning style score. (see attached questionnaire and VARK info)

2. SET UP THE CAMERA

Set up the video camera in the back of the room. Videotape yourself teaching one fourth grade class for two weeks when you teach this lesson. If you do not have a video camera or tripod, please contact me and I will get one you can borrow.

3. THE LESSON

OBJECTIVE: Pitch & Rhythm

NAfME National Content Standard 1:

Singing alone, and with others, a varied repertoire of music.

NAfME Achievement Standard 1a: Grades K-4

Students sing independently on pitch and in rhythm, with appropriate timbre, diction, and posture, and maintain a steady tempo.

GRADE LEVEL: 4th Grade

MATERIALS: Video camera, *Simple Gifts* sheet music and any other materials of your choosing that will help you teach the song.

INSTRUCTIONS:

Teach the song *Simple Gifts* (see attached sheet music) to one section of fourth grade students over the course of two weeks. Video record yourself teaching the lesson each time you see the class during the two week teaching period.

4. SEND IT BACK

Please send this packet and the videos by June 8, 2012.

Scan and email me the packet: angelabiedenbender@gmail.com

OR

Send me the hard copy to my home address:

Angela Biedenbender
3045 Whisperwood Dr. #356
Ann Arbor, MI
48105

Appendix C
Special Instructions for Group B

INSTRUCTIONS

1. SET UP THE CAMERA

Set up the video camera in the back of the room. Videotape yourself teaching one fourth grade class for two weeks when you teach this lesson. If you do not have a video camera or tripod, please contact me and I will get one you can borrow.

2. THE LESSON

OBJECTIVE: Pitch & Rhythm

NAfME National Content Standard 1:

Singing alone, and with others, a varied repertoire of music.

NAfME Achievement Standard 1a: Grades K-4

Students sing independently on pitch and in rhythm, with appropriate timbre, diction, and posture, and maintain a steady tempo.

GRADE LEVEL: 4th Grade

MATERIALS: Video camera, *Simple Gifts* sheet music and any other materials of your choosing that will help you teach the song.

INSTRUCTIONS:

Teach the song *Simple Gifts* (see attached sheet music) to one section of fourth grade students over the course of two weeks. Video record yourself teaching the lesson each time you see the class during the two week teaching period.

3. SEND IT BACK

Please send this packet and the videos by June 8, 2012.

Scan and email me the packet: angelabiedenbender@gmail.com

OR

Send me the hard copy to my home address:

Angela Biedenbender

3045 Whisperwood Dr. #356

Ann Arbor, MI

48105

Appendix D VARK Questionnaire



The VARK Questionnaire (Version 7.1)

How Do I Learn Best?

Choose the answer which best explains your preference and circle the letter(s) next to it.
Please circle more than one if a single answer does not match your perception.
 Leave blank any question that does not apply.

1. You are helping someone who wants to go to your airport, the center of town or railway station. You would:
 - a. go with her.
 - b. tell her the directions.
 - c. write down the directions.
 - d. draw, or give her a map.

2. You are not sure whether a word should be spelled 'dependent' or 'dependant'. You would:
 - a. see the words in your mind and choose by the way they look.
 - b. think about how each word sounds and choose one.
 - c. find it online or in a dictionary.
 - d. write both words on paper and choose one.

3. You are planning a vacation for a group. You want some feedback from them about the plan. You would:
 - a. describe some of the highlights.
 - b. use a map or website to show them the places.
 - c. give them a copy of the printed itinerary.
 - d. phone, text or email them.

4. You are going to cook something as a special treat for your family. You would:
 - a. cook something you know without the need for instructions.
 - b. ask friends for suggestions.
 - c. look through the cookbook for ideas from the pictures.
 - d. use a cookbook where you know there is a good recipe.

5. A group of tourists want to learn about the parks or wildlife reserves in your area. You would:
 - a. talk about, or arrange a talk for them about parks or wildlife reserves.
 - b. show them internet pictures, photographs or picture books.
 - c. take them to a park or wildlife reserve and walk with them.
 - d. give them a book or pamphlets about the parks or wildlife reserves.

6. You are about to purchase a digital camera or mobile phone. Other than price, what would most influence your decision?
 - a. Trying or testing it.
 - b. Reading the details about its features.
 - c. It is a modern design and looks good.
 - d. The salesperson telling me about its features.

7. Remember a time when you learned how to do something new. Try to avoid choosing a physical skill, eg. riding a bike. You learned best by:
 - a. watching a demonstration.
 - b. listening to somebody explaining it and asking questions.
 - c. diagrams and charts - visual clues.
 - d. written instructions – e.g. a manual or textbook.

8. You have a problem with your heart. You would prefer that the doctor:
- gave you a something to read to explain what was wrong.
 - used a plastic model to show what was wrong.
 - described what was wrong.
 - showed you a diagram of what was wrong.
9. You want to learn a new program, skill or game on a computer. You would:
- read the written instructions that came with the program.
 - talk with people who know about the program.
 - use the controls or keyboard.
 - follow the diagrams in the book that came with it.
10. I like websites that have:
- things I can click on, shift or try.
 - interesting design and visual features.
 - interesting written descriptions, lists and explanations.
 - audio channels where I can hear music, radio programs or interviews.
11. Other than price, what would most influence your decision to buy a new non-fiction book?
- The way it looks is appealing.
 - Quickly reading parts of it.
 - A friend talks about it and recommends it.
 - It has real-life stories, experiences and examples.
12. You are using a book, CD or website to learn how to take photos with your new digital camera. You would like to have:
- a chance to ask questions and talk about the camera and its features.
 - clear written instructions with lists and bullet points about what to do.
 - diagrams showing the camera and what each part does.
 - many examples of good and poor photos and how to improve them.
13. Do you prefer a teacher or a presenter who uses:
- demonstrations, models or practical sessions.
 - question and answer, talk, group discussion, or guest speakers.
 - handouts, books, or readings.
 - diagrams, charts or graphs.
14. You have finished a competition or test and would like some feedback. You would like to have feedback:
- using examples from what you have done.
 - using a written description of your results.
 - from somebody who talks it through with you.
 - using graphs showing what you had achieved.
15. You are going to choose food at a restaurant or cafe. You would:
- choose something that you have had there before.
 - listen to the waiter or ask friends to recommend choices.
 - choose from the descriptions in the menu.
 - look at what others are eating or look at pictures of each dish.
16. You have to make an important speech at a conference or special occasion. You would:
- make diagrams or get graphs to help explain things.
 - write a few key words and practice saying your speech over and over.
 - write out your speech and learn from reading it over several times.
 - gather many examples and stories to make the talk real and practical.



The VARK Questionnaire Scoring Chart

Use the following scoring chart to find the VARK category that each of your answers corresponds to. Circle the letters that correspond to your answers

e.g. If you answered b and c for question 3, circle V and R in the question 3 row.

Question	a category	b category	c category	d category
3	K	V	R	A

Scoring Chart

Question	a category	b category	c category	d category
1	K	A	R	V
2	V	A	R	K
3	K	V	R	A
4	K	A	V	R
5	A	V	K	R
6	K	R	V	A
7	K	A	V	R
8	R	K	A	V
9	R	A	K	V
10	K	V	R	A
11	V	R	A	K
12	A	R	V	K
13	K	A	R	V
14	K	R	A	V
15	K	A	R	V
16	V	A	R	K

Calculating your scores

Count the number of each of the VARK letters you have circled to get your score for each VARK category.

Total number of **V**s circled =

Total number of **A**s circled =

Total number of **R**s circled =

Total number of **K**s circled =

Appendix E
LSMOC

x	VISUAL	Behavior Observed:
	V.1	Shows pictures, clipart, charts or diagrams
	V.2	Uses Solfege
	V.3	Models, gestures, or uses imagery
	V.4	Uses symbols or shapes to represent notation
	V.5	Other
x	AURAL	Behavior Observed:
	A.1	Teaches by rote
	A.2	Plays music recording(s)
	A.3	Instructs students to play or sing by ear
	A.4	Develops ear training skills
	A.5	Lectures, explains, engages in class discussion, gives examples, tells stories or jokes
	A.6	Accompanies students on instrument(s)
	A.7	Other
x	READ/WRITE	Behavior Observed:
	RW.1	read and/or write notation
	RW.2	complete written work
	RW.3	Makes lists
	RW.4	Reads and/or writes definition(s)
	RW.5	Reads book
	RW.6	Reads words (lyrics)
	RW.7	read words (lyrics)
	RW.8	Other
x	KINESTHETIC	Behavior Observed:
	K.1	use locomotor movement
	K.2	use nonlocomotor movement
	K.3	play instruments, move scarves, toss objects
	K.4	Uses Curwen hand signs
	K.5	use Curwen hand signs
	K.6	Other
x	MULTIMODAL	Behavior Observed:
	MM.1	sing and move
	MM.2	Sings and moves
	MM.3	sing and play
	MM.4	sing and read notation
	MM.5	sing and read words
	MM.6	move and read notation
	MM.7	move and listen
	MM.8	listen and sing
	MM.9	listen and read silently (words or notation)
	MM.10	Other

Appendix F IRB Notice of Exemption

Subject: Notice of Exemption for [HUM00062331]

SUBMISSION INFORMATION:

Title: An exploratory study of learning preferences in the elementary music classroom

Full Study Title (if applicable):

Study eResearch ID: [HUM00062331](#)

Date of this Notification from IRB: 3/22/2012

Date of IRB Exempt Determination: 3/22/2012

UM Federalwide Assurance: FWA00004969 expiring on 6/13/2014

OHRP IRB Registration Number(s): IRB00000246

IRB EXEMPTION STATUS:

The IRB HSBS has reviewed the study referenced above and determined that, as currently described, it is exempt from ongoing IRB review, per the following federal exemption category:

EXEMPTION #1 of the 45 CFR 46.101.(b):

Research conducted in established or commonly accepted educational settings, involving normal educational practices, such as (i) research on regular and special education instructional strategies, or (ii) research on the effectiveness of or the comparison among instructional techniques, curricula, or classroom management methods.

Note that the study is considered exempt as long as any changes to the use of human subjects (including their data) remain within the scope of the exemption category above. Any proposed changes that may exceed the scope of this category, or the approval conditions of any other non-IRB reviewing committees, must be submitted as an amendment through eResearch.

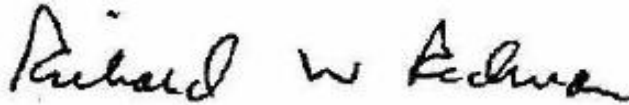
Although an exemption determination eliminates the need for ongoing IRB review and approval, you still have an obligation to understand and abide by generally accepted principles of responsible and ethical conduct of research. Examples of these principles can be found in the Belmont Report as well as in guidance from professional societies and scientific organizations.

SUBMITTING AMENDMENTS VIA eRESEARCH:

You can access the online forms for amendments in the eResearch workspace for this exempt study, referenced above.

ACCESSING EXEMPT STUDIES IN eRESEARCH:

Click the "Exempt and Not Regulated" tab in your eResearch home workspace to access this exempt study.



Richard Redman
Chair, IRB HSBS

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