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WILL LISTENING TO MUSIC IN THE LEARNING ENVIRONMENT  
ENHANCE THE PERCEPTION OF THE VISUAL ART EXPERIENCE  
FOR STUDENTS?

By

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A capstone submitted to the Faculty of the Graduate School of Winona State  
University

In partial fulfillment of the requirement for the degree of

Master of Science

Department of Education

December 2004

Anderson, Mary Gail (M.S., Education)

Will listening to music in the learning environment enhance the perception of the visual art experience for students?

Capstone directed by Dr. Thomas Sherman

### Abstract

There must be a way to inspire student creativity in the art classroom learning environment which would enable students to reach into their thoughts and emotions to produce genuine, unique art. If students are concentrating on their artwork, increased enjoyment, good behavior and a sense of pride in work accomplished should follow.

Four fourth grade classrooms were selected for this project. Students in two of the classrooms listened to their choice of music using individual cassette tape players with headphones while working on their art project in art class. Students in the two other classrooms did not listen to music during art class. After each art class, students completed surveys as to their feelings of happiness or sadness when coming to art class, how they enjoyed their art project, if they were able to concentrate on their work, if they had good behavior or not, and if they had enjoyed art class that day.

The survey results showed that the two classes who listened to music enjoyed their projects more, were able to concentrate on their work more, demonstrated about the same behavior and enjoyed their art classes more than the two classes who did not listen to music.

The significance of this study shows that to achieve a high level of enjoyment and the maximum level of creativity from most students in art class, the opportunity to listen to music should be provided.

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Will listening to music in the learning environment enhance the perception of the visual art experience for students?

## CHAPTER ONE

### Introduction

#### *Need for the Study:*

W. H. Kilpatrick made the statement that art education teachers today believe that there is creative ability in all children and that creative ability is not reserved for a gifted minority of learners. W. H. Kilpatrick made that statement in 1935, and yet today many educators would agree. Children must discover their creative ability within themselves.

Art educators strive to create an atmosphere of high expectations in learning, freedom for artistic thought, feeling and expression, success in using skills acquired, and pride in completing a project with work well done. The best educators strive for this environment for their students to learn and create to his/her potential.

Artistic expression comes from the thoughts and feelings of its author. Reactions to thoughts and feelings from individual experiences are fundamental to creating sincere art. "A good teacher creates situations that call on the child's imagination, vision, and memory, any of which may function in an experiential sense" (Children and Their Art, Gaitskell, Hurwitz, p.6).

There is a need in the art classroom to achieve the environment that takes the student to the place where he/she is free to experience inner thoughts, feelings and expression without interference. Art results from self-expression involving emotions and intellect. Students need an environment that will allow them to find their "inner self".

*Statement of the Problem:*

Time constraints and lack of concentration decrease the productivity and ingenuity of student creations and, therefore, pride in what they have accomplished. While sharing ideas and talking about each other's talents has always been acceptable and encouraged in the classroom it may have disrupted the student's individual train of thought. Some discussions get disagreeable, loud or both giving students negative attention. There is a more appropriate time for students to share ideas other than during their work time. There must be a way to inspire student creativity by reaching into their thoughts and emotions without distractions to produce genuine, unique art. Better behavior and pride in their accomplishments will follow.

An art education specialists' solution needs to work quickly within the time frame of one class period. Forty minutes per class each week is not much when considering the time required to hand out needed materials and clean up at the end of the class. A student may be just "getting into" a project when art class is over and it is time to clean up.

Time in class needs to be used efficiently for mental tasks, with adequate time left for students to reach, mentally and emotionally, the intimate place inside themselves where they are free to explore their unique visions.

The answer to the art room dilemma should not be punishment, because an atmosphere of creative freedom to move around the room to get needed materials, ask questions, make suggestions to one another, or compliment each other's work is encouraged.

*Purpose of the Study:*

Visual arts is an important part of a brain-based education. It can enhance cognition, emotional expression, perception, cultural awareness, and aesthetics; it can play a significant role in the learning process (Jensen, 2001, p.49). Art class should be an enjoyable outlet for students to free their imagination and explore the possibilities of visual art. The purpose of this study was to achieve an atmosphere where this can be accomplished.

In looking through books and articles, an anticipated prediction is that students with the privilege of listening to music during class will have higher productivity, creativity, enjoyment and pride in their work with less disciplinary problems in art.

*Statement of the Hypotheses:*

Students in classrooms with music played in the background will display better attitudes, concentrate more on assignments and display fewer behavior problems than students in classrooms without music.

*Definition of Terms:*

To clarify any ambiguity of terms, these definitions are given.

1. Enjoy: To have or experience with joy
2. Happy: Having a feeling of great joy.
3. Enhance – To improve the quality or condition of.
4. Cassette Tape Player: A battery operated device used to play audio tapes.
5. Visual Art: Visual art enables a child to develop ideas through imagery. The

Visual arts include design, art production, paper and canvas work, photography, drawing, illustration, and painting. (Jensen, 2001, p. 49)

6. Verbal Warning- The teacher or staff member asks the student to stop saying or

doing something considered to be unacceptable behavior.

7. Checks on the clipboard: This is a system for tracking bad behavior in students.

One check given for bad behavior is a warning.

The second check consequence requires a time-out for the student.

The third check consequence requires the student to lose a privilege.

The fourth check consequence requires that the student calls the parents.

The fifth check consequence requires that the student meets with the principal.

The sixth check consequence requires the student to meet with parents, teacher, and principal.

8. Self-Esteem: Undue pride in one-self (Webster's Dictionary, 1988).

9. Delight: To give great joy or pleasure (Webster's Dictionary, 1988).

10. Aesthetic: Sensitive to art and beauty (Webster's Dictionary, 1988).

*Limitations and Delimitations of the Study:*

All of the students in this study were fourth grade students at the Kenyon-Wanamingo Elementary School in the 2003-2004 school year. They all have the same art teacher with the same expectations, rules, projects and assignments. Art class is forty minutes in length, one day per week for all students, so time is limited for everyone. Of the two classes that listened to music, one came to Art from 1:20 p.m. until 2:00 p.m., and the other came from 2:05 p.m. until 2:45 p.m. The two classes that did not listen to music met at the same times but on different days. The number of students in each class, between seventeen and twenty students, is approximately the same.

The factors differ in these students. There are diverse levels of appreciation and ability in art and music for these students. Some students come from affluent homes while others are living near the poverty level; some students are needy academically, some emotionally. There are students from single parent homes, and students from two-parent homes. A significant factor in this study is the level of exposure to music and art of all kinds within the students' families.

Mrs. Kylo, one of the classroom teachers whose class of students participated in this program, regularly played background music during each school day, which was unknown to the researcher at the time of this study. It is not known if this factor made a significant change in the findings as Mrs. Kylo's class was among the groups of this study that listened to music.

Some frustration occurred for the students who listened to music during art class including the cassette tape player not working properly, or having an audio tape of poor quality. Also, some students chose audio tapes, they later realized they did not enjoy. The rule in the room was that each student could only choose one cassette tape to listen to during the class period, so they needed to choose wisely. Some students were opposed to listening to any music, and therefore were asked to wear the headphones with the volume turned low or "off" if they preferred. These negative feelings and frustrations were evident by the answers on the surveys students completed.

The researcher discovered difficulty in conversing with the students while they were wearing their headphones. To get the attention of the class, the lights were turned "on" and "off" several times.

The cost involved in this study could also be considered a limitation. The total cost for the cassette tape players, the batteries, and the audiocassettes accumulated to \$183.06. The worn out and misused cassette tape players, as well as batteries, need to be replaced making the privilege of listening to music while making art quite costly.

Students are fortunate to have forty minutes of art class per week in these times of budgetary cuts in schools, but when considering adequate time for complete classroom instruction by the teacher, preparation and set up for the project, student work, clean up, and survey completion, it was not enough. The students need more time to look deep within themselves to find their sincere, genuine feelings.

Certain projects in art would not work well with listening to music on cassette tape players, for example, making the set for a holiday program. When the project requires moving around often, or conversing with other people, the cassette tape player is more of a nuisance. Working with clay is very messy, especially when hands are slick with mud. Therefore, a cassette tape player may not be appropriate for use.

## CHAPTER TWO

### Review of Related Literature:

#### Creativity

Every human being is a unique individual with unique thoughts, emotions, physical and mental abilities and past experiences. Creativity comes from deep within one self producing something just as unique as the person from which it originates. Art education has everything to do with creativity. Each work of art has an author, the creator, who put their heart and soul into their composition. Enjoyment is not only for the author, but also for any audience who appreciates the art before them.

Creativity is a cognitive process that leads to new or improved products, performances, or paradigms. It is a quality of thought that allows an individual to generate many ideas, invent new ideas, or recombine existing ideas in a novel fashion (Gallagher & Gallagher, 1994). Creativity is the ability to go beyond the given to generate novel and interesting ideas (Sternberg, 1996) or to produce something apart from the ordinary: something remarkable and something new (Feldman, Csikszentmihalyi, & Gardner 1994). This is an important trait for achievement in all fields, however, the creative process is a trait that does not easily lend itself to measurement. Although standardized creativity tests may be able to identify students with creative capabilities such as the ability to generate many ideas or many different kinds of ideas, such measures cannot predict an individual's eventual creative achievement (Davis, 1997). The best predictor of future achievement, especially creative achievement, is past achievement (Davis, 1997; Sternberg, 1996). Therefore, it is reasonable to suggest that past performance be included within identification processes (Andrew P. Johnson, 2002, p.48-49)

The creative impulse, a highly personal urge, requires the memory of the past, the willingness to try and test new ideas and evaluation. Working with hands allows each of us to be creative in a way that can show quick and concrete results. We value what we create more than what others create. Mastery can lead to greater self-confidence. (Terr, 1999; Jensen 2001, p.87)

Art educators challenge their students to be spontaneous and natural, to abandon the familiar for the mysterious and puzzling. Evaluation of creativity is difficult to measure since art is a personal expression in visual form.

#### Theories of Music and Art

Certainly at the beginning of time when humans first roamed the earth, man heard the sounds of wind, lapping of water on the shore, footsteps, the rhythm of breathing,

throaty noises coming from man and beast. Somehow these sounds and rhythms evolved into music pleasant to the ear. At the same time, these primitive humans looked for food and shelter. They needed to be aware of their surroundings for survival. The visual images of the world around them, along with the need to communicate became the birth of music and art.

A million years ago when man's ancestors stood upright in Africa (and began the whole adventure of making) the worlds of art, music and language were perhaps one thing. The mark made, the sound uttered or sung, even the step danced, were intimately linked. The history of this unity is lost although, as far as writing goes, we can piece together the development from drawing to script. The frequent liaisons, flirtations, affairs and marriages that are attempted between word and music and between those and the visual image celebrate that imagined past of perfect union. (Tom Phillips, 1997, p. 120)

The theory that music enhances creativity has been tested and confirmed by researchers. They have found that music inspires moods, thoughts and emotions that produce new, innovative methods to generate art. Also, correlations have been found between rhythms in music that the artist heard, and the patterns the artists placed on their artwork. Students that have studied music have had higher scores on standardized creativity tests. Researchers have also found the student's artwork to have been substantially influenced by the music they heard while creating their art.

Many researchers have reported that creativity is enhanced by music. For instance, one study found that a year of music instruction significantly increased creativity (Wolf, 1979). The control class received no musical education, and the music group received 30 minutes a day for one year. Students were tested on the Purdue Perceptual-Motor Survey and the Torrance Tests of Creativity. This study suggests the value of long-term music programs versus a one-time hit-or miss approach (Jensen, 2001, p. 28).

Music and art lend themselves to several types of correlation. As an indirect correlation, a background of music is often valuable to children while they are drawing, painting, or working in three dimensions. The music appears to influence the children's visual output in a subtle fashion. The teacher may arrange direct correlations between music and art for children at any level in the elementary school. Music, with a pronounced rhythmic beat and melodic line may be employed as a basis for nonobjective patterns. "Classical" selections are usually preferable to jazz because the latter is generally too monotonous for painting. The following are well-known and well-loved examples of musical selections suitable for elementary-school children:

- J. S. Bach – "Brandenburg" Concerto No. 1  
The Wise Virgins (ballet, arr. Walton)
- Beethoven – Overtures: Leonore, No. 3  
Egmont  
The Consecration of the House
- Bizet – L'Arlesienne, Suites 1 and 2

Borodin – Prince Igor: “Polovtsian Dances”  
 Khachaturian – Gayne Ballet, Suite No. 1  
 Lalo – Symphonie Espagnole  
 Liszt – Hungarian Rhapsodies Nos. 1 to 7  
     Mephisto Waltzes  
 Rossini – Overtures: The Barber of Seville  
     William Tell  
     Semiramide  
 Von Suppe – Overtures: Light Cavalry  
     Poet and Peasant  
 (Gaitskell, Hurwitz, 1970, p. 386, 387)

It is suggested that before difficult endeavors, teachers use expressive and innovative music to stimulate ideas in students. Another study found that classical music enhances visual imagery skills (McKinney & Tims, 1995). At the elementary level, background music such as John Cage (Three Constructions), Duke Ellington (The Ellington Suites) and Berlioz (Symphonie Fantastique) is recommended. (Jensen, 2001, p.28)

Music activates and develop the areas most involved in our brains that facilitate mood, social skills, motivational development, cultural awareness, self –discipline and personal management, and aesthetic appreciation (Jensen, 2001, p. 29).

Moods are personality swings that can elicit certain visual images and sounds from an individual. It is said that if someone is angry, they may “see red”, or when sadness overcomes them, they may, “sing the blues”. In ways such as these, music and art are entwined in our souls.

#### Famous Artists Who Listened to Music While Creating Their Art

Written materials about famous artists give us an understanding of how they used music to help create their artwork. Famous artists that used background music while creating art give us insight as to what may also work for students. Maurice Sendak illustrated books that he wrote while listening to music.

A sort of graphic calisthenics done to limber the imagination, these fantasy sketches were composed as Sendak listened to various pieces of classical music. Some highly polished, others perfunctory in execution, they comprise a kind of visual free association process, through which the artist liberated both hand and head for the more personal works to come during his most productive decade: the sixties. (Lanes, 1980, p.63)

The mood of a musical composition can place a mind in a far away land where bodies lie on the beaches as the tropical breezes blow, or energize the mind and body to dance a jig. Visual artists that work to the sound of music playing, conjure up mental pictures that influence the outcome of the final product. This is not a negative aspect of listening to music while creating visual art, rather it is a way to delve deeper into the soul to find genuine thoughts and emotions.

Surely it is relevant that Sendak always creates his pictures with music in the background. “More often than not,” he says, “my instinctive choice of composer or musical form for the day has the galvanizing effect of making me conscious of my direction. I find something uncanny in the way a musical phrase, a sensuous vocal line, or a patch of Wagnerian color will clarify an entire approach or style for a new work. A favorite activity of mine is sitting in front of the record player as though possessed of drawing. Sometimes the pictures that result are merely choreographed episodes, imagined figures dancing imagined ballets. But more interesting and useful for my work are the childhood fantasies reactivated by the music and explored uninhibitedly by my pen.” (Lanes, 1980, p.120, 121).

Artists use different approaches to jump-start the flow of their creative juices.

Music is not the only way to do this, but it is quite effective as one alternative.

“My intention isn’t to prove that music is the sole enlivening force behind the creation of pictures for children,” the artist says a bit sheepishly, knowing that he is often carried away by his enthusiasms. “But music is the impulse that most stimulates my own work and I eagerly look for its presence in the work of the picture-book artist I most respect.” (Lanes, 1980, p. 121)

Since the beginning of time language, music and art have gone hand- in- hand.

The senses of hearing, seeing and speaking communicate feelings and awareness of one’s surroundings. Maurice Sendak listens to music while making art, and therefore, conveys his thoughts and feelings in his illustrations.

Looking critically at his own career, he feels that “the musical analogy is no-where more apparent than in my earliest illustrations for Ruth Krauss’s books. Her lovely and original poetry has a flexibility that allowed me the maximum space to execute my fantasy variations on a Kraussian theme, and the last page from *I’ll Be you and You Be Me* is probably the simplest expression of

my devotion to music. When this kind of drawing works, I feel like a magician because I am creating the air for a writer” (Lanes, 1980, p. 124).

Creativity comes on a deeply personal level for each individual. Researchers have studied the affects of classical music listening while art is being made, to find that it seems to have some correlation to creativity. The musical works of Mozart are thought to be especially relevant to enhance certain spatial skills (Jensen,2001, p.25)

While he worked on the illustrations for *Outside Over There*, Sendak listened exclusively to the music of Mozart. As he explains, ”I wanted only the sound of Mozart for this book. And I made my own make-believe connections: “This is Grimm country; this is the eighteenth century; Mozart died in 1791’ it’s proper the music should be only Mozart. ’Since I am running the show, I can do things any way I like” (Lanes, 1980, p. 229).

Young children are more apt to be uninhibited than adults. Children can play in a world of fantasy without feeling that their thoughts and behaviors are inappropriate or wrong. Few grown-ups have been fortunate enough to keep their childhood imaginations intact into adulthood. Maurice Sendak appears to be one of the few.

In Sendak’s fantasy pages done to pieces of music, the same themes and motifs can be found- flying and falling figures, characters eating and being eaten, windows serving as passageways to other realms, and babies wailing, nursing, devouring their mothers or being carried off. These drawings, some perfunctory in execution, others of high polish and charm, form the psychic raw material of Sendak’s imaginative world (Lanes, 1980, p. 248).

Paul Klee listened to music as he created visual art. These words were written in 1915, an early critique of Paul Klee by Theodor Daubler, admirer of Klee.

Paul Klee is an extremely distinguished musician, a fact also revealed quite clearly in his painting. (Duchting, 1997, p. 11)

Artists such as Van Gogh, Delacroix, Fantin-Latour, and Gauguin also listened to music while creating art.

Clearly, painters listened to music with ears attuned to their own pictorial needs. Given their orientation, it is surprising that they were drawn to music irrespective of the composer’s ideological affiliation (program or absolute music). This occurred despite considerable technical knowledge about music by artists. Painters who upheld a belief in music as abstract could find it embodied in the work of Berlioz, and Wagner (Van Gogh’s two favorites). Fantin – Latour’s tastes encompassed the very divergent styles of Schumann, Brahms, Berlioz, and Wagner, while Delacroix admired Mozart, Chopin, and Rossini (and detested Berlioz). Gauguin surprisingly preferred the precision of Handel (Morton, Schmunk, 2000, p. 11).

### Emotions and Music

Most people can relate to a time in their lives when a song forces them to recall the memory of an important historical or personal event. A romantic break-up, an assassination of a famous person, death of a loved one, or, at the happier end of the spectrum, new love, new birth, success, can all be reasons to conjure up songs or tunes that had been tucked far back in the recesses of the mind.

Music can assist us in creating, identifying, and using emotional states to regulate our lives. Musicians use music to communicate, and a good performance or song will communicate emotions. We understand ourselves better when we can express ourselves through alternative media like music. Music-making forces us to create, reflect, bare our souls, ponder, react, and formulate in ways we have never done before. It's a powerful language of expression whether a student is playing or listening to it (Jensen, 2001, p.32).

### Joy in the Arts

In the past, the arts have been thought of by many as being less important than other major disciplines such as math, science, or reading. At Columbia University, Judith Burton's study of more than 2,000 children found that those in an arts curriculum were far superior in creative thinking, self-concept, problem-solving, self expression, risk-taking, and cooperation than those who were not (Jensen, 2001, p.5). The arts are a valuable discipline worthy of study in the academic ranks.

The arts are unique in that they involve personal thoughts and expression, creativity, and emotion, rather than rote memorization of facts, high-level testing, or verbal skills. The arts offer the freedom to create and express without inhibition, or delight in experiencing art created by others. The arts give one a feeling of great happiness; joy..

Joy is not a term that is used much in the context of education, but if the arts are about anything, they are about how they make you feel in their presence-when you know how to read their form. The arts, when experienced in the fullness of our emotional life, are about becoming alive (Eisner, 2002, p.84,85).

In summary, research indicates that, even as far back as a million years ago, art, music, and language were “intimately linked” (Tom Phillips, 1997, p. 120). It is reported that creativity is enhanced by music, and to stimulate ideas in students, teachers should expose students to “expressive and innovative music”( McKinney & Tims, 1995).

Creativity is a cognitive process which leads individuals to generate many ideas, invent new ideas, or recombine existing ideas in a novel fashion. Music can assist us in creating, identifying and using emotional states, and therefore, by using music in this way, art educators can use this method to enable students to reach into their thoughts and emotions to produce genuine, unique art.

The creative process is a trait that does not easily lend itself to measurement. Even if creativity could be measured, no one can predict when it will be generated by an individual.

The beauty of arts is that they are both deep and wide in their benefits. They can improve nearly everything that schools need today; self-esteem, health, inclusion, motivation, attendance, grades, community involvement, and communication skills as the landmark report *Champions of Change* has pointed out (Catterall et al., 1999; Fiske, 1999; Jensen, 2001, p.116)

The definition of “self-esteem” is, “undue pride in one-self” (Webster’s Dictionary, 1988). Therefore, if creating art while listening to music results in self-esteem, a sense of pride in work accomplished should follow.

The world at large is a potential source of delight and a rich source of meaning if one views it within an aesthetic frame of reference (Eisner, 2002, p.445). The word “delight” is defined as “to give great joy or pleasure” (Webster’s Dictionary, 1988) and, “aesthetic” is defined as “sensitive to art and beauty” (Webster’s Dictionary, 1988). It is then appropriate to say that looking at all the world and everything in it can give us joy or happiness when viewing it through the “arts” of art, music, and language.

This study comes together nicely through the research cited. Music inspired student creativity in the art classroom, enabled the students to concentrate enough to reach into their thoughts and emotions to produce genuine, unique art, and resulted in good behavior and a sense of pride in work accomplished

## CHAPTER THREE

### Methods and Procedures:

#### *Overview:*

Four fourth grade classrooms were selected for this study. Each new lesson was introduced, followed by question and answer time. When the students were ready to begin working on their project, two of the classes were given the opportunity to listen to music on individual cassette tape players. The other two classes did not listen to music while working on their project. The students gave feedback after each class by completing a survey. (Appendix A) Each survey revealed what the students thought about their feelings, their thoughts about their art project, level of concentration on their work, classroom behavior and their level of enjoyment in art class that day.

This study was qualitative as observation and documented data from the students in the classroom were used to determine the merit of listening to music while creating visual art. The methods to collect data for this report were student survey, teacher checklist, and field notes(Appendix B and C).

#### *Design:*

Most students enjoyed art class. They had more freedom to create, move around the room to get needed supplies and converse with their peers while working. The atmosphere was less structured than other classes attended during the school day. This environment worked well, but this researcher felt the need for more. The goal was to achieve a high level of enjoyment and the maximum level of creativity from most students in art class. Most of all, the students needed to know the satisfaction

of producing their own genuine creation and the pride of accomplishing something remarkable and new in art class.

This action research project will be a deciding factor in answering the question, “Will listening to music in the learning environment enhance the perception of the visual art experience for students?”

*Selection of subjects:*

The 2003-2004 fourth grade at Kenyon-Wanamingo Public Schools consisted of four classrooms of students. Each classroom had a similar number of students. Two of the four classes had art class at 1:20 p.m. on different days of the week, and the other two had art class at 2:05 p.m. on different days of the week. Of the two groups that met at 1:20 p.m., one had the opportunity to listen to music in art, the two groups that met at 2:05 p.m., one had the opportunity to listen to music. This was the set up for one quarter of the scheduled school year. The study was reversed so that the classes that did not listen to music had the opportunity to listen to music the following quarter of the school year. The classes that did listen to music did not have the opportunity to listen to music.

*Validity Measures:*

The students answered a survey of specific questions about themselves at the end of each art class regarding the following areas: feelings, fun, concentration, behavior and enjoyment. Most questions were answered by “yes” or “no”. Two of the questions had multiple choice answers so that choosing one answered the question explicitly. They were asked to be very honest with their answers.

The researcher totaled the “yes”, “no”, and multiple choice answers for the questions asked and compiled the answers on the teacher checklist to get an accurate display of the student responses.

*Reliability Measures:*

This study was not reliable, although if repeated, some of the same outcomes or patterns would most likely occur. Using new students, larger or smaller class sizes, different projects, changed class times, new cassette tape players or DVD players for the same study would have unpredictable research findings.

*Field procedures:*

It was determined that fourth grade students would be used in this study because of their age and maturity, ability to take their art seriously and ability to successfully use the cassette tape players. The four classrooms could be equally divided into two groups, control and experimental.

The time frame was determined by the school year calendar which divided the school year into four equal sections of which two quarters were to be used for this study. However, the last quarter of the school year, to be used for the second part of this study, was scheduled with field trips, lyceums, standardized testing, and many other conflicts making it a poor time to conduct a study.

Students documented their answers on surveys after each art class. All surveys were collected, recorded, totaled and compiled on the teacher checklist. The information was then studied and compared for accurate results.

*Conclusion:*

The researcher of this study designed it with the question, will listening to music in the learning environment enhance the perception of the visual art experience for students? in mind. The significance of this study is that to achieve a high level of enjoyment and the maximum level of creativity from most students in art class, the opportunity to listen to music should be provided.

## CHAPTER FOUR

### Results and Discussion

The results of this study were desired and expected. The survey results showed that most students who participated in this study did reveal a perceived feeling of enjoyment, their projects were fun, and they had better concentration when given the opportunity to listen to music while working on projects in art class compared with the students who did not listen to music.

#### *Procedures:*

Data was collected from surveys completed by fourth grade students in art class and charted on the teacher checklist. The information gathered on these checklists was totaled and compiled to display the accurate results from the surveys. The two classes that listened to music were Mr. Anderson's class and Mrs. Kyлло's class. The classes were similar in size to Mrs. Nelson's class and Mrs. Rapp's class who did not listen to music during art class.

The first question asked how the students were feeling when they came to art class. The answer choices were, Happy, Sad, Somewhere-In-Between, No Answer Given. From the classes that listened to music, 75% of the students answered Happy compared to 67% from the non-music classes.(Appendix D) The last question on the survey asked the students if they enjoyed art class that day. The classes that listened to music reported 97% enjoyed art that day, compared to 81% from the classes that did not listen to music.(Appendix I) The researcher was able to compare Question 1 with Question 6 because the word, "Happy" and the word "Enjoy" have the same meaning. In comparing the two, the class that listened to music went from 75% Happy to 97% Enjoyed Art Class, an increase of 22% in joy from the beginning of class. The class that did not listen to music reported 67% were Happy when they came to class and 81% enjoyed art class that day. Their joy increased 14% (Appendix J).

The second question asked the students if their art project was fun to work on that day. 93% of the students in the classes that listened to music replied, “yes”, while only 77% of the students in the no music group responded with “yes”. (Appendix E)

Question three asked the students if they were able to concentrate in art that day. Approximately 91% of the students that listened to music said, “yes”, while only 73% of the (non music) students replied with “yes” (Appendix F).

Questions four and five asked the students if they had been warned about their behavior, and if they had received a check on the clipboard that day. Both classes of students listening to music and the students that did not listen to music answered the same. This showed that listening to music or not listening to music did not influence the behaviors of the students on those days. (Appendix G and H)

In conclusion, the classes of students that listened to music became happier or enjoyed art more during their time in art class, thought their projects were fun to work on, and were able to concentrate on their work more. Surprisingly, the behaviors were about the same in both the classes listening to music and the classes that were not.

*Variables:*

Student attitudes on the days they came to art could have been a factor in how they answered questions on the survey. They could have also copied what their seat neighbor or friends put as answers on their survey. If students were not honest with their answers, or just chose an answer without reading the question, the results may have been different. Some students had little time to complete their surveys, and consequently some answers were left blank. The answers left blank were put into a “No Answer Given” category, but if the student had actually included their answer, it may have swayed the results one way or another.

The results of this survey may have been different if the students were required to listen to a certain type of music, such as classical, instead of a variety of music styles which they could choose themselves.

*Hypothesis Testing:*

Student surveys were collected for data. This data was collected, charted and graphed.

## CHAPTER FIVE

### Summary and Conclusion

Listening to music should be an available choice for students in art class. Music enhances creativity, allowing people to invent new, original ideas, or recombine existing ideas. Teachers should use “expressive and innovative music” to arouse ideas in students.

#### *Summary of Results:*

The results of this study show that music does enhance the student’s perception of the visual art experience. The students that listened to music perceived art projects as more fun, they were able to concentrate more on their artwork, and they enjoyed art class more. The student behavior did not show change between the group that listened to music, and the group that did not.

#### *Conclusions:*

The researcher feels this study was sound and effective. The study was backed by research from notable scientists and educators. The reliability measure would change if new students, projects, or class times were dissimilar to this study.

#### *Recommendations:*

More schedule planning would be useful if this study were to be conducted again at a later date. The final quarter of the school year had too many conflicts to proceed with a study of this kind; the first two quarters of the school year would be better.

The portion of the study concerning student behavior did not show anticipated results. This may have been due to leniency on the part of the art teacher. In the next attempt at repeating this study the teacher will give more thought to strengthening the discipline in the art room. More checks on the clipboard could have been given for excessive noise and disruptions during class.

The researcher would also like to explore the possibility of using classical music to enhance creative thinking in the next study. Would classical music flavor the students' art in a unique way?

After reading the following paragraphs, the prospect of studying the relationship between the vibrations of sound waves (music) and the vibrations of light waves (color) would be very interesting to research in the classroom environment.

The spectrum, on the other hand, is clearly defined by the noted scientist, Dr Elisha Gray, in his book, *Natures Miracles*:

In the musical scale each note differs from the other in the matter of pitch; and pitch, as we have seen, is the rate of vibration per second. Colors differ in pitch sunlight to come into a dark room through a small aperture and let it fall on a white screen, there will appear a round spot of white light that is an image of the sun. If now we intercept the beam of light with a prism placed with the image downward, there will appear on the screen a band of colors, one above the other. They will appear in the following order, beginning at the bottom: Red, orange, yellow, green, blue, indigo, violet and the whole is called the solar spectrum.

The spectrum, therefore, suggests the musical scale (Belmont, 1944, p.224, 225).

The menial tasks of setting up projects, and cleaning up take a great deal of time away from the creative work of the students. A new timesaving way of performing these tasks is an area that can be studied more for the next time.

## CHAPTER SIX

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Appendix A  
Example of Student Survey

Classroom Teacher – Mr. Anderson  
Day 1 1:20 – 2:00

Name \_\_\_\_\_

Date \_\_\_\_\_

Circle your answer

1. I feel Happy Sad Somewhere in-between today.
2. My art project was fun to work on today Yes No
3. I was able to concentrate on my work today. Yes No
4. I was warned about my behavior today Yes No
5. I received a check on the clipboard today. Yes No.
6. I enjoyed art class today. Yes No

Appendix B

Example of Teacher Checklist 1

Anderson Nelson 1:20 - 2:00 / Kylo R

_____	_____	_____	_____
_____	_____	_____	_____

Music / No Music

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Yes	Yes/No	No	No Answer Given

Appendix C

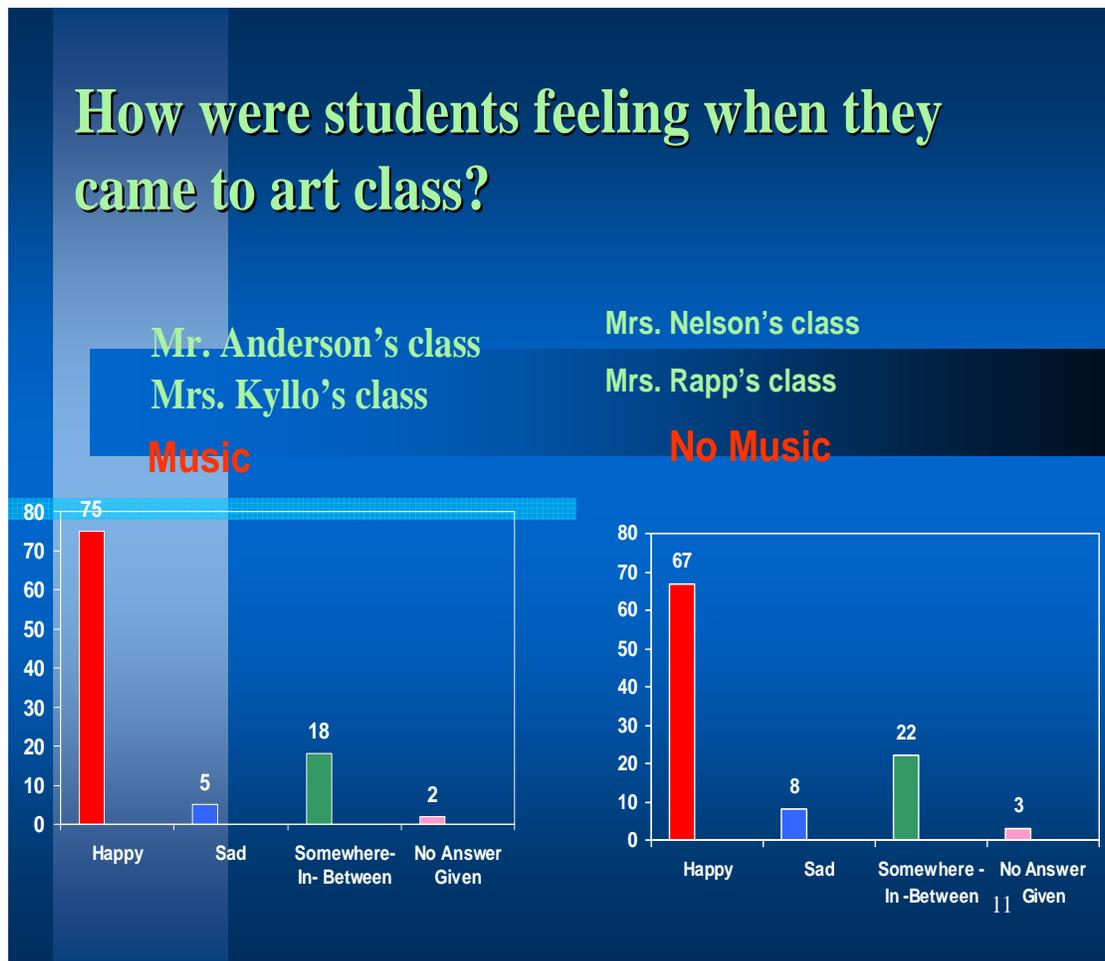
Example of Teacher Checklist 2

Anderson-Blue Kyllö-Red Nelson-Green Rapp-Orange

Week		Happy	Sad	_____	_____	
Jan. 26-30						
Mar. 1-5						
Mar. 8-12						
Mar. 15-19						
Mar. 22-26						
Totals						

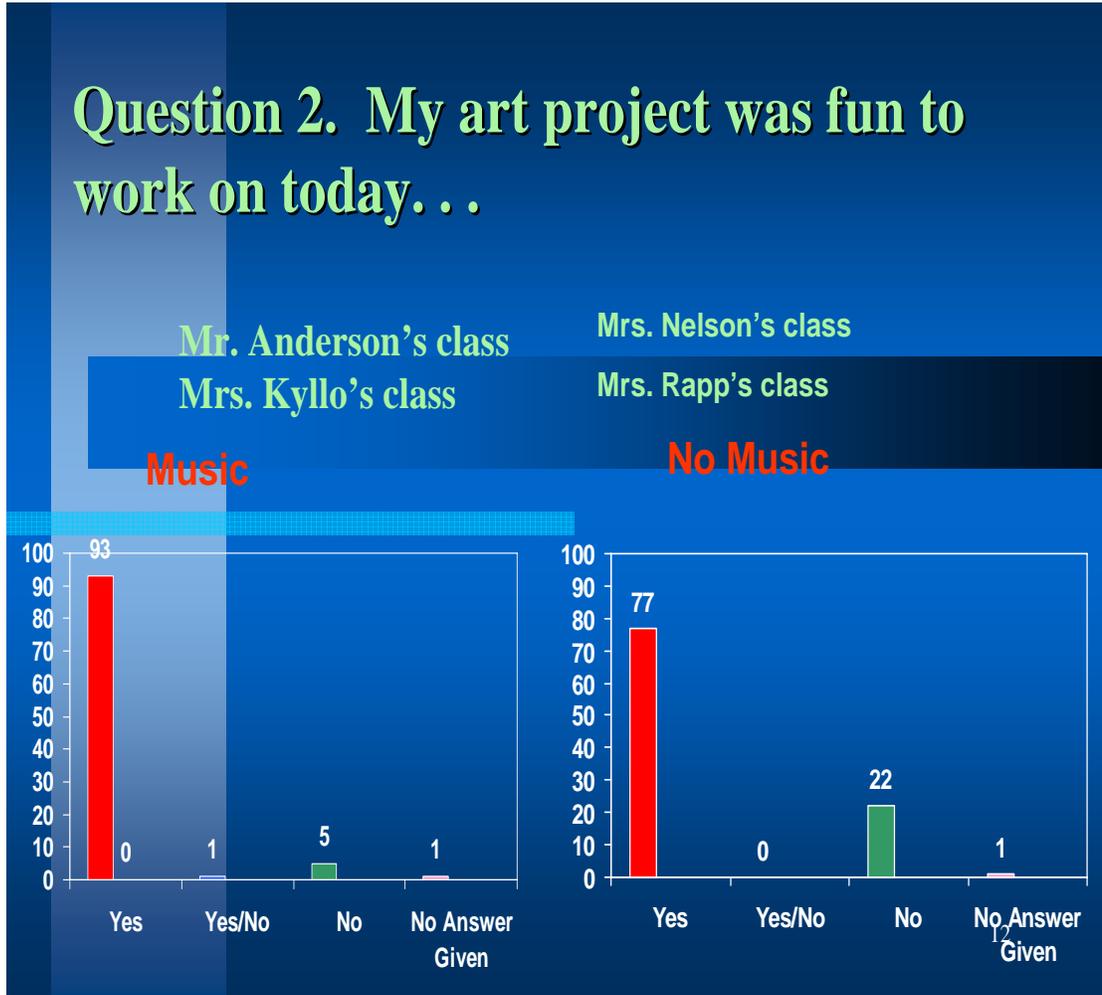
Appendix D

Graph 1



Appendix E

Graph 2



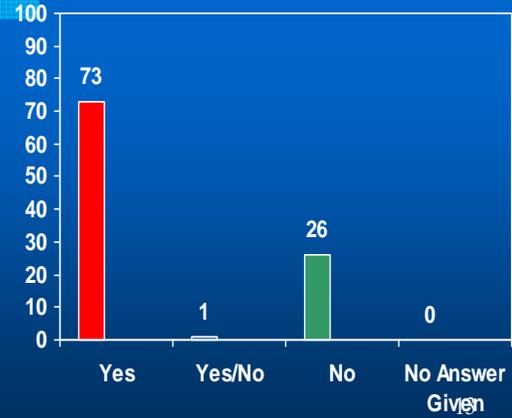
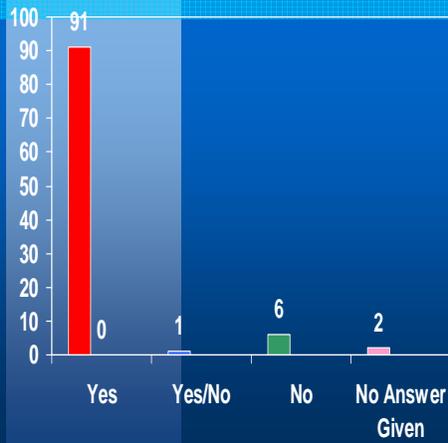
Appendix F

Graph 3

### Question 3. I was able to concentrate on my work today...

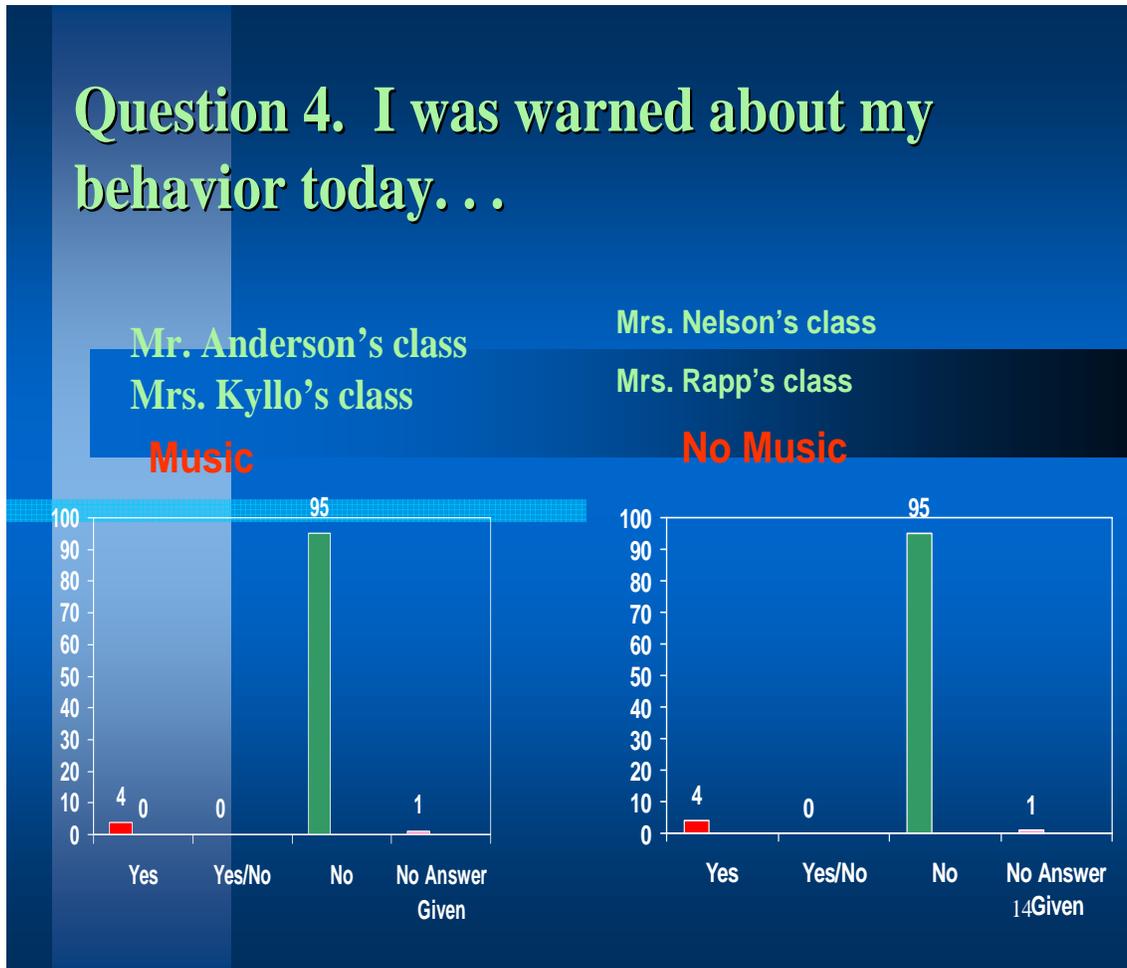
Mr. Anderson's class  
Mrs. Kylo's class  
**Music**

Mrs. Nelson's class  
Mrs. Rapp's class  
**No Music**



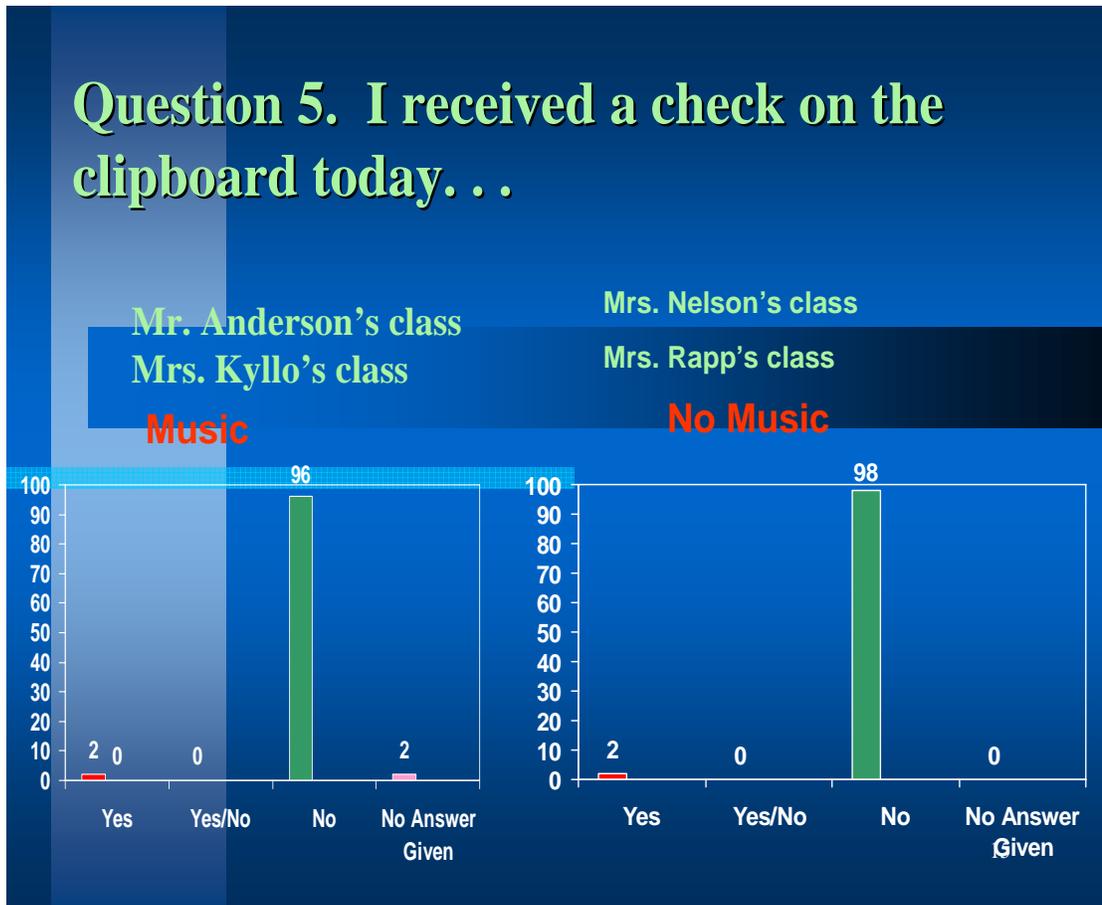
Appendix G

Graph 4



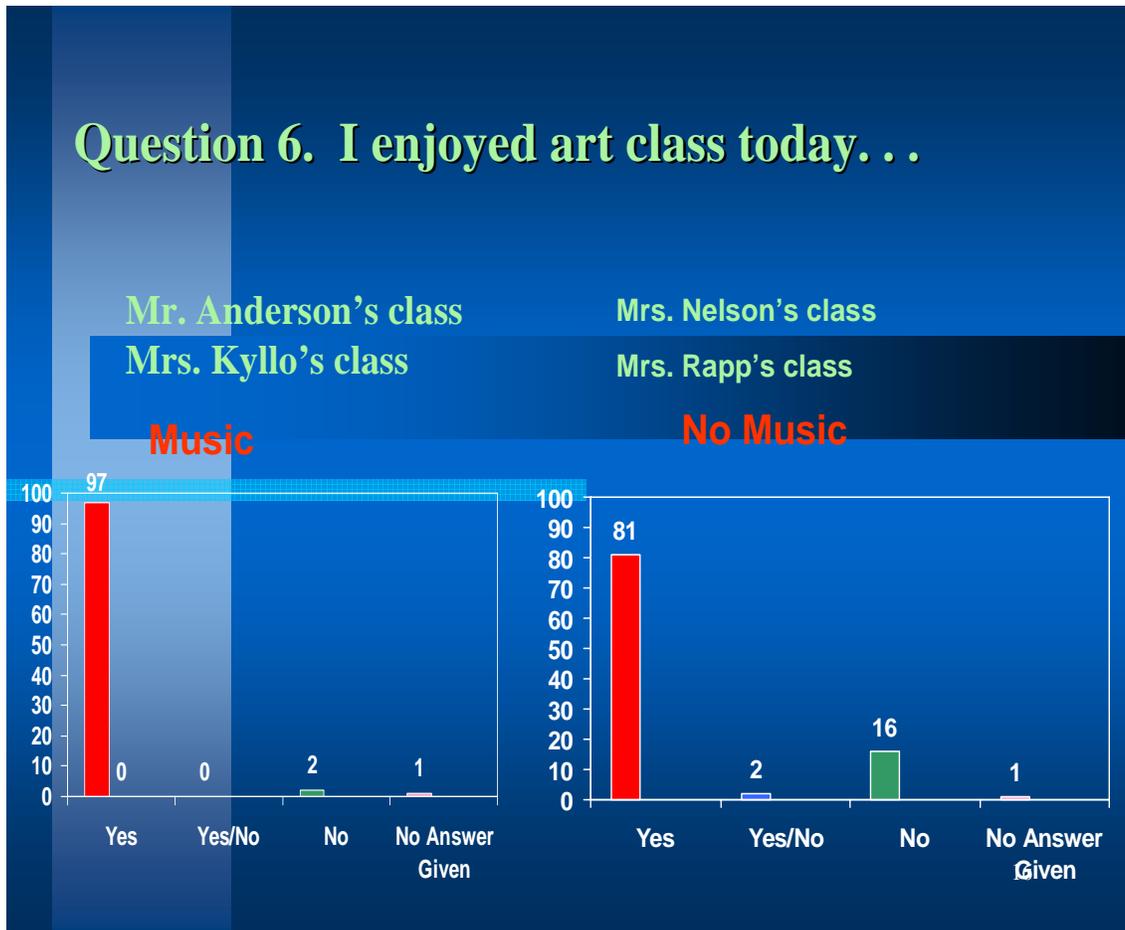
Appendix H

Graph 5



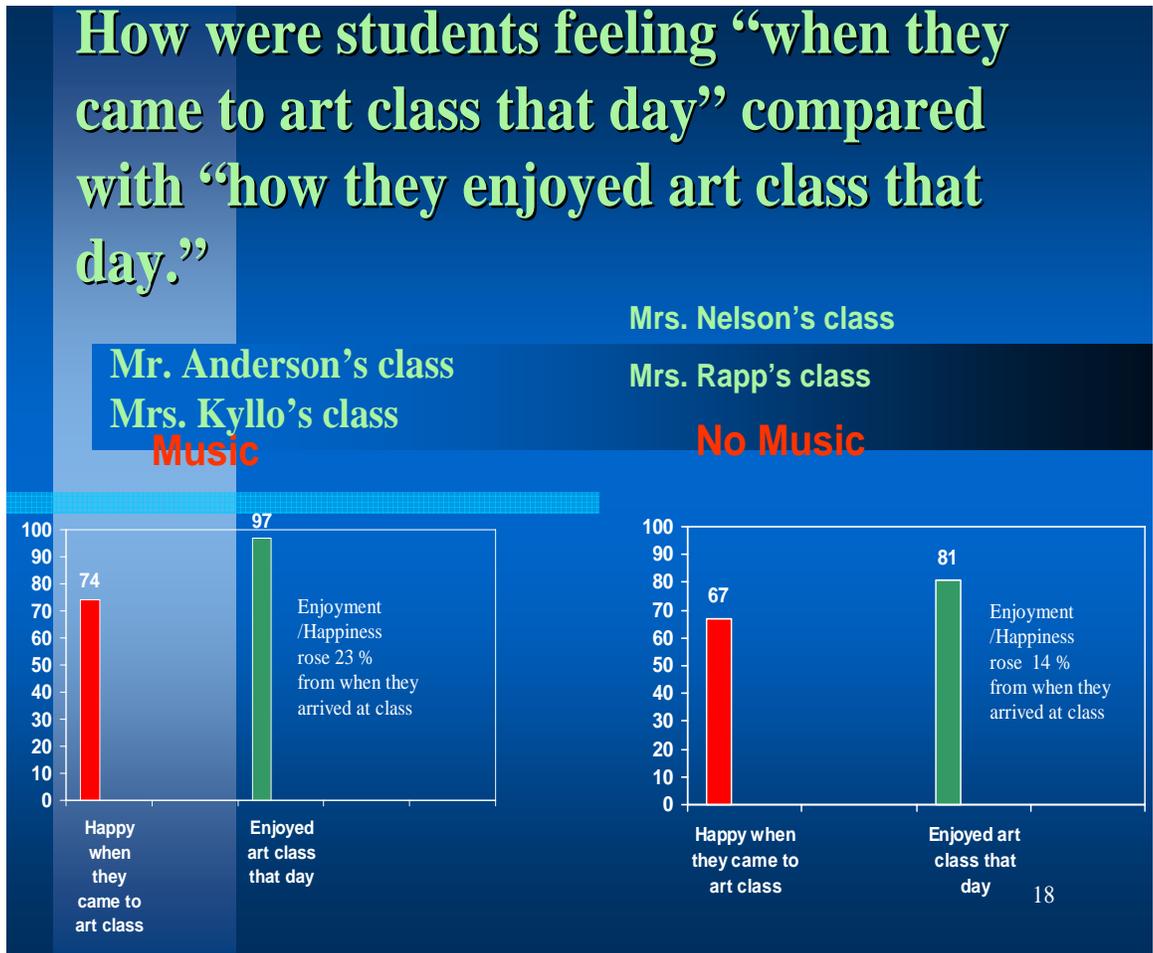
Appendix I

Graph 6



Appendix J

Graph 7















t



WILL TEACHING MUSIC COMPOSITION THROUGH AN INTEGRATED,  
TRANSFORMATIVE APPROACH OR A NONINTEGRATED, MIMETIC  
APPROACH PRODUCE A GREATER INCREASE IN STUDENT  
UNDERSTANDING OF NOTE AND REST VALUES?

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Faculty of the Graduate School of Winona State University  
in partial fulfillment of the requirements for the degree of  
Master of Science  
Department of Education

December 2004

This capstone entitled:

Will Teaching Music Composition through an Integrated, Transformative Approach  
or a Nonintegrated, Mimetic Approach Produce a Greater Increase in  
Student Understanding of Note and Rest Values?

written by Nancy Elaine Johnson

has been approved for the Winona State University Department of Education by

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\_\_\_\_\_  
Dr. Thomas Sherman, Faculty Advisor

Date \_\_\_\_\_

The final copy of the capstone has been examined by the signatories,  
and we find that both the content and the form meet acceptable presentation standards  
of scholarly work in the above mentioned discipline.

Johnson, Nancy Elaine (M.S., Education)

Will Teaching Music Composition through an Integrated, Transformative Approach or a Nonintegrated, Mimetic Approach Produce a Greater Increase in Student Understanding of Note and Rest Values?

Capstone directed by Dr. Thomas Sherman

#### Abstract

Students were not retaining a basic music vocabulary, in particular, note and rest names and values. This resulted in the students' inability to create quality musical compositions independently. The purpose of this study was to compare student understanding of note and rest values, after implementing a new strategy for teaching music composition at the third grade level, with the performance of the previous year's third grade students. All students completed tests on their knowledge of note and rest names and values, and their ability to apply this knowledge to unfamiliar music, during September and May of the corresponding school year.

Students completed two composition projects over a three-month period in six mixed gender classes varying in size from twenty-three to twenty-five students. The two projects varied in the concepts taught and the type of organizational setting.

The teacher used a nonintegrated, mimetic approach during the first year. Composition projects had strict limitations relating to the final product and were unrelated to concurrent performing and listening experiences. Instruction also included drill and rote learning.

The subsequent year, the teacher implemented an integrated, transformative approach. In this approach, the concepts the compositions were based upon were first experienced through performance and listening. Criteria for the compositions were as unrestrictive as possible, allowing for greater creativity and a problem-solving approach. Peer interaction replaced drill of note and rest names.

Results from the study showed a slightly higher post-test median and mean score for the students taught using the integrated, transformative approach. This group also had more students whose post-test scores were in the highest quartile. The differences were, however, small enough to be statistically insignificant. In contrast to this, the data showed that student post-test scores in the control group increased by a greater percentage than the scores of students in the experimental group, even when compared to students whose pre-test scores were from the same quartile.

## ACKNOWLEDGMENTS

I would like to thank my family and acknowledge the support given and the sacrifices made on my behalf to allow me to complete this Capstone project.

Thank you to Ann Bordonaro, my outside resource person, for being willing to give freely of her time and advice.

I would also like to acknowledge the Winona West II Learning Community Facilitators, Dr. Tom Sherman and Margaret Lundquist, as well as the members of the learning community, for their part in making this a challenging, inspiring, and yet, enjoyable experience.

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## CHAPTER I

### INTRODUCTION

Teaching is a rewarding, but complex vocation. Every day a myriad of decisions must be made: what concepts to teach, which materials to use and how to sequence them, how to determine students' learning styles, what teaching strategies meet students' needs, when and how to assess, and how to make adjustments when a method does not get the desired results. What guides one in making these decisions? The focus of this study was the examination of current educational research on effective teaching strategies for in-depth, conceptual learning. These research findings guided the selection of new strategies for teaching music composition. The researcher implemented and compared the newly selected strategies with past practice strategies to determine which resulted in a greater increase in student understanding of note and rest values.

#### Need for the Study

The examination of standardized test data is one common source of information for establishing current levels of effective teaching. Unfortunately, data for elementary music students does not exist at the present time. The National Assessment of Educational Progress (NAEP) administered an arts assessment to eighth graders in 1997. It was the first assessment of the arts in almost twenty years. The results were difficult to interpret and even harder to compare with past data

because of the great time differential. Frustrations with the assessment included the small sample size, the lack of music instruction within the schools for the majority of the students at the tested grade level, and an under-representation of items in the Creating and Performing categories of the test. Whatever the interpretation, the low scores on the NAEP arts assessment pointed out the lack of opportunities for eighth grade students to further their musical education, resulting in students without the “skills and knowledge essential for meaningful participation in the cultural life of the nation” (Sims, 2000, p. 45).

#### Statement of the Problem

Sims pointed out one reason for some of the disappointing results: It was improbable that the tested students were exposed to a standards-based curriculum, since the release of the *National Standards for Music Education* occurred in 1994, just three years before the NAEP assessment. This standards document, in combination with the accountability movement, was the impetus for arts education reform across the nation. Minnesota arts educators became a part of this standards-based education trend with the publication of the *Minnesota Frameworks for Arts Curriculum Strategies* in 1995. The strategies aligned with the national music standards completed by the National Committee for Standards in the Arts. While control of curriculum remains at the local school district level, the publication of state and national standards documents, and the now obsolete Minnesota graduation

standards, caused some positive changes in the scope and rigor of the music curriculum. A change in curriculum, however, does not mean an achievement of objectives. Students in Grades 2-4 in Kasson-Mantorville Independent School District 204 were not retaining a basic music vocabulary, in particular, note and rest names and an understanding of their values, and therefore were unable to independently create quality musical compositions or consistently communicate an understanding of musical concepts using appropriate music terminology. With the district music curriculum already aligned, for the most part, with the national music standards, this study pursued an investigation of teaching approaches and their relationship to current research on how children learn.

#### Statement of the Hypothesis

Many possibilities presented themselves in the writings of Benjamin Bloom, Howard Gardner, Eric Jensen, Robert Marzano and Debra Pickering, Eunice Boardman, Maud Hickey, and Jackie Wiggins. These authors stressed the importance of constructivist learning, teaching in context, integrating the study of concepts across varying types of interactions, and helping children learn to think. This capstone project focused on the use of an integrated, transformative approach as a means of developing a deeper understanding of musical concepts when teaching music composition. The hypothesis of this study was that an integrated, transformative

approach would produce a greater increase in student understanding of note and rest values than a nonintegrated, mimetic approach.

### Definition of Terms

*Authentic Assessment:* A method of evaluating student learning or understanding that is based on reliable, live-event data; in music, this often implies a demonstration, performance or composition.

*Cognition:* The process of knowing (perception, memory, judgment.)

*Deep learning/understanding:* Based on Bloom's Cognitive Taxonomy, this term implies learning that is far beyond rote naming and recall. Deep learning allows the individual to analyze information, synthesize or create new products, and evaluate and make choices based on past learning. Deep learning results in better retention rates.

*Integration:* The study of a concept across the three types of musical interactions—performing, listening, and creating.

*Mimetic Approach:* A teaching approach in which the teacher demonstrates the desired outcome and the students reproduce it as closely as possible. This approach relies on rote learning and leaves little room for individual creativity.

*Learning Modalities:* The manner in which the brain processes experiences. The type of sensory stimulation determines the mode. (Aural--sound; Kinesthetic--movement; Tactile--touch; Visual--sight.)

*Learning Style:* An individual's preferred mode of learning, based on their strengths or types of intelligence.

*Melodic Contour:* The tonal shape of the melody as determined by the pitches used.

*NAEP:* The National Assessment of Educational Progress; a U.S. government agency administered under the National Center for Education Statistics.

*Overarching themes:* The knowledge, skills, or habits of mind that are most vital and recur without regard to particular topics or concepts.

*Standards-based education:* An education based on statements of what every child should know and be able to do in each subject area.

*Taxonomy:* The science of classification; in this case, the classification of thought processes.

*Time Signature:* The numbers at the beginning of a piece of music indicating the meter (beats per measure) and the comparative value of each note or rest.

*Transformative Approach:* A teaching approach in which the teacher serves as a coach or facilitator by posing problems and creating challenges that the students solve by using their own ideas and creativity.

## Variables

### *Independent Variables*

The independent variables in this study relate to changes in teaching strategy. The researcher discontinued the drill of note names and values in the second year of the study. Open-ended composition assignments, in which the students sought out help from peers and the teacher to solve problems and complete the composition, replaced drill and rote learning. Rather than assigning compositions as a solitary activity at a convenient time in order to complete graduation standards, the teacher taught all compositions in context and integrated them across the three types of musical interaction (performing, listening, and creating) in the second year of the study. While students could ask questions about compositions during year one, the only meaningful assessment was the final grade. Many students in the control group

did not hear any other student's composition. In-process listening and peer evaluation were an integral part of the composition process in the second year of the study. The last variable changed was going from strictly individual compositions with rigid requirements in year one to the encouragement of peer input and fewer restrictions during year two. This included group composition to explain processes and begin the second assignment.

#### *Dependent Variables*

Dependent variables included the students' ability to identify note and rest names, and demonstrate an understanding of note and rest values through their ability to recall the number of beats a note or rest would receive. Students also analyzed which symbol in a group received the most beats. The final dependent variable required the students to apply their knowledge to unfamiliar music by adding the correct note or rest to incomplete measures and drawing bar lines at the points indicated by the time signature and the given music.

#### *Control Variables*

The researcher conducted the study at Kasson-Mantorville Elementary School in southeastern Minnesota during the 2002-2003 and 2003-2004 school years. All third grade students who attended the designated school for the entire year were included in the study. While different groups of students participated each year, they

were comparable in terms of socio-economic status (mainly middle income), age (third grade), number of students per classroom (23-25), and the total number of students involved each year (135 and 136). The same teacher administered the same test for the pre-test and post-test each year during September and May. All students attended three 25-minute classes over the course of a five-day cycle, with one class period providing access to computers and compositional software. The students completed two compositions each year during the months of March, April, and May. The researcher measured progress over the course of one school year.

#### *Moderator Variables*

Because no data was available to ascertain students of comparable musical aptitude, the study included all students at the third grade level each year. This factor increased the number of uncontrolled variables, possibly affecting the outcome of the study. These variables included: possible differences in the average age of the students in each group, the exact number of class periods students attended (because of absences due to assemblies, field trips, illness, or snow days), and the time of day or day of the week the class was held. Other important factors included parental support due to musical background and interests; the students' attitudes, interests, and musical backgrounds; the musical aptitude of the students; and the uneven proportion of boys to girls in the second year of the study.

### Limitations and Delimitations of the Study

The limitations of this study were:

- Sample size—Based on 271 students randomly assigned to third grade music classes during the 2002-2003 and 2003-2004 school years.
  - Age—The study included only third grade students.
  - Aptitude—No data was available to gauge student’s musical aptitude. Pre-test results showed a large difference in the base scores from the first to the second year of the study.
  - Socio-economic status—The large majority of students were from middle-income homes.
  - Limited diversity—The study included a single, large, rural school district with very limited cultural diversity.
  - Location—The school district was located in southeastern Minnesota in a community with moderately good support of arts programs.
- Teacher—One female elementary music educator with limited experience in an integrated, transformative approach conducted the study.
- Length of study—The research encompassed two school years, but composition projects were limited to a three-month period per year based on past practice. A three-month time span does not allow for full implementation of an integrated, transformative approach.
- Software—The music programs available for use in the computer lab were *Music Ace* and *Music Mastery*. While the students could experiment with sound in the *Music Ace* program, it was not capable of producing a printed copy or traditional notation icons. The *Music Mastery* program produced a good print copy, but had inferior sound quality. Although bar lines are automatically inserted by the *Music Mastery* software, student mistakes confuse the system and it is still necessary for the student to understand note and rest values to use the program successfully.
- Assessment—Test directions confused some students. Other students made careless mistakes or copied, which distorted the data.

The delimitations of this study were:

- The independent variables all related to the process of music composition. It is not possible to ascertain whether results would be consistent teaching other objectives or musical concepts.

## CHAPTER II

### REVIEW OF LITERATURE

Approaches to teaching are as varied as teachers are. As early as 1956, Benjamin Bloom published his findings on the taxonomy of cognition. His research led him to believe there are six levels of cognition, ranging from lower order recall of knowledge to higher order evaluation; that individuals are at different levels in regards to their cognitive thinking skills; and therefore, it is necessary to vary the level of questioning to encourage deeper thought processes and accommodate individual differences (Bloom, 1956). While composition and creativity are at the higher order “synthesis” level of understanding (Pasch et al., 1991, as cited in Kassner, 1998), the inclusion of a composition project is not enough to result in deeper learning. How one teaches these projects determines the level of understanding achieved and is increasingly important in light of developments in education over the last twenty years.

The move toward standards-based education and increased accountability was set in motion in 1983 with the release of the report, *A Nation at Risk*. The passing of the *Goals 2000: Educate America Act* followed in 1994 and led to the development and publication of national standards in specific subject areas, including the *National Standards for Arts Education* (Hickey, 2001). Shortly after, in 1997, the National Assessment of Educational Progress administered an arts assessment to over 6000 eighth grade students (NCES, 2003). One simple inference from the data collected

was that it was necessary to do a better job of educating all students. The introduction to the Minnesota *Frameworks for Arts Curriculum Strategies* stated this in a slightly different way:

The movement to standards . . . means new standards for teachers as well. It means we cannot continue to teach in just the same ways we always have. . . . It means greater accountability for both students and teachers, not just in terms of “doing” music, but also in terms of “*knowing* what we are doing” (Kimpton, 1993, as cited in *Frameworks*, 2003, p.3).

Maud Hickey and Peter Webster made an even blunter statement:

A major shift in thinking about what music teaching is and how it should be structured may be necessary for some. For example, the notion that creative activities will be reserved for the month of February or June because that is when it is scheduled in the curriculum will need to be changed (Hickey and Webster, 2001, pp. 22-3).

These statements were the impetus for the examination of recent brain research in regards to better teaching methodologies.

### Creative Thinking

Although creativity is a significant factor in our survival and one aspect of being human, it is a hard concept to demarcate. Varying researchers have defined it as the “the process or ability to bring something new into being” (Kettering, 2002, p. 24). This definition implies that all composing is creative. A further refinement of the definition adds that creative products must be original and aesthetically appealing. Using these interpretations, it is possible to perceive that a child or inexperienced composer of any age could complete a composition assignment that is technically

perfect, but lacking any evidence of creativity (Hickey, 2003). It is also possible to understand that the process of composing can be made almost void of creativity by imposing too many limitations and requirements that turn the creation of a song into a lesson on musical notation (Wiggins, 2001). It is during the process of composition that students make problem-solving decisions based on their current knowledge or musical schemas. Therefore, the process must include time for exploration, development of ideas, and repetition that will lead to the selection of the final ideas (Wilcox, 1994). Lisa C. Delorenzo found in her research that the level of student engagement in the creative process was dependent, in part, on their freedom of choice, and ability to discover and develop their own musical ideas (1994). The implications are that the teaching approach must nurture creativity.

### Multiple Modalities

One means of nurturing creativity is teaching that integrates the aural, visual, tactile, and kinesthetic modalities. Howard Gardner offers validation for this approach in his theory of multiple intelligences. Because students have different intelligences and learning styles it follows that it would be more effective to vary teaching approaches so that every individual would have the opportunity to develop musical understanding through his or her dominant learning style (Miller, 2002). For example, asking a child to verbalize an answer when they are a tactile learner or have not yet developed the vocabulary to describe what they are hearing is

counterproductive. It is much more effective for this type of learner to be able to tap or manipulate icons that represent the concept being taught. Moving away from a primarily verbal/aural mode also results in better participation rates and more instant opportunities for authentic assessment as children manipulate or touch materials (2002). A final positive aspect of teaching a concept through every modality is that it gives the students the time and multiple exposures required for reflection and abstraction, necessary components of developing understanding (Glaserfeld, 1995, as cited in Miller, 2002). This process is more time-consuming at the outset, but results in deeper initial learning and better long-term retention and transfer of knowledge, saving time because re-teaching is unnecessary (2002).

### Constructivism

The preceding statement is also one of the key features of a constructivist approach. While the incidence of this word in current literature would lead one to believe it is a new movement, this is not the case. The concept first appeared in the early 20<sup>th</sup> century in the writings of John Dewey, and reappeared later with the work of Vygotsky and Piaget. Charlotte Danielson explains that constructivism “holds that people’s understanding of any concept depends entirely on their mental construction of that concept—that it, their experience in deriving that concept for themselves” (Danielson, 1996, p. 23). Teachers guide this process by arranging situations in which conflicting evidence challenges the students’ beliefs (1996). The students, at

the same time, formulate their own unique understandings, based on their prior knowledge and experiences, or schemas. Teachers provide the opportunity for even deeper understanding through scaffolding--the opportunity to generate and share ideas with other students or adults. Thus, in a constructivist approach, students must “engage their minds in understanding; they must be *minds-on*” (1996, p. 25).

### Frameworks and the Dimensions of Learning

Many articles and books address which strategies or methods best accomplish the constructivist approach to learning or understanding. One example is the *Dimensions of Learning*, a comprehensive model, based on learning research, which defines the learning process. Its premise is that five types of thinking, or dimensions, are essential for successful learning. These dimensions help students: establish positive attitudes and perceptions about learning, acquire and integrate new knowledge, develop in-depth understanding, use their knowledge to perform meaningful tasks, and develop habits that will allow them to self-regulate and think creatively and critically (Marzano and Pickering, 1997). Each section of the book contains questions and lists to help teachers reflect on the practices that will best help them focus on learning. The framework for teaching developed by Charlotte Danielson would, at first glance, seem to have been written for this same purpose: to “identify those aspects of a teacher’s responsibilities that have been documented . . . as promoting improved student learning” (Danielson, 1996, p. 1). Danielson,

however, points out several key differences. The framework provides a structured opportunity for discussion and reflection on personal teaching practices. Though grounded in the constructivist approach, it does not endorse a particular teaching style because teachers must have a repertoire of strategies from which to choose in order to be effective in every situation. Which strategy works best in which situation?

Unfortunately, few research studies exist which evaluate the effectiveness of different instructional approaches in reaching desired goals because of the difficulties inherent in this type of study. Traditional standardized tests, while good for assessing recall and low-level knowledge, are unsatisfactory for assessing conceptual understanding (1996). Another difficulty lies in designing a study that controls extraneous variables: can the experimental approach be compared to another approach with a comparable group, and can a teacher be effective in any approach if they do not consider that approach educationally sound? Ultimately, the choice of a teaching approach lies solely with the teacher because only the teacher present in that room, with that particular class, on that particular day, can know all the variables of such a complex situation.

### Teaching for Understanding

All agree on one thing: it is vital to teach for understanding. *Educational Leadership* devoted an entire 1994 issue to this topic and contained details of the research completed by the members of the Teaching for Understanding Project at

Harvard Graduate School of Education. The articles define teaching for understanding as the ability to apply knowledge to real-world problems; taking the time for long-term, sustained inquiry in which students are encouraged to “actively argue, inquire, and articulate their understandings”; centering teaching around “larger, overarching themes”; and engaging students in “activities and assessments that press them to understand” (Unger, 1994, pp. 2-4). Teachers, whose goal is to teach for understanding, need to: focus on selecting topics that relate to students’ lives and are open-ended or “strange”; respect student views; assign activities that allow students to create original works; and allow for student choice (Perrone, 1994).

#### Teaching for Musical Understanding

How does this apply to the field of music? First, music composition is both a “product” and a “process. . . . It is during the process of composing that students wrestle with solving musical problems of syntax, structure, unity and variety, individuality and universality” (John Kratus, as quoted by Wilcox, 1994, p. 38). This problem-solving approach develops understanding. The teacher’s job is to prepare students by helping them develop the strategies to solve the problems. For example, learning to transpose or play songs in varying keys will later help students use sequences in a composition. Encouraging students to take their time and test their ideas through repetition helps develop their inner hearing. This can only happen if students are given sufficient time for these activities. Finally, it is important for

students to have the opportunity to share their finished compositions and reflect on the composing process through class discussion (1994). In this way, they are also learning from each other. Jackie Wiggins adds other key points in her writings: “In order for musical understanding to grow, an individual must interact directly with music through performing, listening, and creating” (Wiggins, 2001, pp. 26-7). Integrating the study of a musical idea, across all three categories of musical interaction, results in a more powerful experience and greater understanding of the concept. It is not enough to talk about or label music. Labels are meaningless to those who do not understand the underlying concept. Therefore, children must experience meter, not study time signatures; understand value and duration, rather than learn only note and rest names; or see melodic contour and hear it inside, instead of dryly reciting line and space names. The teacher begins at the level of the students’ current understanding and gently extends it by teaching songs in which the students will experience new concepts before their extraction. Once the students master the new concept, the teacher guides them to apply that knowledge to new material (2001). The application of these principles is the basis for an integrated, transformative approach.

## CHAPTER III

### METHODS AND PROCEDURES

#### Overview

Third grade students at Kasson-Mantorville Elementary School, Kasson, MN completed two composition projects during the months of March, April, and May of the 2002-2003 and 2003-2004 school years. During the first year, the nonintegrated projects had many limitations that potentially stifled creativity. The students completed the compositions without peer interaction and conceptual context provided by the teacher. The projects in the second year of the study varied in the concepts taught and the type of organizational setting. Project design included integration across the three categories of musical interaction (performing, listening, and creating) and allowance for multiple solutions, requiring students to make choices and decisions based on their current musical schemas. The implementation of these changes provided opportunities for students to develop deeper conceptual understanding.

#### Research Design

All students completed tests on their knowledge of note and rest names and values in September and May of their third grade year. Students knew that scores on the initial test did not affect grades. Each student graphed his or her initial test results

on each section of the test. The students repeated the process in May to chart individual progress over the one-year period. (See Appendix A: Student Graph.)

At the end of the second year, the researcher compared the test data of the control group and the experimental group for mode, median, and mean on each section of the test and the overall total, on both the pre-test and post-test. Gathering and recording the data in this way made it possible to compare results for final achievement level and amount of growth. (See Appendix B: Data Collection Chart.)

All students participating in the study also completed a short survey in November 2003. Items on the survey pertained to the students' perceived levels of competence on four music skills (describing and understanding music, reading music notation, singing, and composing), their musical backgrounds, and their parents' backgrounds and interest in music.

### Selection of Subjects

Because of a lack of data on musical aptitude on which to base comparable ability decisions, the study included all third grade students attending Kasson-Mantorville Elementary School for the entire year during the 2002-2003 and 2003-2004 school years. This resulted in a total of 135 subjects in the control group and 136 students in the experimental group. The school district assigned these students to six mixed gender classes varying in size from twenty-three to twenty-five students. The control group's class size mean was 24, with 49.7% girls and 50.3% boys. The

experimental group's class size mean was 23, with 41% girls and 59% boys. Twenty-one students from each group took private instrumental lessons.

### Instruments/Measuring Devices

The researcher designed the test and survey used in this study. The format of the test included four sections designed to monitor knowledge and recall of note and rest names, understanding of note and rest values as shown by the ability to analyze symbols for relative size, and ability to apply knowledge to correctly finish incomplete measures or insert bar lines. Use of this test for pre- and post-testing began in September 2000. The researcher modified directions and content in September 2002 to increase the usability of the test. The final test form included multiple choice, fill-in-the blank, circling the correct answer, drawing the correct note or rest, and adding missing bar lines. (See Appendix C: Notes & Rests Test.) The *Musical Me* survey, though not designed solely for this purpose, provided useful information on attitudes and background for data interpretation and validity examination. The survey included four sections, in addition to student name and class. For the first section, the students circled a smiling, neutral or sad face to indicate how they felt about their ability to describe and understand music, read music notation, sing, and compose music. The second, third, and fourth sections pertained to the musical background of students and parents. Participants used checkmarks and short answers to complete these categories. (See Appendix D: *Musical Me*.)

### Validity Measures

This study focused on selecting and implementing new strategies for teaching music composition. To determine the effectiveness of the new strategies, the researcher compared the test results from the pre- and post-tests of the control group to the corresponding data from the experimental group. The researcher used the amount of increase in student understanding of note and rest values over the course of one school year, both individually and as a group, as the determining factor for strategy effectiveness. While the test contained questions involving simple recall of names and values, it also included sections in which the students needed to analyze and apply knowledge to answer correctly. Use of the same test administrator allowed testing directions and grading procedures to remain constant over the two-year period.

### Reliability Measures

To increase sample size and study reliability, all third grade students attending Kasson-Mantorville Elementary for the entire school year during 2002-2003 and 2003-2004 participated in the study. The students took the same test in September and May of their third grade year while receiving the same amount of music instruction (seventy-five minutes per five-day cycle) from the same teacher in the same classroom set-up (two class periods in the music room, one in the computer lab using the same software both years). By using data from the previous year (before implementation of new strategies) as the control group, the researcher hoped to obtain data less skewed by teacher attitude. Using an entire grade level also lessened the

chances of data distortion from differences in the socioeconomic status of the participating students. The researcher limited the length of time spent on composition projects to the three-month time span used in the first year of the study, although other strategies changed throughout the year.

### Field Procedures

During the first year of the study, the teacher used familiar methods of instruction:

- Whole-group instruction
- Worksheets about notes and rests
- Flashcard drill of note and rest names (using proportional names such as whole note or half note) and values (how many beats each receives in 4/4 time)
- Rote learning of rhymes teaching rest names
- Flashcard drill of rhythms (using rhythmic syllables such as “ta” and “ti-ti”)
- Games involving note and rest recognition and rhythm reading skills
- *Music Ace 2* software (listening and music reading skills)
- Two composition assignments with specific restrictions on length, and types and numbers of notes and rests used (See Appendix E: Composition 3-1 Criteria)

Students worked on composition assignments individually with teacher assistance, but little peer input or interaction. The *Music Mastery* software used for the compositions allowed the students to select pitch and rhythm, but the projects did not have requirements or limits related to pitch. The students listened to some, but not all, of the final products via computer-generated replay or teacher performance.

During the second year of the study, some of the strategies changed. The teacher eliminated the notes and rests worksheets, and flashcard drill of names and values, and reduced the use of rhythm flashcards. The music the students listened to

and performed provided examples for learning names, values, and rhythm practice. Composition assignments became open-ended in terms of length, and types and amounts of notes and rests used. (See Appendix F: Composition Gr. 3 Criteria.) The teacher encouraged students to seek input from their peers during all stages of the process. Every student heard his or her composition performed during class, providing multiple opportunities for input and self-evaluation. These compositions tied into concepts studied during music class relating to the frequency and placement of different types of notes and rests within a song, and melodic contour. The students selected both pitch and rhythm for their compositions. Only the second composition had limits relating to pitch, based on the group composition done to begin this assignment and feedback from the first compositions.

### Conclusion

This study accomplished its goal, to compare the effectiveness of varying teaching strategies, but the number of variables made it difficult to control all measures for validity and reliability purposes. Another problem with the study was that full implementation of an integrated, transformative approach would not be limited to one aspect of the curriculum over a limited period. As such, it was a good exercise in the difficulty of designing valid research for real-world applications, but the results are questionable.

## CHAPTER IV

### RESULTS AND DISCUSSION

The researcher collected and compared data from the entire group of third grade students during the 2002-2003 and 2003-2004 school years. Maintained data included every student's scores on each of the four sections of the pre- and post-tests, as well as total scores on each test. These records allowed the researcher to compare individual students, as well as the group, for final achievement level by quartile. The researcher also analyzed the amount of growth by total score and test strand over the one-year time span.

#### Procedures

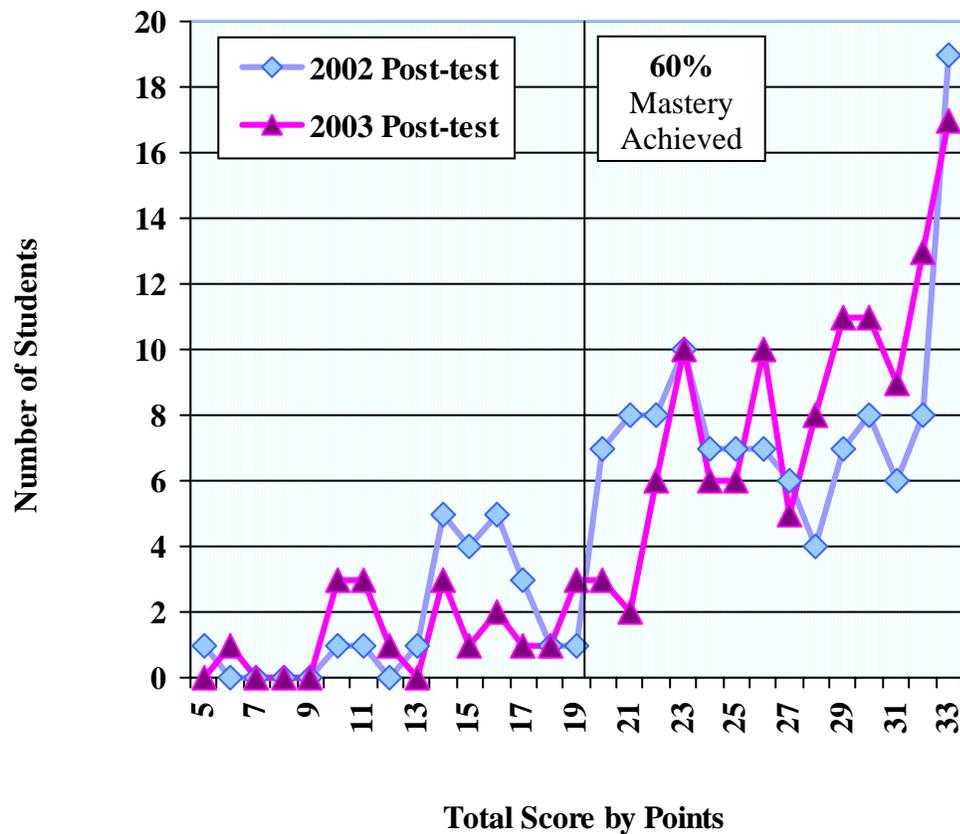
The researcher entered all data from the pre- and post-tests into Excel spreadsheets to facilitate data analysis. The first spreadsheet (Appendix B) listed pre- and post-test scores by test section and total points, with a separate column to indicate total points gained or lost. At the end of the second year, the researcher analyzed the test data of the control and experimental groups for mode, median, and mean on each section of the test and the overall total, on both the pre-test and post-test. The following table shows that the pre-test scores for students in the control group were lower than the pre-test scores for the experimental group in every category. There was a substantial difference in the mean of the pre-test scores, equaling 8.36 points or a 25.33% difference.

Table 4.1: A Comparison of Scores by Total Points

By test section and total:	Pre-test 2002	Pre-test 2003	Post-test 2002	Post-test 2003
<b>Mode:</b> Names (8 pts.)	3	6	8	8
<b>Mode:</b> Values (8)	0	5	8	7
<b>Mode:</b> Incomplete measures (8)	2	7	8	8
<b>Mode:</b> Bar lines (9)	2	8	9	9
<b>Mode:</b> <u>Total score</u> (33)	13	24	33	33
<b>Median:</b> Names (8)	3	4	6	6
<b>Median:</b> Values (8)	2	5	6	7
<b>Median:</b> Incomplete measures (8)	3	6	6	7
<b>Median:</b> Bar lines (9)	3	6	7	9
<b>Median:</b> <u>Total score</u> (33)	11	21	25	28
<b>Mean:</b> Names (8)	2.91	3.82	5.95	5.86
<b>Mean:</b> Values (8)	2.38	4.99	6.24	6.43
<b>Mean:</b> Incomplete measures (8)	3.3	5.25	6.2	6.35
<b>Mean:</b> Bar lines (9)	3.27	6.16	6.52	7.4
<b>Mean:</b> <u>Total score</u> (33)	11.86	20.22	24.91	26.04
<b>Average total gain</b> (pts.)			13.05	5.82
<b>Average total gain</b> (%)			39.55	17.64

A comparison of post-test score means shows a difference of only 1.13 points or 3.42%. This difference is small enough to be statistically insignificant, although examining the number of students above the 60% mastery level equaled 83% for the control group and 86% for the experimental group. (See Figure 4.1)

Figure 4.1 **A Comparison of Post-test Scores by Total Points Achieved**



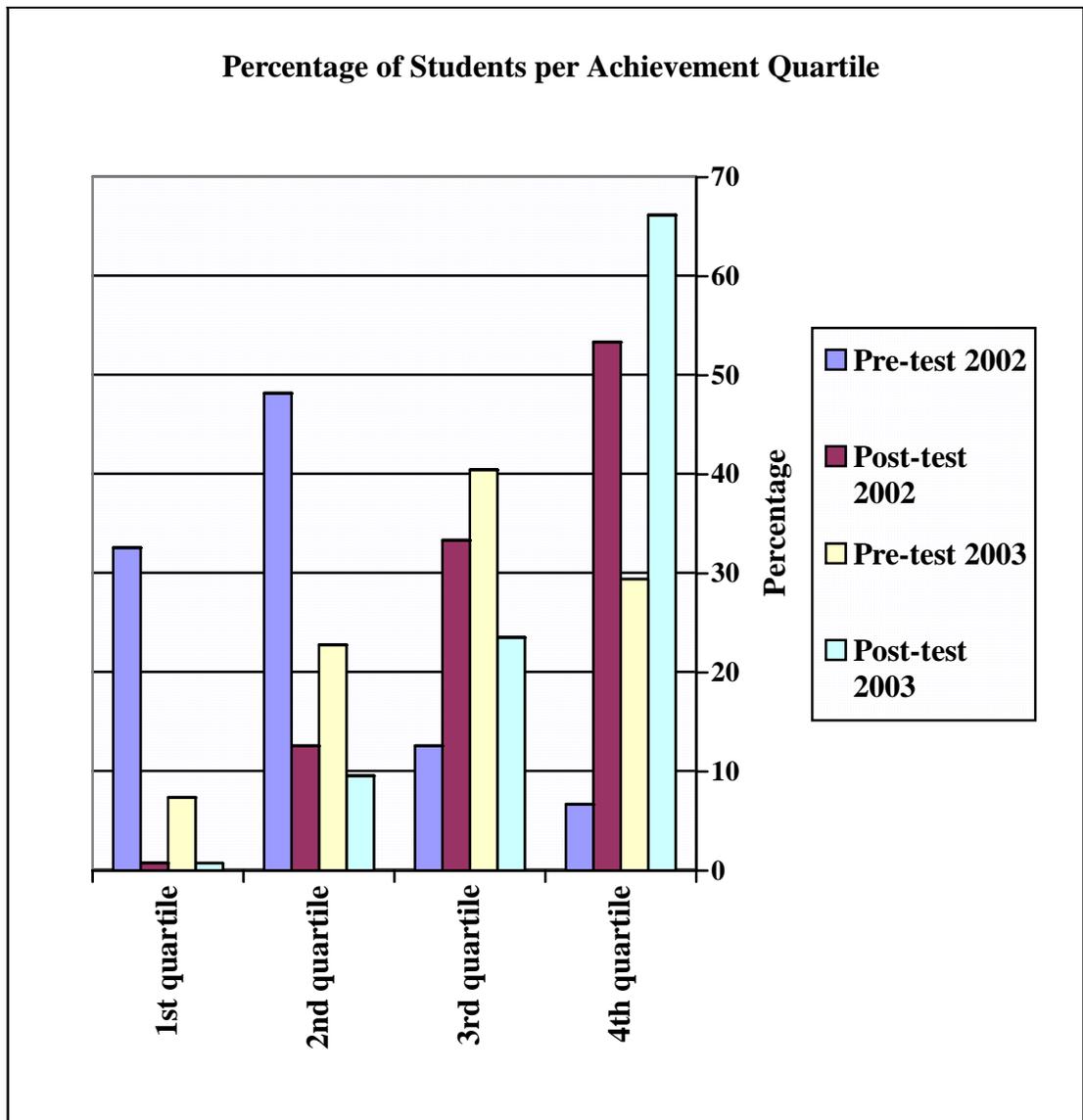
Sorting the data by total score on the pre- and post-tests and dividing into quartiles shows the same type of results. In this case, 12.85 % more students in the

experimental group achieved final scores in the fourth quartile than students from the control group. Table 4.2 and Figure 4.2 show these results.

Table 4.2 Percentages of Students per Achievement Quartile

	% of students in lowest quartile	% of students in second quartile	% of students in third quartile	% of students in highest quartile
Pre-test 2002	32.59	48.15	12.59	6.67
Post-test '02	0.74	12.59	33.33	53.33
Pre-test 2003	7.35	22.79	40.44	29.41
Post-test '03	0.74	9.56	23.53	66.18

Figure 4.2



However, if one compares the data for greater increase or average total gain, the results are much different. By rearranging the data in the Excel spreadsheets, as shown in Table 4.3, the researcher analyzed the data for gain or loss from pre- to post-test scores by test strand and total points.

Table 4.3 **Individual Score Gain or Loss by Section and Total**

<b>Student ID #</b>	<b>Strand 1 Pre-test score</b>	<b>Strand 1 Post-test score</b>	<b>Strand 1 Gain/Loss</b>	<b>Strand 2 Pre-test score</b>	<b>Strand 2 Post-test score</b>	<b>Strand 2 Gain/Loss</b>
<b>104</b>	1	8	<b>7</b>	0	7	<b>7</b>
<b>113</b>	1	1	<b>0</b>	0	4	<b>4</b>
<b>117</b>	3	2	<b>-1</b>	0	3	<b>3</b>

This made it possible to resort the data by pre-test points for each strand of the test as shown in Table 4.4, ranking students by their achievement in each quartile.

Table 4.4 **Percentage Gain/Loss for Students in the Lowest Quartile for Strand 4: Inserting Bar Lines**

<b>Student ID #</b>	<b>Strand 4 Pre-test score</b>	<b>Strand 4 Post-test score</b>	<b>Str. 4 Gain/Loss</b>	<b>Total Pre-test score</b>	<b>Total Post-test score</b>	<b>Total Points Gain/Loss</b>	<b>Total % Gain/Loss</b>
<b>28</b>	0	5	<b>5</b>	6	20	<b>14</b>	<b>42.4</b>
<b>126</b>	0	5	<b>5</b>	9	21	<b>12</b>	<b>36.4</b>

<b>32</b>	0	5	<b>5</b>	5	19	<b>14</b>	<b>42.4</b>
<b>124</b>	2	5	<b>3</b>	6	24	<b>18</b>	<b>54.5</b>
<b>98</b>	2	4	<b>2</b>	10	10	<b>0</b>	<b>0</b>
<b>68</b>	2	3	<b>1</b>	19	20	<b>1</b>	<b>3</b>

This step allowed the researcher to compute the mean gain or loss in total percentage points achieved by students in the four quartiles of each strand, as shown in Table 4.5.

Table 4.5 **Total Percentage Gain/Loss by Test Strand Quartiles**

	Quartile 1	Quartile 2	Quartile 3	Quartile 4
Strand 1: 2002	46.55	38.66	23.13	<b>-25.0</b>
Strand 1: 2003	39.43	28.28	17.44	<b>-3.75</b>
Strand 2: 2002	61.06	37.5	21.05	0
Strand 2: 2003	42.86	29.59	15.58	-0.43
Strand 3: 2002	57.24	27.5	21.55	3.57
Strand 3: 2003	48.3	25.0	10.07	-3.43
Strand 4: 2002	54.58	28.15	<b>24.07</b>	5.19
Strand 4: 2003	38.38	21.69	<b>28.41</b>	-0.41
Total Score: 2002	47.73	39.3	30.84	19.19
Total Score: 2003	30.61	24.49	19.42	6.89

Again, if comparing gain or loss statistics for students in each quartile of achievement rather than the percentage of students attaining the highest quartile, students in the control group had a greater increase in scores in all but the two categories indicated in bold in Table 4.5. Figures 4.3 – 4.6 show these results by quartile.

Figure 4.3: **Percentage of Total Gain/Loss for Students in Quartile 1**

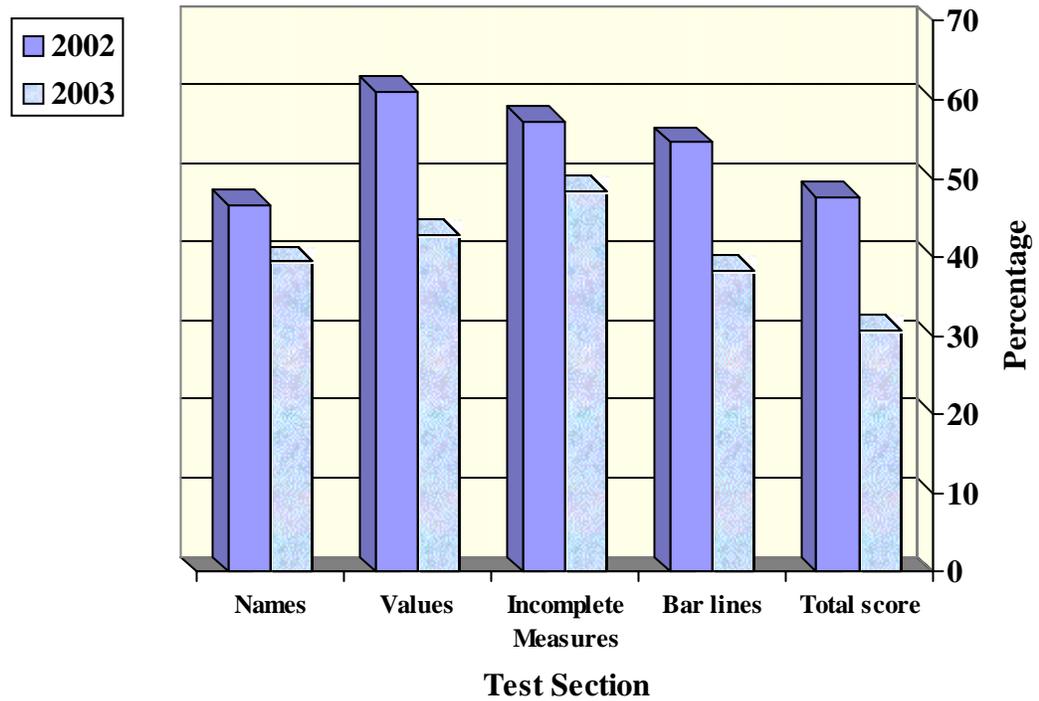


Figure 4.4: **Percentage of Total Gain/Loss for Students in Quartile 2**

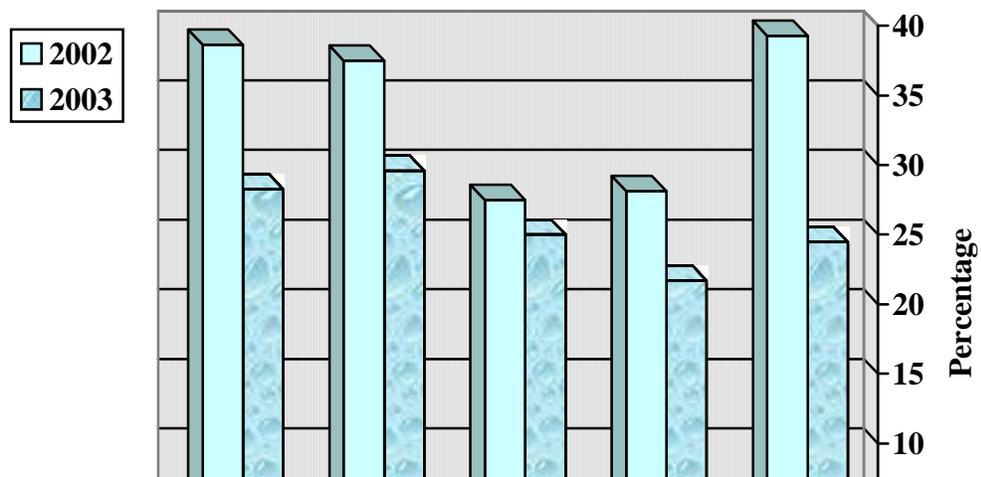


Figure 4.5: Percentage of Total Gain/Loss for Students in Quartile 3

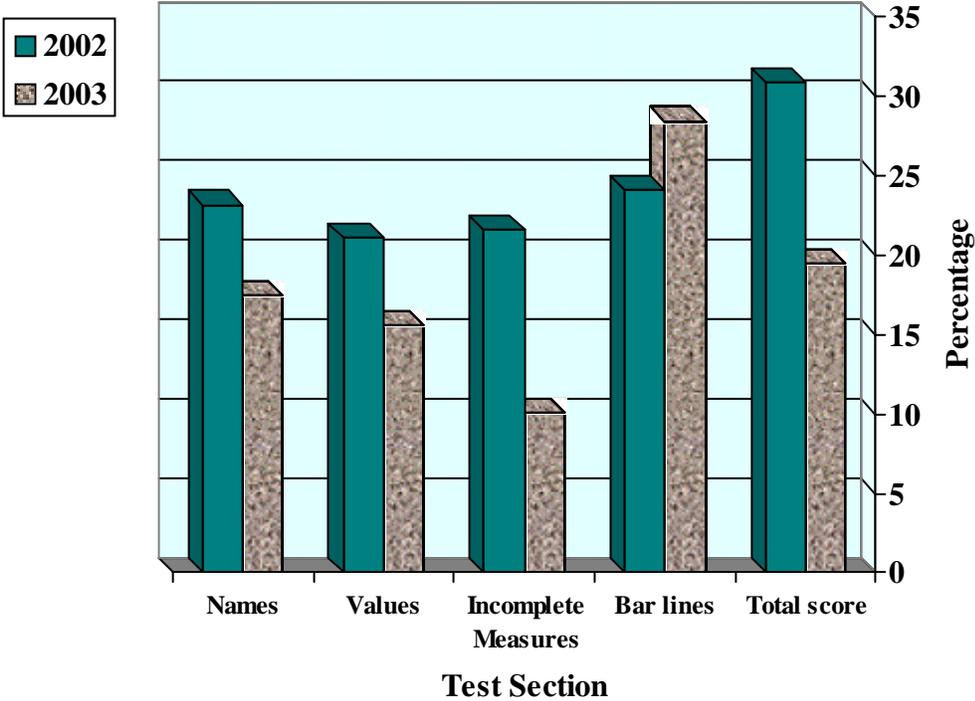
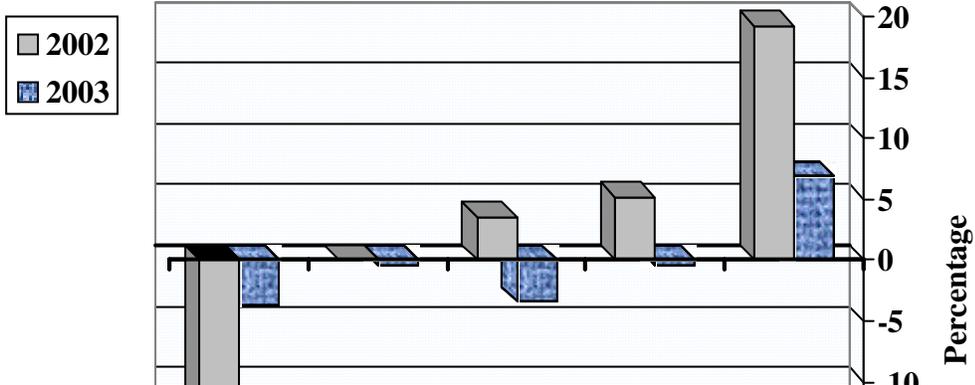


Figure 4.6: Percentage of Total Gain/Loss for Students in Quartile 4



Referring back to the data in Table 4.1 shows the control group's average increase in total score from pre- to post-test is greater by 7.23 points or 21.9%.

As a final check, the researcher compared data collected from twenty-four students in the experimental group to data from twenty-four students with similar pre-test scores in the control group. Students represented a balance of low, middle, and high pre-test scores from each quartile. Comparable pre-test scores and equality in the number of students taking private lessons were the only criterion for selection. It proved to be quite difficult to find students with comparable pre-test scores given the large differences in the number of students in each quartile from the first to the second year of the study. (See Table 4.2 and Figure 4.2.) The results of this comparison showed similar figures to the quartile comparisons shown in Table 4.5 and Figures 4.3 – 4.6. Students in the control group had greater increases in overall test scores than students in the experimental group in every quartile except the third.

There is no way to validate whether the groups were comparable in terms of musical aptitude, intelligence, socioeconomic status, attendance or other criteria. The only inference is that this analysis supports the findings shown in the examination of total score gain or loss by quartile.

### Hypothesis Testing

To test the hypothesis of the study, the researcher consulted several websites. The first, <http://davidlane.com/hyperstat>, explained the steps of hypothesis testing, including information on “ruling out chance,” the “null hypothesis,” “probability value,” “significance level” or confidence interval, and the “standard deviation.” Next, the researcher used the second website, <http://www.physics.csbsju.edu/stats/t-test.html>, to conduct *t*-tests on the data. Three tests were run, including total pre-test scores from each group, total post-test scores from each group, and total gain or loss from pre- to post-test for each group. Table 4.6 shows the results of the three *t*-tests.

Table 4.6:

***t*-Test Results**

	<b>Pre-test Scores 2002</b>	<b>Pre-test Scores 2003</b>	<b>Post-test Scores 2002</b>	<b>Post-test Scores 2003</b>	<b>Total Score Gain/Loss 2002</b>	<b>Total Score Gain/Loss 2003</b>
<b>Mean</b>	11.8	20.2	24.9	26.1	13.1	5.85
<b>Standard Deviation</b>	6.38	7.0	6.27	6.26	5.74	5.05
<b>Hi/Low</b>	29.0-	33.0-	33.0-	33.0-	27.0-	24.0-

	0.0	4.0	5.0	6.0	0.0	-6.0
<b>Median</b>	11.0	21.0	25.0	28.0	13.0	5.0
<b>Ave. Absolute Dev.-Median</b>	4.91	5.74	5.18	4.84	4.69	4.01
<b>t</b>	-10.3		-1.53		11.0	
<b>sdev</b>	6.7		6.27		5.4	
<b>Probability</b>	.0001		0.13		.0001	

These *t*-tests used a 95% confidence interval or a significance level of 0.05, a standard level used in research as the criterion for rejecting the null hypothesis. If the probability is less than or equal to this significance level, then the null hypothesis is rejected, meaning the outcome is statistically significant. If the probability is greater than the significance level then the null hypothesis is not rejected. This means that the outcome is not statistically significant and the results could be simply a matter of chance. Using these explanations, there was a statistically significant difference in the pre-test scores. What caused this difference, however, was not the subject of this study. There was also statistical significance in the amount of gain or loss between the pre- and post-tests of the control and experimental groups. This leads one to believe that the type of teaching strategy does have an effect on students' achievement. In this case, the hypothesis of the study (alternative hypothesis) would be rejected because the control group showed a greater increase in test scores than the experimental group over the course of the study. Of what consequence are the

experimental group's higher final scores? Because the probability (0.13) is greater than the significance level (0.05), the null hypothesis is not rejected. The experimental group's higher post-test scores were statistically insignificant and could be due to chance. However, this does not mean that the null hypothesis is true, that using an integrated, transformative approach for teaching music composition does not produce a greater increase in understanding. The evidence is not strong enough to reject that possibility in this case.

## CHAPTER V

### SUMMARY AND CONCLUSIONS

From the outset of this study, the researcher was aware that the process of composing music involved students in a higher level of cognition. Composition requires students to synthesize all the elements of their musical understanding to produce their song. In addition, evaluation is a natural part of the process. In listening to their own songs, as well as to their peers', the students learn to make judgments that help them decide how to improve their compositions. The goal of this study was to examine the process of teaching composition to ensure that the strategies used encouraged deeper conceptual understanding. To do this, all students involved in the study took pre- and post-tests to document growth. The researcher compared the results from the control group, before the implementation of new strategies, with results from the experimental group, taught with the new strategies.

#### Summary of Results

Using a larger sample size usually leads to results that are more reliable. This decision led to a quandary midway through the study. A comparison of the pre-test scores of the control and experimental groups showed a substantial difference. The pre-test score mean for the control group was 11.86 points, while the mean of the experimental group was 20.22, a difference of 8.36 points or 25.33%. Could the researcher show a correlation between teaching methods and level of achievement

with such an inconsistency in base scores? This problem led to the decision to record the amount of gain or loss over the course of the year rather than just the final level of achievement of each group.

This method showed an average total gain of 13.05 points (39.55%) for the control group and 5.82 points (17.64%) for the experimental group. The control group gained 7.23 points (21.9%) more than the experimental group. The researcher was still not satisfied that this was a valid comparison, as students with lower scores would naturally be able to raise their scores more than students starting with higher scores could. To reduce this possibility, the researcher divided the students into quartiles with comparable scores on the pre-tests and compared the control and experimental groups for percentage of gain or loss again. The results (from Table 4.5) showed that students' post-test scores in the control group increased by a greater percentage than the scores of the students in the experimental group, even when compared to students whose pre-test scores were from the same quartiles.

Table 5.1 **Percentage Gain or Loss in Mean Scores by Quartile**

<b>Mean of Students:</b>	<b>Quartile 1</b>	<b>Quartile 2</b>	<b>Quartile 3</b>	<b>Quartile 4</b>
<b>% Gain/Loss Total Score: 2002</b>	47.73	39.3	30.84	19.19
<b>% Gain/Loss Total Score: 2003</b>	30.61	24.49	19.42	6.89

As expected, students with the lowest pre-test scores increased their post-test scores by the highest percentage in both the control and the experimental groups.

## Conclusions

Did this study prove that the new strategies were ineffective in increasing student understanding of note and rest values? As a teacher, the higher post-test score mean of the experimental group, while statistically insignificant (1.13 points or 3.42%), cannot be totally ignored. Neither can the statistics in Table 5.2:

**Table 5.2 A Comparison of Student Achievement in the Highest Quartiles**

	<b>Control Group</b>	<b>Experimental Group</b>	<b>Difference</b>
<b>Students achieving <math>\geq 60\%</math> on the post-test</b>	83%	86%	3%
<b>Students achieving <math>\geq 75\%</math> on the post-test</b>	53.33%	66.18%	12.85%

If 12.85% more students (in this case, 17 children) can attain scores in the highest quartile of achievement without the uninspiring use of drill and rote learning, it is the conclusion of this researcher that the new strategies at least merit further research.

The data was inconclusive in proving or disproving the hypothesis.

Furthermore, unanticipated variables may have distorted the reliability of the data. Among these:

- Class time for the control group was between 8:30 – 10:10 a.m.; class time for the experimental group was between 12:50 – 2:30 p.m.—a time containing more conflicts (assemblies, early dismissal days) that may have affected the amount of time students received instruction.
- Gender proportion for the control group was 49.7% female, 50.3% male; for the experimental group the ratio changed to 41% female; 59% male. This study can only note the difference as a potential factor.
- Teacher/researcher inexperience in using integrated, transformative teaching techniques and designing research; effect unknown.

- Parental interest or support for music, as implied by the level of participation in musical activities indicated on the *Musical Me* survey, was higher for the students in the control group. Table 5.3 shows these figures.

Table 5.3 **Parent Music Participation**

	<b>Band Instrument</b>	<b>Folk Instrument</b>	<b>Piano Lessons</b>	<b>High School Choir</b>	<b>Adult Choir</b>
<b>Control Group</b>	59 %	20%	38%	42%	24%
<b>Experimental Group</b>	48%	14%	32%	42%	15%

### Recommendations

Based on the findings of this study, the researcher recommends the continuance of an integrated, transformative approach. These strategies are strongly supported by educational research and did not result in a lowering of student understanding of note and rest values, even though less time was spent doing teacher-led, lower order cognitive drills. Furthermore, by imposing fewer limitations, the teacher increased the likelihood of all students accessing their current music schemas to create compositions that met their standard of quality. The researcher informally observed greater satisfaction and sense of ownership amongst the students during composition project time in the second year of the study. Evidence of this included willingness to begin work and dismay at having to stop; begging to have their song selected for feedback, excitement in hearing their own work, fewer instances of apathy, and higher finished product quality than in past years.

Recommendations for further study include varying the testing device to eliminate artificially higher scores from test familiarity; improving test directions to reduce the number of mistakes occurring because of student confusion; and an updating of student responses on the *Musical Me* survey. When students completed this survey in November 2003, they rated their ability to compose as their lowest musical skill. (See Appendix D.) This was the case for both the control group (2.1 on a 3-point scale) and the experimental group (2.2). It is the hope of the researcher that their confidence has improved, along with their enjoyment, having experienced a transformative approach.

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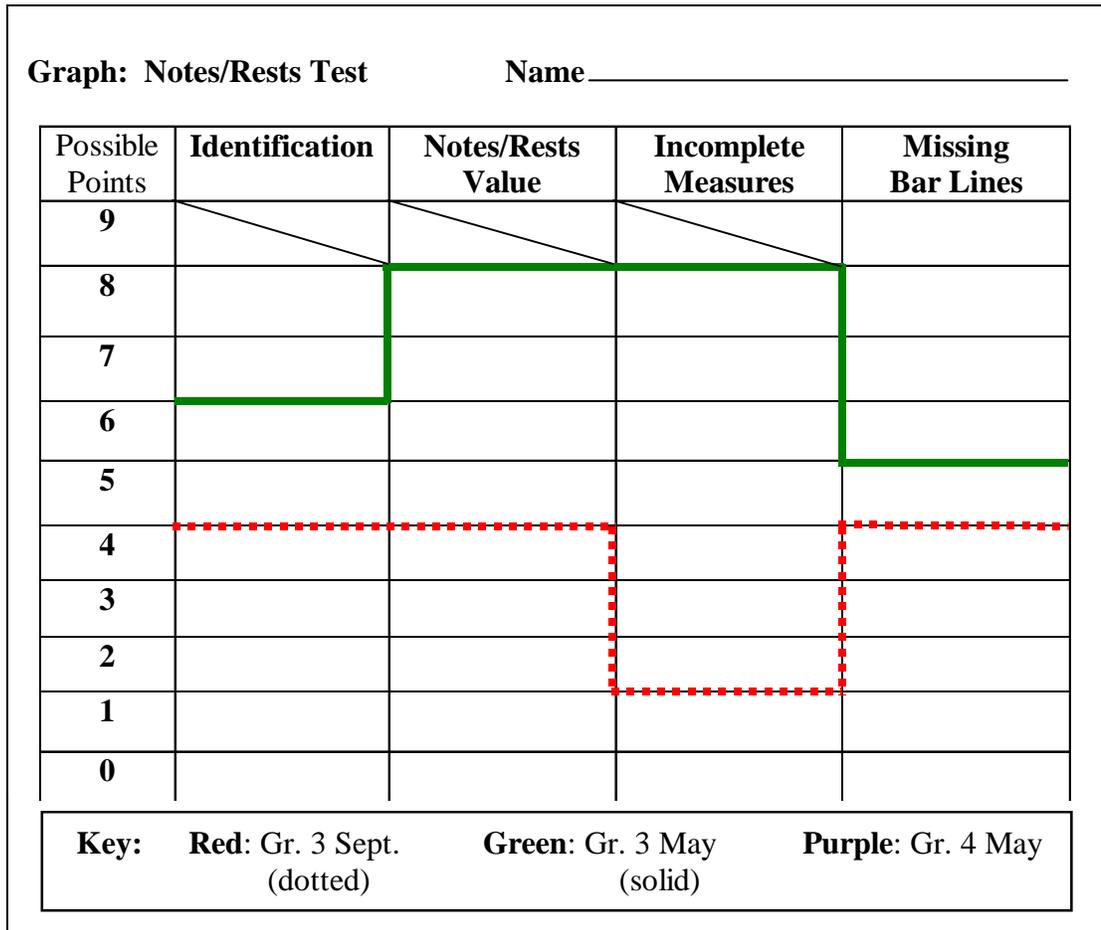
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APPENDIX A

The following is an example of the graph used to record student progress on notes and rests knowledge. This graph shows the actual data for student #38 from 2002-2003. The teacher marked the scores for each section on the students' tests. Students transferred the test data to their graph using color crayons. Students retest in May of their fourth grade year and record their retention rate using a purple crayon.





APPENDIX C

**Notes & Rests Test**    Name \_\_\_\_\_

Class \_\_\_\_\_

Match the following notes and rests with their names. Write the letter in front of each name in the blank next to the symbol.

1.  \_\_\_\_\_

A. Whole note

2.  \_\_\_\_\_

B. Eighth rest

3.  \_\_\_\_\_

C. Sixteenth note

4.  \_\_\_\_\_

D. Half note

5.  \_\_\_\_\_

E. Eighth note

6.  \_\_\_\_\_

F. Whole rest

7.  \_\_\_\_\_

G. Half rest

8.  \_\_\_\_\_

H. Quarter note



Appendix D  
*"Musical Me"*

Student name \_\_\_\_\_ Gr. & Teacher \_\_\_\_\_

**My musical skills:** Please circle how your child feels about their musical skills.

Can you:

Describe and understand music ☺ ☹ ☹ Sing ☺ ☹



Read music notation ☺ ☹ ☹ Write/compose music ☺ ☹ ☹

**My musical activities:** Please place a checkmark by the activities in which your child participates.

- Bell Choir \_\_\_\_\_
- Children's choir \_\_\_\_\_ (Church or community?)
- Guitar lessons \_\_\_\_\_
- Piano lessons \_\_\_\_\_
- Violin lessons \_\_\_\_\_
- Other \_\_\_\_\_ (What?) \_\_\_\_\_



**Parents' musical activities:** Please place a checkmark by the activities in which you participate.

Current	Former	
_____	_____	Band (What instrument?) _____
_____	_____	Bell choir
_____	_____	Choir (Church, school or community?)
_____	_____	Guitar
_____	_____	Piano
_____	_____	Violin
_____	_____	Other (What?) _____



**Parents:**

Would you be willing to share your musical talents with our K-M students? **Yes**

**No**

Name \_\_\_\_\_ Phone # or email \_\_\_\_\_

If you have any questions or comments about our music program, please write them below.

APPENDIX E

## Composition 3-1

Name \_\_\_\_\_ Gr. 3 \_\_\_\_\_

Write a musical composition that includes **ALL** of the requirements in the checklist. After you finish your composition, complete the checklist below.

- \_\_\_\_\_ 1. Meter of 4 at the beginning
- \_\_\_\_\_ 2. Uses at least 3 different kinds of notes, including whole, half, quarter, or eighth notes
- \_\_\_\_\_ 3. Uses at least 2 different kinds of rests, including whole, half or quarter rests
- \_\_\_\_\_ 4. 4 measures long
- \_\_\_\_\_ 5. 4 beats in each measure
- \_\_\_\_\_ 6. Bar lines written at the end of each measure
- \_\_\_\_\_ 7. Double bar line at the end
- \_\_\_\_\_ 8. The rhythm is interesting
- \_\_\_\_\_ 9. You are able to perform your rhythm

**Do NOT** use any **staff lines**. Make changes if you do not like how it sounds.

Students in the control group used this checklist to complete their first composition assignment. The requirements were so restrictive that the project was more of a rhythm drill than a creative activity.

## APPENDIX F

**Gr. 3 Composition**

Name \_\_\_\_\_ Class \_\_\_\_\_

Your **grade** for your composition is based on the following criteria:

	Completed
1. Length: At least 8 measures	
2. Time signature of 4/4	
3. Four beats per measure	
4. More complex rhythms used All eighth and sixteenth notes beamed in one-beat groups	
5. Correct use of bar lines and double bar lines	
6. Title and name entered	

This is the composition checklist used by the experimental group during the second year. The teacher removed the restrictions on the composition length, and number and types of notes and rests used, to allow for more creativity. Students used the checklist to evaluate their own compositions and those of their peers. Student compositions varied greatly. Some were pages long, while others were the eight-measure minimum. Some compositions had very basic rhythms. Other students experimented with sixteenth notes and rests. Compositions had more rhythmic variety because students were encouraged to use any notes and rests they understood.

HOW WILL THE ABSENCE OF MOVEMENT FROM THE MUSIC  
CURRICULUM AFFECT STUDENTS' LEARNING AND MUSICALITY?

by

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B.A. Luther College, 1990

A capstone submitted to the Faculty of the Graduate School of

Winona State University

In partial fulfillment of the requirement for the degree of

Master of Science

Department of Education

December, 2004

This capstone entitled:

How Will the Absence of Movement from the Music Curriculum  
Affect Students' Learning?

Written by Susan M. Jystad

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Dr. Thomas

\_\_\_\_\_  
Date

The final copy of the capstone has been examined by the signatories,  
and we find that both the content and the form meet acceptable  
presentation standards of scholarly work in the above mentioned  
discipline.

Jystad, Susan (B. A., Music Education)

How Will the Absence of Movement from the Music Curriculum Affect Students' Learning and Musicality?

Capstone directed by Dr. Thomas Sherman, Ph. D.

#### Abstract

Performing with a steady beat, singing matched pitches and musicality are basic concepts taught in a music curriculum. Kinesthetic movement activities can be used to assist in teaching these concepts. However, space constraints due to a large student population often make it difficult to implement movement into the lessons as much as the teacher would like. This study looked at what would happen if movement was removed from the curriculum in a general music class.

For one quarter, first grade music students were tested to see what affect the absence of physical movement would have on their musical performance. Students were videotaped, recorded vocally, and monitored throughout the quarter to assess any changes that were evident.

In the timeframe used to conduct the study, it was determined that the elimination of movement from the music curriculum had little effect on students' abilities to perform a steady beat. However, the lack of movement did affect pitch matching and a heightened level of anxiety also became evident, which affected how students responded to music.

If taught properly, music instruction for students has the ability to enhance multiple systems of the human body, including the brain. If movement is eliminated from the curriculum (in this case, due to space constraints) students will not gain the

stimulation necessary for a natural musical development and their education will be affected.

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## INTRODUCTION

In the seven years since completion of the new building, the student population at Kasson-Mantorville Elementary School (grades K-4) has increased from 626 to 805 students. This increase has created space issues, causing many teachers, including the music specialists, to teach in areas that were not initially planned as classrooms.

Kasson-Mantorville has a very strong music program. The elementary students receive three or four (depending on the grade level) 25-minute music sessions in a five-day cycle, taught by two music specialists at the elementary level. Between these two teachers, four different rooms/spaces, with just one of those rooms being an official music room, are utilized. The teaching spaces include the use of a computer lab, a Kindergarten classroom, and a first grade community area called a pod.

### *Need for the study*

Teaching the basic concepts of steady beat keeping and pitch matching through singing are important aspects of the music curriculum at Kasson-Mantorville. Movement is used as a means by which to teach these concepts. However, it is often difficult to implement movement, given the space constraints. This project investigates whether the movement method that is currently used to teach the music students is necessary to build a strong musical foundation.

### *Statement of the problem*

Students need ample space in a music classroom to move about freely without inhibition. The implementation of movement into the music curriculum has been a

core part of a quality music education program. However, given space issues at the Kasson-Mantorville Elementary School, it is difficult to incorporate movement to its fullest potential.

#### *Purpose of the study*

The purpose of this study is to determine if the implementation of rhythmic movement in the music curriculum is directly related to the success of the students' musical advancement.

#### *Statement of the hypothesis*

The first grade test group students will be less successful than their peers in the control group in achieving the curricular expectations of steady beat keeping and pitch matching with an absence of movement in their music classes.

#### *Definition of terms*

**Steady beat:** the underlying pulse of the music that creates a feeling of stability.

**Rhythmic movement:** purposeful, regular movement, usually staying within the beat of the music.

**Arrhythmic movement:** uneven movement which does not stay within the beat of the music.

**Beat keeping:** showing the ability to consistently move to the beat of the music.

**Kodály:** the surname of Hungarian composer Zoltan Kodály. He developed a sequential and developmental system to teach children how to build a strong musical foundation.

**Dalcroze:** the late Emile Jaques-Dalcroze is a musician who developed a method of rhythmic education called Eurhythmics. His system has influenced music and dance programs around the world.

**Eurhythmics:** a Greek word that means, literally, *good rhythm*. This method of rhythmic music education is based on the combination and integration of body, mind and freedom of expression.

### *Variables*

#### *Independent variables.*

The class sections were taught in two different groups. One group was taught using movement as part of the lesson, and the test group was taught while limiting the movement of the students during the lesson.

#### *Dependent variables.*

The students' abilities to perform with a steady beat and pitch matching while singing were measured in this study.

#### *Control variables.*

All students in the study were in first grade and from the same elementary school.

### *Limitations of the study*

The issues of scheduling and facilities were limitations over which this researcher had no control. Each class was seen three times in a five-day period, but room assignments and the scheduled times of these classes were varied over those days. Days when other school activities were planned or holiday breaks took place caused a change in scheduling and affected the time that students would have had music class. A second limitation was the relatively small population sample since only first grade students from Kasson-Mantorville Elementary were studied.

Previous music instruction and socio-economic status of these students may have affected the results. Due to practical scheduling constraints, no attempt was made to randomize the samples for this study or to balance the study by gender, ethnicity, or other means. The time spent with each class was relative to student attendance, class size and behavioral issues. Also, with portable walls and no ceiling in the pod classroom, noise and distractions from visitors, staff, or other groups of students increased the noise level, making teaching difficult.

## REVIEW OF RELATED LITERATURE

Before a child is born, its body has already been moving in its mother's womb. By the middle of the pregnancy, the child's five senses are in the beginning stages of functioning. Pregnant mothers often report direct response of their unborn child to the music that they hear at a concert or movie and this movement only intensifies after the child is born (Burton and Kudo, 2000). Children's curiosity can be directly related to their need for movement; they are natural explorers and can easily be encouraged to play. By the time they enter into school, young children have explored and experienced their world through creative movement activities such as pushing, pulling, throwing and jumping. It is this sort of play and nonverbal language that children are comfortable with when they begin their formal schooling. In the case of music instruction, it becomes apparent that movement, both rhythmic and arrhythmic, can lead these young people toward fostering a strong sense of beat.

### *Music, Movement and the Brain*

The later part of the twentieth century brought about a renewed interest by researchers in how music and movement can affect a child's brain development. Authors Alvarez and Berg (2002) quote one such researcher in their article and write,

“In the 1990's, researchers ... discovered new ways to foster greater intelligence by nurturing brain growth during its most active phases. Where society once viewed the child's brain as static and unchangeable, experts today see it as a highly dynamic organ that feeds on stimulation and experience and responds with the flourishing of branching, intertwined neural forests. This discovery presents us with a way of helping our children reach their fullest and healthiest mental development. But it has a dark side, as well, if the

child's mind is under stimulated and underused" (p. 123).

This article suggests a "use it or lose it" approach when the child is still young. They are ready to learn and, in fact, require much stimulation to reach their fullest potential.

In his book, *Arts With the Brain in Mind*, author Eric Jensen (2001) writes that the application of movement to a task enhances multiple systems of the human body. Various physical activities are controlled by different parts of the brain. Simple movements such as chewing influence few systems and are controlled by brain circuits near the spinal cord. More complex movements like dancing or drumming involve more parts of the brain, causing the body to make sudden decisions, move quickly and still focus our attention on the given task.

### *Kinesthetic Learning*

Howard Gardner (1983) originally identified seven kinds of intelligences, two of which are the bodily-kinesthetic and musical intelligences. Music teachers are able to focus on these types of intelligences and can easily integrate them into their music curriculum. Gardner believes in action and activity, claiming that experiences with inactivity have little lasting impact on the student. Especially at the elementary level, interpreting a concept through physical movement can help to increase comprehension, emphasize social skills, and channel the disruptive energies of some into a positive learning experience (Griss, 1994). Pfleiderer (in Pratt, 1997) found that children were able to match pitch and melodic contour more often when they were asked to actively participate by clapping their hands or tapping while making music.

Many general music methodologies, such as those of Kodály and Dalcroze, have advocated that movement instruction is a primary step in the process of learning music (in Pratt, 1997). Phyllis Weikart (in Rohwer, 1998) states, “Watch any group that is singing together, playing instruments or participating in locomotor rhythmic movement activities—the greater the number of individuals who perceive the common beat, the more successful the group experience will be” (p.414). Weikart, a nationally recognized expert in motor-skills development for children, believes that the number of children who are able to keep a steady beat is decreasing because they are receiving movement stimulation in rhythmic patterns rather than on the beat. This stimulation often occurs with the adults who are the pre-school caregivers of these children. Instead of clapping a steady beat for the children to follow, caregivers often clap to the rhythmic pattern of the lyrics instead of clapping with the underlying beat.

### *The Importance of Natural Development*

Many studies are finding that age is directly related to the musical development of children. By the age of three, Moog (in Pratt, 1997) states that children are capable of singing the pitches, words and rhythms of a song accurately, for the most part. The researcher also found that the number of children who could match movement with the music they heard doubled between the ages of four and six.

Studies have shown that early music training dramatically improves spatial reasoning necessary for developing math skills. Jensen (2001) explains that the area of the brain that involves math is also highly involved with music, thus creating an overlap, of sorts, in that region. He also speaks of a two-year study by Hurwitz et al. of first graders who received music instruction in the experimental group. The

control group received no music training. At the end of the study, the group with music training scored higher than their peers in the control group for both years. This study is relevant in that it shows a connection between thoughtful kinesthetic movements in music training with helping to build a stronger region in the brain to develop spatial reasoning.

Besides physical rhythms, a child also has experiences that are aural and visual, such as a horse's galloping hooves (Findlay, 1971). With combinations of experiences such as these, the child is developing his sense of rhythm, though unaware of its implications, by creating the foundation of his formal education.

## METHODS AND PROCEDURES

### *Overview*

This study tested how students reacted to the lack of movement in their music classes. For nine weeks (one quarter), all forms of movement were removed from the curriculum, including the constant beat-keeping techniques that have been commonly used. The study was expected to show that the lack of movement would affect the students in a negative manner.

### *Subjects*

All one hundred sixty-two first grade students from Kasson-Mantorville Elementary School were the test subjects for this study. First grade students were selected for this study because they had one year of formal music instruction in their background. This enabled the researcher to utilize kindergarten assessment data to help establish a baseline ability level for the students. Students who moved into, or out of, the district during the testing period were not used in the data.

### *Research Design*

Of the seven sections, four sections comprised of 92 students total, were kept as the control group. These students received music instruction as they always had, with a variety of skills and techniques provided in each lesson, including rhythmic and arrhythmic movement activities such as hand-clapping, beat-keeping, marching or dancing and/or some other form of eurhythmics. Significant time was also dedicated to singing, listening, playing games and playing instruments.

The remaining three classes, totaling 70 students, were deprived of all forms of movement. These classes received the same lesson content as the control group,

but excluded all activities utilizing movement. Instead of moving to a circle, the students stayed in their rows, seated on the floor. They were not permitted to show any form of beat-keeping techniques, movement to show pitch changes or movement to express emotion or self-expression; the music teacher refrained from any beat-keeping or movement styles as well. Students were often reminded to keep their hands in their laps while participating in a singing or listening exercise and were encouraged to be very still.

#### *Instruments/measuring devices*

Among the research collected were assessments that tested steady beat and pitch matching from the previous spring, when the students were in Kindergarten. In the fall of their first grade year, the researcher taught her students several songs in which the beat was very evident. The first few days of the study were spent video taping each student as, one by one, they performed a steady beat pattern on a hand drum while the rest of the class sang. Data was collected as the researcher viewed the video and recorded the results of the test.

To collect data for pitch matching, the researcher tape-recorded each student. She sang a call and response song with each student, as well as a short melodic pattern. If the student was able to sing what the teacher sang (voices were matching in pitch), that student was considered as able to match pitch.

The same testing methods were utilized again at the end of the study.

#### *Validity measures*

The results found in this study are limited to that of keeping a steady beat and pitch matching by the students. This will not necessarily create a valid measure of

overall musicality, but rather, a subset of skills. Other aspects of musicality that were not measured include concepts such as emotional involvement, self-expression and the ability to maintain a melody. Since the hypothesis focuses on beat and pitch, the measurements made were valid. Overall musicality, while important, would be the focus of future study.

#### *Reliability measures*

A single test administrator, the researcher, completed all testing. This means that there are no problems with different subjective testing due to different people making the measurements or giving instructions, and it enhances reliability. Reliability was also enhanced by multiple testing opportunities at the beginning and end of the study. Since the measures were subjective, reliability may have been influenced by outside factors affecting the test administrator and/or the students.

#### *Procedures*

During the first days of the study, every class was videotaped during a typical music lesson to evaluate how well the students performed a steady beat. Evaluations were completed and the results were averaged to get a baseline. The singing records of these same students as Kindergarteners were referenced; the records included how well each student could match a simple melodic pattern with a definite rhythm. These results were used as a baseline for the study to examine how well the students moved to the beat of the songs or rhymes that they heard, and whether or not they could match pitch while singing. At the end of the nine-week period, students were assessed again in the same manner to determine if the data had changed.

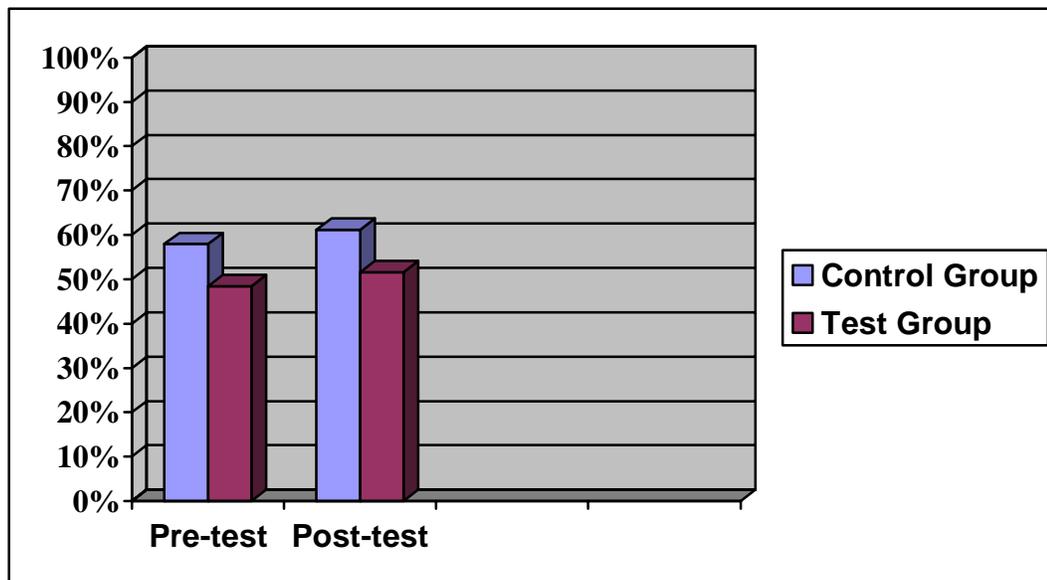
*Conclusion*

The conclusion of this study finds that the hypothesis that first grade students will be less successful in achieving the curricular expectations of steady beat keeping and pitch matching with the lack of movement in their music classes was true within the margin of error of the given data.

## RESULTS AND DISCUSSION

In the timeframe used to conduct this study, it was determined that the elimination of movement from the music curriculum had little effect on the students' abilities to keep a steady beat. The control group improved in their overall steady beat rates by 3.25%, while the test group improved by 3.17% (see Table 1).

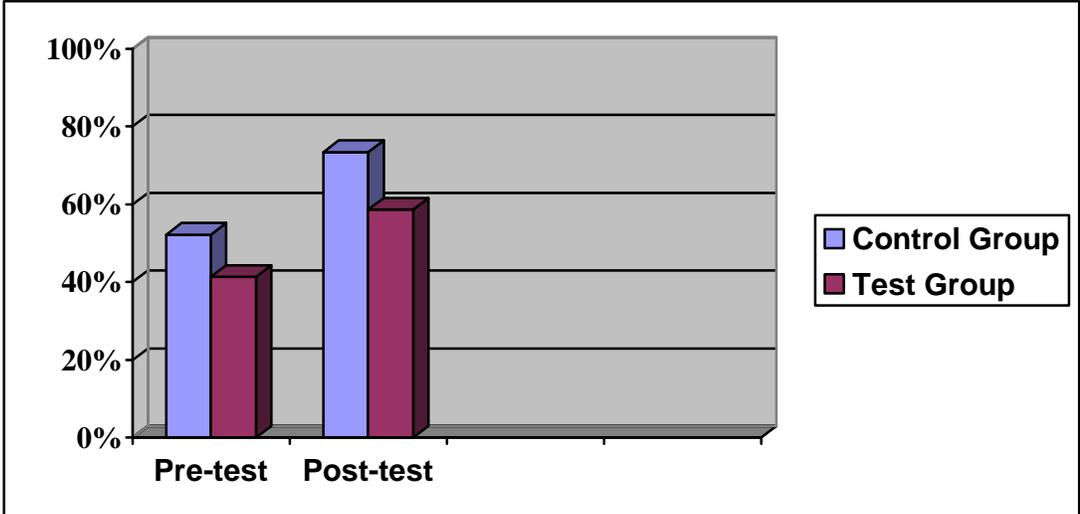
Table 1: Student ability to keep steady beat.



On the issue of matching pitch, a slightly bigger difference between the two groups became evident, with the control group scoring higher than the experimental group. The post-test average score in the control group was 21.2% higher than in the pre-test; the post-test average score for the test group rose 17.2%. It is important to note again that all first grade students received the same training during the 9-week testing period, with the absence of movement activity as the only difference. In the table below (Table 2), the reader will note that those students who used movement

during singing time did better in the pitch matching assessment than those who could not.

Table 2: Student ability to match pitch.



One unexpected result noted by the researcher was a change in the behavior of the movement-deprived students as classroom management became much more of an issue. It was apparent that these children wanted to move freely to exhibit their interpretations of what was heard in class. A heightened level of anxiety was evident in these classes as well.

## SUMMARY AND CONCLUSION

Movement activities are used as a means to teach the concepts of steady beat, pitch matching and musicality in a music class. With the space constraints of her teaching location, the researcher found it difficult to implement movement techniques into her lessons.

This study looked at what would happen if movement were removed from the curriculum in the first grade general music classes. For nine weeks, students were monitored to assess any changes that occurred in their music learning.

Data for this study has shown that the exclusion of movement from the music curriculum had little effect on students' abilities to keep a steady beat. However, in the timeframe used to conduct the study, the lack of movement did affect the students' ability to match pitch and a heightened level of anxiety was also evident, but not measured since it was outside the scope of this study.

Music classes have the capability of enhancing multiple systems of the human body, including the brain. If movement is eliminated from the curriculum, students will not gain the stimulation necessary for a natural musical development.

### *Recommendations*

In discussions following a presentation of this study, a question arose about how the researcher felt this would impact the future music education of the students in the test group. This research was conducted early in the school year for the sole purpose of getting those students back on track by the time they finished their career as first graders. The study was done with much trepidation concerning the education

of the test group, but the point was to show that the impact on students' learning and that was accomplished.

Proper brain development in a young child depends upon a combination of kinesthetic, auditory and visual experiences—a musical version of the three-legged stool, if you will. To remove one of these “legs” is to remove the opportunity for a child to receive stimulation to all parts of the brain.

To receive more conclusive data for a study such as this, the researcher could, and should, collect data for at least two school years. The research would surely be more accurate and would likely show a greater difference in the results. However, the research that has been gathered is enough to show that movement is an issue when it comes to providing an enhanced education for musical development. In addition, the presumed impact of eliminating movement for music instruction for a group of students over a longer period of time precludes the pursuit of such research on ethical grounds.

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