INFORMATION TO USERS

This manuscript has been reproduced from the microfilm master. UMI films the text directly from the original or copy submitted. Thus, some thesis and dissertation copies are in typewriter face, while others may be from any type of computer printer.

The quality of this reproduction is dependent upon the quality of the copy submitted. Broken or indistinct print, colored or poor quality illustrations and photographs, print bleedthrough, substandard margins, and improper alignment can adversely affect reproduction.

In the unlikely event that the author did not send UMI a complete manuscript and there are missing pages, these will be noted. Also, if unauthorized copyright material had to be removed, a note will indicate the deletion.

Oversize materials (e.g., maps, drawings, charts) are reproduced by sectioning the original, beginning at the upper left-hand corner and continuing from left to right in equal sections with small overlaps. Each original is also photographed in one exposure and is included in reduced form at the back of the book.

Photographs included in the original manuscript have been reproduced xerographically in this copy. Higher quality 6" x 9" black and white photographic prints are available for any photographs or illustrations appearing in this copy for an additional charge. Contact UMI directly to order.

UMI

A Bell & Howell Information Company
300 North Zeeb Road, Ann Arbor, MI 48106-1346 USA
313/761-4700 800/521-0600

THE EFFECTS OF DALCROZE EURHYTHMICS ON BEAT COMPETENCY PERFORMANCE SKILLS OF KINDERGARTEN, FIRST-, AND SECOND-GRADE CHILDREN

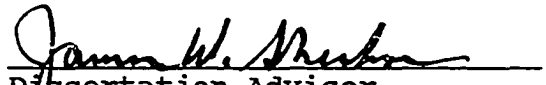
by

Sarah Elizabeth Rose

A Dissertation submitted to
the Faculty of The Graduate School at
The University of North Carolina at Greensboro
in Partial Fulfillment
of the Requirements for the Degree
Doctor of Philosophy

Greensboro
1995

Approved by

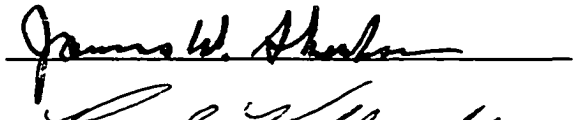


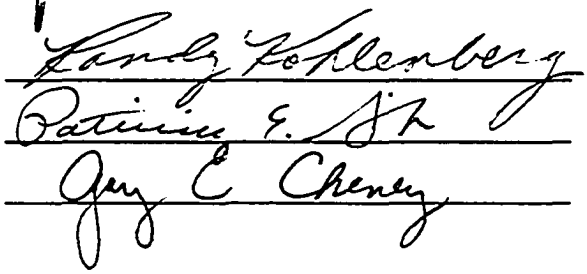
Dissertation Advisor

UMI
300 North Zeeb Road
Ann Arbor, MI 48103

APPROVAL PAGE

This dissertation has been approved by the following committee of the Faculty of The Graduate School at The University of North Carolina at Greensboro.

Dissertation Advisor 

Committee Members 

March 22, 1995
Date of Acceptance by Committee

March 22, 1995
Date of Final Oral Examination

ROSE, SARAH ELIZABETH., Ph.D. The Effects of Dalcroze Eurhythmics Instruction on Beat Competency Performance Skills of Kindergarten, First-, and Second-Grade Children. (1995)
Directed by Dr. James W. Sherbon. 125 pp.

The purpose of this study was to examine the effects of Dalcroze eurhythmics instruction on beat competency performance skills of kindergarten-2nd-grade children. A pretest-posttest control group served as the experimental design.

Subjects for the study included six intact classes of kindergarten, 1st-, and 2nd-grade children from two rural public schools (n = 126). Treatment consisted of the experimental group (n = 65), kindergarten, 1st-, and 2nd-grade classes located in one school, receiving Dalcroze eurhythmics instruction and the control group (n = 61), kindergarten, 1st-, and 2nd-grade classes located in the other school, receiving traditional music instruction.

A group pretest was administered to each class which measured individual beat competency performance skills. Pretest scores were subjected to a 2 (instructional group) x 2 (gender) x 3 (grade level) ANOVA, revealing a significant difference ($p < .05$) for the effects of instruction, gender, and grade level on the pretest.

Following 32 weeks of instruction, all subjects were individually administered a posttest, Flohr's (1991)

Rhythmic Movement Analysis Test (RMAT) designed to measure beat competency performance. During this posttest, each subject performed five different rhythmic activities at four different tempos. Posttest scores were subjected to a 2 x 2 x 3 ANCOVA with pretest beat competency scores serving as the covariate. The Dalcroze instruction group scored significantly higher ($p < .05$) than the traditional instruction group. There was no significant effect of gender or grade level on beat competency performance skills. Additional descriptive analysis revealed that beat competency mastery levels were affected by rhythmic activity type and performance tempo.

ACKNOWLEDGMENTS

The researcher would like to thank the many individuals who contributed advice and assistance throughout the preparation of this dissertation. In particular, I wish to thank Dr. James Sherbon, for his research integrity, patience, and guidance. I also would like to thank my committee members; Professors Patricia Sink, Randy Kohlenberg, and Gay Cheney, for their contributions and encouragement. Sincere appreciation is extended to Dr. Robert Abramson for his inspired teaching and commitment to the Dalcroze pedagogy. I am also grateful to Karen Callahan for her assistance with statistical procedures as well as Dr. John Flohr, whose contributions regarding the Rhythmic Movement Analysis Test have proven invaluable in this study.

I wish to express deep appreciation to my parents, Dr. and Mrs. J.H. Rose, for their unconditional support and encouragement. Finally, I would like to thank my husband, Doug, who has provided a continual source of inspiration during these years of research through his patience, love, and remarkable sense of humor.

TABLE OF CONTENTS

LIST OF TABLES

CHAPTER I

INTRODUCTION

Until the advent of research by Johann Pestalozzi, a Swiss educator (1746-1827), and Jerome Bruner, a 20th-century cognitive psychologist, the interrelationship between brain and body had received minimal recognition by educators. Their embryonic work has ameliorated an understanding of the relationship between the cognitive learning processes and "kinesthesia," or learning by doing. Primarily as an outgrowth of Pestalozzi's and Bruner's research, many 20th-century educators are now focusing on the brain-body gestalt and its function within cognitive learning processes (Choksy, Abramson, Gillespie, & Woods, 1986; see also Bruner, 1961).

"Experience before theory" was one of Pestalozzi's basic premises underlying his theory of discovery learning. His early research, whereby he attempted to link cognitive learning processes to the natural development of the child, provided a foundation for the work of future educational psychologists. Bruner's enactive mode of learning is an extension of the "Pestalozzian" principles of education and is based on the premise that children should physically experience new concepts before translating them into written icons,

words, or notation. Several music education curricula reflect Pestalozzi's and Bruner's theories of physically active experiential learning (Weikart, 1989, Orff, 1991, Dalcroze, 1986, Silver Burdett & Ginn, 1994; Holt & Rinehart, 1988; and McMillan & Co., 1991).

Rhythm, as a musical element, and human body movements have many commonalities. To teach rhythmic concepts in the absence of natural movements such as walking or running, reduces the connections between the external rhythmic stimuli and the learner's conditioned physiological responses and behaviors. Contemporary music educators typically use a variety of movement teaching strategies during instruction; however, one of the prominent movement-to-music approaches emerging in music education since the early 1900s originated with Jaques-Dalcroze (Wax, 1979). Two basic premises of the Dalcroze approach reflecting the influence of Pestalozzi and related to Bruner's theory of learning are the connection between natural movement and musical concepts, and physical experience before theory.

Importance of Rhythm

Many researchers have substantiated the importance of rhythm in music learning experiences. Cooper and Meyer (1960) reinforced the importance of rhythm by stating, "To study rhythm is to study all of music. Rhythm both

organizes and is itself organized by all the elements which create and shape music processes" (p.1). Mursell (1957) stated that "rhythm gives life, sparkle, reality, and expressiveness to musical performance and is the best and most natural starting point for musical creation" (pp. 254-257). Gaston (1968) also substantiated the importance of rhythm with his statement:

> When the musics from all cultures of the world are considered, it is rhythm that stands out as more fundamental. Rhythm is the organizer and the energizer. Without rhythm, there would be no music whereas there is much music that has neither melody nor harmony. (p. 17)

Radocy and Boyle (1988) concluded that although rhythm is a prominent musical element, it has been less studied than melody and harmony. The rhythm studies that do exist contain research disparities regarding teaching methodologies, the effects of instruction and gender on rhythmic development, and the logical sequence for teaching rhythmic concepts. Arnoff (1979) stated that "movement to songs and recordings has been encouraged, but only the superficial relation of body movement to music seems to have been understood" (p. 3).

The Music Educators National Conference has designated early childhood music education as one of the primary areas of focus for the 1990s, thus recognizing a need to further develop music programs for young children

(National Commission on Music Education, 1991). Music educators realize the importance of providing early, quality musical experiences for young children (Andress, 1980). McDonald & Simon (1989) concluded that although more research is occurring in the area of early childhood music education than any other time in history, "early childhood music education still suffers from lack of communication between researchers, classroom teachers, and music educators" (p.19).

Emile Jaques-Dalcroze (1865-1950), a Swiss music educator, developed a music education approach entitled "eurhythmics" which is based on the premises that rhythm is the primary musical element and the source of rhythm is found in the human body. The eurhythmics approach has been used successfully with young children throughout North America and the World and presently is considered a fundamental music education approach (Abramson, 1986). The purpose of this study is to examine the effects of Dalcroze eurhythmics instruction on developing basic rhythmic performance skills in kindergarten-2nd-grade children.

Jaques-Dalcroze Approach

Descriptive Foundations

Early childhood music education is documented as early as the mid-1800s with the work of Julie Jaques. She

was a practicing Pestalozzian music teacher who recorded her observations while utilizing the experiential theories of Pestalozzi with young children. She encouraged each child to experience music as an integrated process by moving, playing, singing, acting, and creating. Jaques felt it was important for music education to be presented as a totality, not as fragmented concepts. She passed these innovative ideas to her son, Emile Jaques-Dalcroze, who incorporated them into a new method of music teaching (Abramson, 1986).

Emile Jaques-Dalcroze (1865-1950) was a music educator who taught in Switzerland and Germany from 1902-1950 (Wax, 1979). He recognized an absence of musical rhythm, "a-rhythm," in his students at the Conservatory of Music in Geneva and as a result developed a training technique, which he entitled "eurhythmics," to teach the "coordination of muscles and nerves; in short, to harmonize mind and body" (Dalcroze, 1980, p. vii). Jaques-Dalcroze did not limit his work to adults, but also extended his techniques to children, thus his research led him to develop a comprehensive curriculum for teaching children all elements of music: melody, rhythm, dynamics, form, tempo, timbre, and harmony. According to Jaques-Dalcroze, the teaching of the elements of music through movement, with the body and ear as the primary instrument, should precede all other musical training. He

summarized eurhythmics training when he stated: "Any musical idea may be transformed into movement . . . any body movement may be transformed into its musical counterpart" (Dalcroze, 1921, p. 342).

According to Abramson (1986), the Dalcroze pedagogy is one of the oldest established approaches in music education, yet probably the least understood. Because there is no predetermined sequence of activities or materials in the Dalcroze curriculum and the teacher is expected to be flexible and creative when teaching, the term "approach" is often used in reference to the Dalcroze pedagogy (Bachman, 1991). In contrast, the term "method," as used by Abramson to describe other teaching strategies, traditionally implies a more highly structured curriculum that does not provide the teacher as much flexibility within the pedagogical sequence. Johnson (1993) reinforced the necessity of flexibility and creativity when incorporating the Dalcroze approach by stating, "there are no specific song materials, lesson plans, or exercises that truly define this approach. Instead, the method is embodied in the teacher through a unique combination of musical and pedagogical skills" (p. 42). In view of the common practice by music educators in referring to Dalcroze and Orff pedagogies as approaches and Kodaly and Suzuki pedagogies as methods, the use of

the term "approach" will be employed to describe and reference the Dalcroze pedagogy.

Description of the Approach

The Dalcroze approach is divided formally into three segments: eurhythmics, improvisation, and solfege (Jaques-Dalcroze, 1921). Within the sequence of the Dalcroze pedagogy, the eurhythmics class is the primary branch of study with young children. Improvisatory activities are included in eurhythmics classes, and basic solfege techniques are utilized for the purpose of translating rhythmic ideas and experiences into written notation.

A description of the Dalcroze approach would not be complete without Dalcroze's expanded definition of rhythm beyond the traditional element of keeping mechanical time. According to Jaques-Dalcroze, rhythm includes the factors of energy, space, weight, and balance. Instead of teaching rhythmic movement as an isolated attack on the beat, Jaques-Dalcroze taught a process of rhythmic movement that included a preparation, attack, prolongation, and return to preparation for every beat. For example, a downbeat has a different sense of weight and balance on the preparation, attack, prolongation, and return than an upbeat. This definition of rhythm is now the central focus of eurhythmics instruction, and Dalcroze

students are trained to perform beats using this four-step sequence.

The Dalcroze approach is unique in that the teacher incorporates the child's natural repertoire of movements, e.g., walking, skipping, and running; and expands this repertoire through rhythmic and improvisational exercises. In practice, the teacher considers and builds upon the limitations of the child's tempo and movement repertoire. This approach is founded on the basic premise that the child organizes rhythmic stimuli and translates these stimuli into an existing movement repertoire. The child uses the body as a "musical instrument" (Arnoff, 1979, p. 36).

Opportunities for rhythmic development in eurhythmics classes occur in the form of improvisatory exercises. The child is instructed to respond to musical suggestions (follow) or make independent decisions (lead). Other exercises termed "quick reaction games" are incorporated to encourage the child to demonstrate a physical response to a predetermined musical stimulus. In summary, the basic principle upon which the Jaques-Dalcroze approach is founded is to:

> help students of all ages translate aural sensations into physical action: to develop rapid communication between the ears which listen, the brain which analyzes aural sensations, and the body which acts to produce and interpret the sounds and feelings of musical rhythm. (Abramson, 1973, p.1)

The improvisatory aspect of the Dalcroze eurhythmics class is the principal factor that establishes the uniqueness of the approach. Dalcroze teachers improvise rhythmic elements and students are instructed to use natural body movements to respond to musical stimuli. Dalcroze justified the use of improvisation with his statement, "rhythm is at one and the same time, order, and pace in movement and a personal way of performing the movement. The study of rhythm should therefore lead us to bear ourselves, in every aspect of everyday life, in an individual manner" (cited in Bachman, 1991, p. 14).

The current study conformed to the philosophy of Jaques-Dalcroze by incorporating only those rhythmic activities which are improvisatory in nature and draw upon the child's natural movement repertoire. Rhythmic factors of energy, weight, space, and balance were also considered during instruction. See Appendix C for representative Dalcroze eurhythmics lesson plans utilized in the current study.

Statement of the Problem

Beat Competency

Music educators generally agree that in the logical sequence of teaching musical elements the ability to maintain a steady beat, or beat competency, is of primary importance and should be emphasized in early structured

teaching environments with young children. For the current study, beat competency was operationally defined as the ability to synchronize bodily movement with a musical stimulus. Much of the published literature supports the belief that the ability to maintain a steady beat with a musical stimulus is fundamental for future development of rhythmic skills (Gordon, 1980; Dalcroze, 1921; Choksy, et al., 1986; Weikart, 1989).

Petzold (1966) found that by grade three, the ability to respond to aural presentations of rhythmic patterns is well established and does not change substantially in grades four-six. Gordon (1980) also supported this finding from his research, and in addition, concluded that melodic and rhythmic aptitude stabilize by grade four. Although according to Petzold and Gordon beat competency stabilizes by grade three, research disparities clearly exist in the literature relating to the development of rhythmic skills and strategies for teaching beat competency to young children, specifically in the preschool to grade two range.

Strategies for Teaching Beat Competency

Research disparities also exist among music educators regarding specific instructional strategies for teaching beat competency. Jaques-Dalcroze (1921) emphasized the effectiveness of incorporating large muscle

movements when teaching beat competency, while others emphasize small muscle movement (Weikart, 1989; Rainbow, 1981). Additional controversy exists among music educators regarding the sequencing of teaching beat competency in relation to other rhythmic concepts and the amount of instructional time allocated for teaching beat competency skills.

Numerous researchers have identified the difficulty that young children demonstrate in maintaining a steady beat (Christianson, 1938; Heiliein, 1929, Jersilood & Bienshotck, 1935), yet some curriculums mandate the teaching of other rhythmic elements such as meter or rhythmic patterns before beat competency has been established. Weikart (1989) suggested that music programs emphasizing the teaching of rhythmic patterns prior to the development of beat competency interfere with the child's rhythmic learning.

Effects of Instruction and Maturation on Beat Competency

Two principal views regarding beat competency development are prominent in the research literature. Several researchers have concluded that beat competency is a result of maturation and support the belief that instruction does not affect the development of beat competency skills. Groves (1969) found that maturation

significantly affected 1st-, 2nd-, and 3rd-grade children's abilities to synchronize their body movements with music, and the effect of training on these tasks was not significant. Serafine (1975) reported similar results in a study of rhythmic conservation with children, ages 4-9, and Frega (1979) concluded that age, not training, was an important factor in 3- and 4-year-old children's abilities to synchronize body movements with a musical stimulus. McDowell (1974) also found that training did not affect the rhythmic ability of 4-year-old children. Gilbert (1980) reported that rhythmic skills improved in children ages 3 to 6, even in the absence of rhythmic training.

Other researchers have concluded that instruction is fundamentally effective for developing beat competency. Burnett (1983) concluded that rhythmic instruction significantly improved musical perception and motor skill development of preschool handicapped children. High (1987) found that rhythmic training significantly improved kindergarten children's beat competency performance skills. Moore (1984) concluded that 2nd- and 3rd-grade students who received movement training sessions scored higher on rhythmic aptitude tests when compared to students who did not receive movement training. Cheek (1979) found that 4th-grade students who experienced psychomotor activities as an integral part of music

instruction scored significantly higher on rhythmic responses when compared to students who had not received psychomotor training. Joseph (1982) concluded that kindergarten children receiving Dalcroze eurhythmics performed significantly higher than children not receiving this training when responding to familiar rhythmic patterns in unfamiliar music.

Effects of Gender on Beat Competency

Disparities not only exist in the research literature regarding the effects of maturation and instruction on developing fundamental rhythmic skills, but researchers have also drawn varying conclusions regarding the effect of gender on the development of these same skills. Groves (1969), Gardner (1971), and High (1987) found no significant differences in rhythmic abilities as a result of gender. However, Moore (1974), Schleuter & Schleuter (1989), Flohr (1991), and Gilbert (1980) concluded that females scored significantly higher on rhythmic tasks than males.

Summary of the Problem

As evidenced by the many disparities found in the research literature regarding the effects of instruction, teaching strategies, and gender on developing beat competency skills, there are unresolved pedagogical issues

surrounding the practice of teaching beat competency to primary-aged children. These disparities affect the music education curriculum and the music achievement of students. Without a clearly defined approach for teaching rhythmic skills, there will continue to be inconsistencies in music students' rhythmic achievement. It is critical that classroom teachers and researchers continue to seek effective strategies for teaching basic rhythmic skills so that children may respond to music instruction more efficaciously.

Purpose of the Study

The principal research objective for the current study was to determine if Dalcroze eurhythmics instruction had a significant effect on developing beat competency performance skills of kindergarten, 1st-, and 2nd-grade children when compared to traditional music instruction. Traditional music instruction was defined as participation in instrument playing, creative movement, guided listening, dancing, and singing activities. Secondary research objectives included the effect of gender and grade level on beat competency performance skills. Additional research objectives included the identification of any relationship between selected rhythmic activities and performance tempos on beat competency mastery levels. The dependent variable of beat competency performance was

measured by Flohr's (1991) Rhythmic Movement Analysis Test (RMAT). The null hypotheses are listed below.

Main Hypothesis

1. There is no significant difference between the beat competency performance skill posttest means of kindergarten-2nd grade children who receive Dalcroze eurhythmics instruction and kindergarten-2nd-grade children who receive traditional musical selection.

Secondary Hypotheses

1. There is no significant difference between the beat competency performance skill posttest means attributed to gender.

2. There is no significant difference between the beat competency performance skills posttest means attributed to grade level.

3. There is no significant interaction between the independent variables of treatment, gender, and grade level.

For purposes of hypothesis testing, alpha was set at $p < .05$.

Summary

The published empirical research on beat competency, especially as related to young children, is

minimal. Therefore, it is imperative that music educators seek understandings of beat competency and formulate conclusions based on research findings. The primary research objective for conducting this study is to augment and verify previous research findings regarding rhythmic instruction for young children. Conclusions from this study may reinforce other research findings and help music educators make instructional decisions that will facilitate rhythmic learning.

CHAPTER II

REVIEW OF LITERATURE

The published literature regarding rhythmic skills development is extensive. However, few studies have focused specifically on the ability of young children to maintain a steady beat. McDonald and Simons (1989) concluded that although there are many research studies focusing on musical development and teaching strategies for young children, there are "scant relationships" between findings, thus indicating a need for continued research on effective instructional techniques for rhythmic skills development. This chapter provides a review of research that relates to beat competency as presented in Chapter I and includes research studies on early childhood rhythmic development and teaching strategies. The research reviewed in this chapter also includes findings related to the effects of instruction, age, gender, motor task, and tempo on fundamental rhythmic skill development.

Rhythmic Studies with Young Children

Developmental Rhythmic Studies

In a longitudinal study, Morehead and Pond (1941) observed recurrent patterns of preschool children's musical behaviors and found that large muscle movements such as walking and running enhanced children's abilities to synchronize their bodies with a musical stimulus. Gardner (1971) studied 1st-, 3rd-, and 6th-grade students' duplication of rhythmic pattern responses and found that 1st-grade students naturally explored rhythm using large motor movements while 6th-grade students were more inactive when listening to rhythmic patterns. Rainbow (1981) found conflicting results from a 3-year longitudinal study of rhythmic abilities of children ages 3 and 4 years. He reported that 60% of 4-year-olds could clap a steady beat with a musical stimulus and only 20% of the same group could march to a steady beat with a musical stimulus. He concluded that large motor movements such as marching are too difficult for young children to perform rhythmically and questioned the validity of using these activities with young children.

Gordon (1979) stated that both small and large muscle movements may be used in rhythmic training with young children, but that large muscle movement should be encouraged because preschool children find it more

difficult to respond with precision when using small muscle movements. He further concluded that some small muscle movements "tend to make children rigid and are counterproductive in the case of rhythmic development" (p. 55). Metz (1986) investigated factors involved in 2- 3- and 4-year-old children's free-choice rhythmic responses while listening to music in a preschool setting. She concluded that disposition, developmental stage, and mode of representation affected children's rhythmic responses, and that children spontaneously responded to music with movement. She also found there were no significant differences between 2- 3- and 4-year-old children in the ability to synchronize body movements with music during Dalcroze activities. Moog (1976) contradicted Metz's results, however, when he observed movements to music with 500 children ages 6 months to 6 years and reported that, as children developed, their abilities to synchronize body movements with a musical stimulus improved.

In three separate longitudinal studies on rhythmic behavior of young children, Waterman (1936), Shelley (1980), and Miller (1983) independently concluded that children naturally engage in rhythmic movement when listening to music. Arnoff (1979) observed that children's use of motor activities is crucial to learning and emphasized the importance of a time-space energy

relation to music as an essential technique in teaching beat competency.

Research disparities obviously exist in the literature relating to rhythmic development and responses of preschool children; however, these studies generally reinforce the premise that young children naturally respond to music with movement. Because of this natural link, music paired with movement may be an appropriate instructional strategy for teaching musical elements to preschool and primary-aged children.

Effects of Instruction

There are two principal views in the research literature regarding the effect of instruction on fundamental rhythmic skill development. Some researchers support the belief that instruction does not affect the development of fundamental rhythmic skills, thus implying that changes in these skills are a result of maturation/age. Others support the premise that instruction is effective for teaching fundamental rhythmic skills, thus negating the effect of maturation.

Brown (1981) studied the effects of an integrated physical education/music program on early childhood perceptual-motor performance with children ages 4-6. An experimental group (n = 15) who received 24 rhythmic training sessions using Kodaly and Dalcroze techniques was

compared to a control group (n = 15) who received 24 sessions of creative dramatics. Both groups were tested on perceptual-motor performance, and the experimental group scored significantly higher ($p < .01$) than the control group. Brown concluded that within the limits of this study, an integrated program of physical education and music based on the Kodaly and Dalcroze curricula for children ages 4-6 led to superior improvement in perceptual-motor performance.

In a similar study with 23 handicapped preschool children, Burnett (1983) compared beat competency skills between an experimental group who received 12 weeks of rhythmic training and a control group who received no rhythmic or musical training. Burnett used a modified version of Weikart's (1989) Rhythmic Competency Test as a posttest measure. She found that the experimental group performed significantly higher ($p < .01$) than the control group and concluded that rhythmic training was effective for improving beat competency.

Cheek (1979) studied the effects of psychomotor training on the abilities of 57 4th-grade students to discriminate pitch, intervals, meter, major/minor modes, and tonal center. He also studied the effects of psychomotor training on perception of self-concept and the ability to read music. The experimental group participated in traditional music instruction that

included psychomotor experiences (creative movement, body rhythms, and hand gestures). The control group participated in traditional music instruction that did not include psychomotor experiences but did include singing, playing instruments, and creating and analyzing music. Treatment consisted of three 30-minute sessions for 15 weeks. The Music Achievement Tests I and II, "Response to Rhythm in Music Test," and Piers-Harris Children's Self-Concept Scale (Piers & Harris, 1969) were used as posttest measures. The experimental group scored significantly higher ($p < .05$) than the control group on meter discrimination, reading skills, rhythmic responses, and self-concept. There were no significant differences for pitch, interval, or tonal center discrimination. Cheek concluded that psychomotor skills training did have a positive effect on the rhythmic development and self-concept of 4th-grade students.

De Yarman (1972) investigated the effects of rhythmic training on the ability of 221 kindergarten and 1st-grade children to perform songs in simple, mixed, and unusual meters. Intact classes were assigned to an experimental group who received rhythmic training in mixed, unusual, and simple meters, or a control group who received training in simple meters. After the treatment period consisting of three 20-minute weekly sessions during one school year, each subject sang songs with

mixed, unusual, and simple meters and these performances were recorded as a posttest measure. The experimental group significantly outperformed ($p < .05$) the control group, and De Yarmen concluded that training in mixed and unusual meters should be included when teaching songs to kindergarten and 1st-grade students.

McDowell (1974) studied the effects of training on rhythmic skills of 4-year-old children. He randomly selected 36 children from five preschools and placed them in three groups. The experimental group ($n = 12$) received 20 rhythmic training sessions during a one-month period. Control group I ($n = 12$) had stories read to them by the researcher during the same treatment period. Control group II ($n = 12$) received no training or attention from the researcher. McDowell developed a pre-posttest, Rhythmic Ability Test, that measured discrimination of "same" and "different" tempo and rhythmic patterns, reproduction of tempos on a rhythm instrument, and duplication of rhythmic patterns. There were no significant differences between the three groups on posttest scores, and McDowell concluded that rhythmic abilities of 4-year-olds do not improve after one month of training. He recommended that longer periods of training are needed with young children.

Foley (1975) examined training effects for Piaget's theory of conservation with tonal and rhythmic patterns.

Subjects included six intact classes of 2nd-grade children (n = 150). The experimental group consisted of three classes who received ten minutes of rhythmic and tonal conservation training during six 20-minute traditional music sessions. The control group consisted of three classes who participated in 20 minutes of traditional music activities without conservation training during the same treatment period. The posttest measure required subjects to discriminate between "same" and "different" isolated rhythmic and tonal patterns. The experimental group scored significantly higher ($p < .01$) on the posttest than the control group. Foley concluded that as a result of a short training period on rhythmic and tonal conservation skills, significant improvement in these same skills could result with 2nd-grade children.

In a study with second and third graders, Moore (1984) investigated the effects of rhythmic training on rhythmic and musical aptitude. The experimental group (n = 85) received rhythmic training with movement. Control group I (n = 80) received traditional musical training that did not include movement and control group II (n = 90) received no musical training. Treatment for the experimental and control group I covered a 10-week period. Both rhythmic and musical aptitude tests served as the posttest measure. The experimental group scored significantly higher ($p < .05$) on rhythmic aptitude than

control groups I and II. Although the experimental group performed higher on musical aptitude than control groups I and II, this difference did not reach a level of significance. Therefore, Moore concluded that training in rhythmic movement was effective for increasing rhythmic aptitude scores of 2nd- and 3rd-grade children.

In a study focusing on rhythmic achievement, High (1987) examined the effects of rhythmic training in body movement on beat competency performance skills with 100 kindergarten children. She compared an experimental group who received 14 weeks of rhythmic movement training using the Weikart approach to a control group who received 14 weeks of traditional rhythmic training, defined as speaking/singing rhythmic patterns and playing musical instruments. Weikart's (1989) Rhythmic Competency Analysis Test was used as a posttest measure, with the experimental group producing scores significantly higher ($p < .001$) than the control group. High concluded that rhythmic movement instruction was effective for developing beat competency skills with kindergarten children.

Weikart (1989) has conducted extensive research on the effect of rhythmic training on beat competency and developed a movement progression strategy to teach beat perception. Her rhythmic training technique emphasizes the use of a hierarchy of movements with younger children beginning with nonlocomotor tasks and progressing to

integrated movement that includes locomotor tasks. She has supported the premise that this technique positively affects preschoolers' abilities to synchronize their movements with a musical stimulus.

Joseph (1982), in a study using kindergarten children, compared the effect of a traditional music method with the Dalcroze approach on teaching rhythmic competencies and improvisation skills. The experimental design included three groups: group I (n = 20), Dalcroze eurhythmics with vocal and instrumental improvisation; group II (n = 19), Dalcroze eurhythmics without vocal and instrumental improvisation; and group III (n = 18) traditional music training (singing, listening, instrument playing, and moving). The treatment period lasted for one school year. A posttest measure was designed by the researcher to determine musical achievement through imitating and creating "same" and "different" patterns in movement and sound. The subjects were instructed to move to a musical stimulus, sing, and play the piano. The rhythmic competencies measured on a 1-5 Likert-type scale included the ability to maintain a steady beat with a familiar musical stimulus and transfer that ability to an unfamiliar musical stimulus. The two Dalcroze groups scored significantly higher ($p < .007$) for rhythmic competencies than the traditional group. In addition, the Dalcroze eurhythmics group that received vocal and

instrumental improvisation instruction performed significantly higher ($p < .05$) than the Dalcroze group that did not receive improvisation training and the traditional music group in the utilization of patterns when freely improvising on a set of bells. Joseph recommended that Dalcroze eurhythmics with improvisation be included in early childhood music instruction.

Evidence of rhythmic training strategies and factors relating to the teaching of beat competency have been examined by numerous researchers. These studies generally reinforce the premise that rhythmic competency can be developed and instruction in fundamental rhythmic skills is an essential foundation for music learning.

Effects of Age

Groves (1969) studied the effects of training and motor ability on rhythmic skills of 131 children in grades one through three. All subjects were assigned randomly to experimental and control groups. Treatment for the experimental group consisted of two 30-minute sessions for 24 weeks and emphasized training in rhythmic patterns as presented on the pre- and posttests. The control group received no rhythmic training. The pre-posttest was designed by the investigator and measured rhythmic-synchronization ability and overt rhythmic pattern responses. Groves found no significant difference

between the experimental and control groups' synchronization skill scores; however, age and motor ability were found to be significant factors ($p < .01$) in primary-aged children's abilities to synchronize body movements with a rhythmic stimulus. Thus, Groves concluded that age was a significant factor in the development of beat competency skills.

Blatt (1964) examined 5- to 12-year-old children's spontaneous rhythmic responses to musical and rhythmic stimuli. He placed all subjects in four groups by age: group I, ages 5-6; group II, ages 7-8; group III, ages 9-10; and group IV, ages 11-12. Each subject was videotape recorded and rated on the type and duration of their spontaneous rhythmic response. Significant differences ($p = .01$) between each age group were found, and diminished spontaneous rhythmic movement was observed with each age level. Based on the results regarding diminished rhythmic responses with maturation, Blatt recommended that movement training be included in music education curricula for age levels represented in the study.

Frega (1979) studied the effect of age on 3-, 4-, and 5-year-old children's ability to synchronize body movements with a musical stimulus and discriminate/perform rhythm patterns. She randomly selected 45 children and placed them in three different classes for each age level

(n = 15). All students received musical training during one school year and were tested at the end of that year. She found that 4-year-old children who had received two years of musical training did not outperform 4-year-old children who had only received one year of musical training. Based on this finding, Frega concluded that age, not training, was a primary factor for rhythmic development in 4-year-old children.

Gilbert (1980) conducted a study on the motor music skill development of 808 children 3-6-years old. According to Gilbert, motoric music skills were defined as motor pattern coordination, eye-hand coordination, speed of movement, range of movement, and compound factors (combinations of all skills). These skills were measured by the Motoric Music Skills Test which was administered individually to all subjects. Mean performance scores for all skills significantly increased ($p < .001$) with each age level, and Gilbert concluded that age was a significant factor in motoric music skill development.

Petzold (1963) examined the differences between 1st-6th-grade children's responses to auditory presentations of tonal patterns. Included in this study was a subgroup formed across all six grade levels (n = 165) and tested on responses to auditory presentations of combined tonal and rhythmic patterns. For this test, subjects were asked to sing a response which matched the

tonal/rhythmic pattern presented. All responses were tape-recorded and evaluated. From an analysis of the data covering all six grades, Petzold found a significant difference ($p < .05$) only between means in grades 5 and 6. He did, however, find that mean scores increased with each successive grade level, with the exception of grades two and three. From these results, Petzold concluded that in the absence of training, age was not a significant factor in tonal/rhythmic auditory discrimination skills of 1st-5th-grade children.

In summary, Groves (1969), Gilbert (1980), Blatt (1964), and Frega (1979) concluded that age was a significant factor in rhythmic skills development of young children. However, Petzold found that in the absence of training, age was not a significant factor in the development of tonal/rhythmic auditory discrimination skills with 1st-5th-grade children. It is evident from the many research disparities, that conflicts still exist in the research literature regarding the effects of age and training on the development of fundamental rhythmic skills in young children. Yet, most early childhood music education curricula emphasize rhythmic training with young children, indicating that rhythmic learning is not entirely dependent on maturation. According to Radocy and Boyle (1988) skill attainment through maturation is not learning, which presents fundamental questions regarding

the validity of skill development as a result of maturation. Additional research is needed to help educators better understand the relationships of teaching strategies to rhythmic skill development in early childhood music education.

Effects of Gender

Many researchers have studied the effect of gender on young children's rhythmic perception and performance skills. Some researchers have concluded that gender is not an influential factor, while others have found gender to be a significant and contributing factor in the development of fundamental rhythmic skills. Gender effects reported in the literature are not consistent across rhythmic tasks performed, thus indicating further discrepancies in the research literature.

Gilbert (1980) found that females significantly outperformed ($p < .001$) males on three subtests of the Motor Music Skills Test: motor pattern, eye-hand, and compound factors. Performance scores for males were higher than females on the range and speed subtests, but did not reach a significant level. As a result of these analyses, Gilbert concluded that differences exist between females and males on rhythmic performance tasks. Schleuter and Schleuter (1989) conducted a study with 212 kindergarten, 1st-, 2nd-, and 3rd-grade children and

concluded that girls significantly outperformed ($p < .05$) boys in one of two schools on chanting, clapping, and stepping rhythmic patterns as measured by the Rhythm Response Test. In an earlier study, Schleuter and Schleuter (1985) discovered that primary-aged males generally did not demonstrate rhythmic achievement of chanting, clapping, and stepping as accurately as females of similar ages, thus reinforcing their 1989 study.

Flohr (1991) measured kindergarten children's ability to perform a steady beat using an adaptation Weikart's (1989) Rhythmic Competency Analysis Test (RCAT) and discovered that girls significantly outperformed boys ($p < .05$). Weikart (1987) conducted a study on beat competency performance skills of primary-aged children and concluded that males experienced more difficulty than females during beat competency performance as measured by the RCAT. Smoll (1975) conducted a study assessing the space-time characteristics of children's motor responses to auditory stimuli with subjects ages 5-11 years. He found no significant differences in rhythmic performances between males and females. In research studies previously mentioned, Groves (1969), Gardner (1971), High (1987) and Moore (1974) assessed gender differences in relation to rhythmic development of primary-aged children and found no significant effect of gender on these skills.

In summary, Gilbert, Scleuter and Schleuter, Flohr, and Weikart found that females outperformed males on selected rhythmic tasks. However, Groves, Smoll, Gardner, and High assessed gender differences in relation to rhythmic development of primary-aged children and found no significant difference attributed to gender. Although there are discrepancies in the literature regarding the effect of gender on rhythmic skill development, the research literature lends support to the premise that females outperform males on some rhythmic tasks.

Effects of Tempo

Many researchers have studied the effect of tempo on rhythmic performance tasks of young children and generally agree that it is a contributing factor influencing accurate rhythmic performance. Denckla (1973) and Maxwell (1981) studied the speed at which children tap in absence of a musical stimulus. From the results of these two separate studies, they concluded that tapping speed increases from the preschool level (2.2 to 2.6 taps per second) through grade 10 (between 6.5 and 7.3 taps per second). Smoll's (1975) research findings contradict Denckla (1973) and Maxwell's (1981) results regarding tempo increases with age. Smoll (1975) found that there was no significant difference between age and tempo accuracy of 6- to 11-year-old children. However, Maxwell

(1981) reported that motor task affected tempo and concluded that slower tapping speeds were associated with greater degrees of lateral asymmetry. Other research supports the premise that older children's tapping movements are smoother and more continuous when compared to those of younger children (Kerr, 1975; Ruffer, Grpenthin, Huey, & Patterson, 1985).

Researchers have found that preschool children's synchronous tapping, (simultaneous tapping with a periodic stimulus), is more accurate at faster tempos (120 to 186 taps per minute or 2.0 to 3.1 taps per second) than at slower tempos (60 to 90 taps per minute or 1.0 to 1.5 taps per second) (Petzold, 1969; Williams, Sievers, & Hattwick, 1933). McDowell (1974) reported that the faster a rhythmic pattern was presented, between 60 to 130 beats per minute, the easier it was for preschool children to reproduce accurately.

Walters (1983) discovered that when primary-aged children synchronized their movements with music, they achieved their highest mean scores on Froseth's Primary Measure of Kinesthetic Response to Tempo in Music, when the tempo was nearest their own personal tempo which ranged from 40mm to 120mm. Flohr (1991) defined personal tempo as an individual's tempo which is spontaneously initiated while maintaining a steady beat, e.g., clapping, but in the absence of a musical stimulus. When studying

kindergarten children's ability to perform a steady beat, Flohr (1991) concurred with Walters' findings and concluded that kindergarten children performed best at their personal tempo, which ranged from 102mm to 208mm. He also found that the ability to keep a steady beat is positively correlated with personal tempo.

Atterbury (1983) examined the performance tempos of "learning disabled" children and found that they perform better at slower speeds (approximately 60 taps per minute) than at faster speeds (120 taps per minute). According to Atterbury, this finding should alert music educators to use slower tempos with "learning disabled" children in the classroom.

In summary, the researchers surveyed have generally concluded that children, ages 4-11 years, perform rhythmic tasks more successfully at faster tempos, 120mm, than at slower tempos, 60mm. By Flohr and Walters conclusions the premise that primary-aged children are more successful when performing rhythmic tasks nearest their own personal tempos is substantiated.

Relevancy of Research Findings to the Current Study

Kindergarten, 1st-, and 2nd-grade children served as subjects for the current study. The research literature presented in this chapter supports the

assumption that physiological development of primary-aged children is at a level sufficient for rhythmic training, and that this age is an optimal time for musical growth. Researchers also suggest that early musical intervention maximizes musical achievement prior to nine years of age.

Beat competency is identified as being of primary importance in the early music education curriculum and as a fundamental skill necessary for future development of more complex rhythmic skills in children (Gordon, 1979; Choksy et al., 1986; Dalcroze, 1921; and Weikart, 1989). The Weikart and Dalcroze approaches include beat competency as a primary objective with younger children (Weikart, 1989, Dalcroze, 1921). Training, gender, age, and tempo were all factors present in the literature showing significant effect on beat competency performance of primary-aged children; however, there were many inconsistencies in the research literature regarding these factors, indicating that more research is needed to verify and supplement current research findings.

One of the primary goals of the Music Educators National Conference is to ensure that young children enjoy and understand music, and because of this understanding, will continue to use music throughout their adult lives (National Commission for Music Education, 1991). Progress in substantiating effective teaching strategies with young

children may lead music educators closer to achieving this prominent long-term goal.

CHAPTER III

PROCEDURES

Introduction

The purpose of this study was to examine the effects of Dalcroze eurhythmics instruction on beat competency performance skills of kindergarten, 1st-, and 2nd-grade children. Beat competency was operationally defined as the ability to maintain a steady beat through synchronization of bodily movements with a musical stimulus. The independent variables of instruction, gender, and grade level were examined in relation to the dependent variable, beat competency performance skills. Additional research objectives included identification of any relationship between selected rhythmic activities and performance tempos on beat competency performance mastery levels. Beat competency performance was measured by Flohr's (1991) Rhythmic Movement Analysis Test (RMAT). A pretest-posttest control group served as the design for this study.

Subjects

Subjects for the current study included six intact classes of kindergarten, 1st-, and 2nd-grade children from

two public schools in Watauga County, North Carolina. Schools initially were defined as units, regardless of grade, and were selected primarily on the basis of student homogeneity, researcher proximity, and convenience. To ensure student homogeneity, schools within a reasonable geographic range were matched on enrollment (approximately 500 kindergarten-8th-grade students), location (defined as "rural"), and faculty-to-student ratio. The school proximity factor was important so the researcher could serve as the Dalcroze teacher for the experimental group and traditional music teacher for the control group. After the selection of schools, subject profiles received additional scrutiny including individual record reviews, to identify any possible factors that would jeopardize the ability to administer the treatment and obtain valid results. This examination revealed that subjects displayed no physical handicaps and none were diagnosed with "learning" or "emotional" disabilities.

After determining that potential contamination in the selection procedure had satisfactorily been accounted for, the instructional methods were assigned randomly to the schools. The experimental group (n = 65) included kindergarten, 1st-, and 2nd-grade intact classes from one school, and the control group (n = 61) consisted of kindergarten, 1st-, and 2nd-grade intact classes from the other school. Treatment consisted of the experimental

group receiving Dalcroze eurhythmics instruction and the control group receiving traditional music instruction. Although subject attrition occurred throughout the treatment period due to subjects leaving Watauga County or being transferred to other classes, this change was not of a magnitude to warrant substantial sample adjustment. A profile distribution of male and female subjects by grade level and instructional groups is presented in Table 1 and reflects subject numbers at the end of the treatment period.

Table 1

Subject Profile

	Traditional		Dalcroze		
	Male	Female	Male	Female	Totals
Kindergarten	9	6	11	10	36
Grade 1	6	14	10	11	41
Grade 2	12	14	12	11	49
	27	34	33	32	
Total	61		65		126

Permission to conduct the study was secured from principals and music specialists of the participating

schools, the parents of each subject, the Watauga County Board of Education Research Committee, and The Appalachian State University Graduate Research Committee (see Appendix A for letters of consent).

Treatment

Music Instruction

The experimental and control groups each attended two 30-minute music classes per week during a 32-week treatment period. Instruction was provided by three teachers; the researcher, a Dalcroze and State of North Carolina certified music specialist, and each school's music teacher, both State of North Carolina certified music specialists. The experimental classes received one period of Dalcroze instruction and one period of traditional instruction per week, the former taught by the researcher and the latter taught by the school's music specialist. The control classes received identical instruction except, in place of Dalcroze instruction, the researcher taught a traditional music lesson (see Table 2).

Table 2

Schematic of Instruction Schedule for One Week

	Dalcroze Eurhythmics Experimental School		Traditional Music Control School	
Grade	Researcher	Specialist 1	Researcher	Specialist 2
K	Day 1	Day 2	Day 3	Day 4
1	Day 1	Day 2	Day 3	Day 4
2	Day 1	Day 2	Day 3	Day 4

Intervention for both the experimental and control groups consisted of one music class per week taught by the researcher; the other music class was taught by each school's music specialist and remained constant for both groups regarding curricular content and instruction. Traditional music instruction was defined as participation in instrument playing, creative movement, guided listening, dancing, and singing activities. Chapter I provides a complete explanation of Dalcroze eurhythmics instruction.

The core instruction for all classes was structured on grade-level music objectives from the North Carolina Basic Education Plan (BEP) (1985), which is a state-mandated curriculum. To control for possible curricular deviations, the same BEP music objectives and

time allocated for each objective were documented carefully within each instructional group thus, ensuring control over curricular content for subjects across grade levels and instructional groups. This procedure was employed specifically to keep contamination to a minimum. Music instruction and content had been standardized in Watauga County for five years preceding the study; therefore, most subjects had received the same music curricular content on an incremental basis as specified by grade level. (See Appendix B for curricular content objectives for each grade level and instructional group and Appendix C for representative lesson plans comparing instruction between the experimental and control groups.)

Both treatment groups attended the same number of instructional sessions, and all music classes were held between 1:00-2:45 p.m. A pretest was administered during the first week of school, and a posttest was administered during the last four weeks of school.

Data Collection and Analysis

Pretest

A pretest was designed by the researcher to evaluate subjects' entrance level beat competency performance skills in order to identify pretreatment differences between instructional groups that could have affected the response to treatment and, subsequently, the

results. It was not feasible to administer an individual pretest to each subject; therefore, a group pretest that could be administered to an entire class was developed. Prior to developing the pretest, the researcher surveyed the literature and constructed a pretest procedure similar to that found in Weikart's (1989) Beat Coordination Screening Test. Weikart's group test evaluates individual beat competency skills and is designed to be administered to an entire class. Although test administration procedures in the researcher-designed pretest were similar to those found in the Weikart test, the researcher varied the Weikart criterion measure for evaluation. A 0-5 Likert-type criterion scale was developed by the researcher similar to a measure developed by Rainbow (1981) which evaluated beat competency performance skills of children ages 3-4 years. In order to verify and supplement Rainbow's (1981) 1-5 Likert-type criterion scale, the researcher observed various classes of kindergarten-2nd-grade children as they attempted to clap a steady beat with a musical stimulus. The researcher listed observed behaviors related to rhythmic performance during the activities and subsequently categorized the principal behaviors into the following 0-5 Likert-type responses, which served as a steady beat criterion scale for the researcher-designed pretest.

0 - off-task, no response

1 - inconsistent beat, not with musical stimulus

2 - consistent beat, not with musical stimulus

3 - combination of consistent and inconsistent beat

4 - consistent beat with musical stimulus 50% during 32 beats of observation

5 - consistent beat with musical stimulus 100% during 32 beats of observation

The group pretest was administered to each intact class during the first week of school. For this test, each of the six classes representing both instructional groups was video tape recorded while subjects attempted to maintain a steady beat by clapping with the recorded musical stimulus, "O'Keefe Slide/Kerry Slide" from Weikart's (1989) Rhythmically Moving One (CD 1,11), presented with a tempo marking of 120mm. The tempo marking of 120mm was selected based on Flohr's (1991) findings indicating that the tempo marking of 120mm facilitated beat competency performance in young children when compared to the tempo marking of 100mm. The pretest was administered by the researcher who instructed each class: "Listen to the music and find the steady beat in your hands." The researcher then modeled eight consecutive steady beats with the recording and video tape recorded the class attempting to clap the steady beat for the duration of the musical selection.

To obtain individual beat competency scores, two certified music specialists viewed the video tape recording of each class multiple times and independently rated each subject on the 0-5 Likert-type criterion scale during 32 beats of beat competency performance. Flohr (1991) justified the observation of 32 beats as sufficient duration for evaluating beat competency.

After combining pretest scores across all kindergarten-2nd-grade classes for each music specialist, the mean and standard deviation for each music specialist were computed and interrater reliability estimates were derived using Cronbach's coefficient alpha (Boyle and Radocy, 1987). Individual subject beat competency pretest scores were then grouped into the three independent variables and subjected to a 2 (instructional treatment) by 2 (gender) by 3 (grade level) analysis of variance (ANOVA) in order to assess pretreatment differences between instructional groups.

Posttest

Following 32 weeks of instruction, all subjects were individually administered Flohr's (1991) Rhythmic Movement Analysis Test (RMAT), an adaptation of Weikart's (1989) Rhythmic Competency Analysis Test designed to measure beat competency performance skills. The RMAT posttest was administered to all subjects between

1:00-2:45 p.m. The following procedural explanation describes the RMAT and includes standardized testing procedures for its administration as defined by Flohr (1991).

During administration of the RMAT, each subject performed five different rhythmic activities at the tempos of 120mm, 130mm, 140mm, and "personal tempo," the latter defined by Flohr (1991) as an individual's tempo spontaneously initiated while maintaining a steady beat. Subjects were rated as either beat competent "mastery" or "nonmastery" for each activity at each tempo. The five RMAT rhythmic activities included "patschen" (patting hands on both legs), pat/clapping, playing rhythm sticks, walking in place, and marching. In order to assess beat competency mastery at the tempos of 120mm, 130mm, and 140mm, three instrumental musical recordings corresponding to each of the RMAT tempos were selected from Weikart's (1983) Rhythmically Moving One, (120mm = "O'Keefe Slide/Kerry Slide" [CD 1,11]; 130mm = "Joe Clark Mixer" [CD 1,12]; 140mm = "All the Way to Galway" [CD 1,1]). Of the four RMAT tempo categories, the personal tempo section was administered first to prevent subjects' responses from being influenced by previous tempos. The three tempos of 120mm, 130mm, and 140mm were presented randomly during testing to control for order effect of tempo.

According to Flohr's (1991) RMAT testing producers, during administration of the personal tempo section, the researcher instructed each subject: "Pat your hands as fast or slow as you wish, and I will make my autoharp stay with you." After the subject initiated the beat for each activity, the researcher played an autoharp with the established beat for approximately 32 beats and subsequently recorded each subject's personal tempo with the use of a metronome. All RMAT responses were video tape recorded with a JVC PC-X105 Video Tape Recorder and Maxwell HGX-GOLD 120 videocassettes. A Panasonic 185 Pro Line CD player was used during posttest administration to play the musical selections and identical CD recordings were used with both instructional groups.

Posttest scoring. After administration of the RMAT posttest, the researcher evaluated each subject's RMAT responses from the video tape recording. According to Flohr's (1991) RMAT standardized individual testing procedures, the researcher marked RMAT scoring sheets for each subject as either mastery (1) or nonmastery (0) for each activity at each tempo. There were four separate categories on the RMAT, one for each tempo and one possible mastery point for each of the five activities. Mastery of all five activities at all four tempos resulted in a score of 20, with the possible score for each subject ranging from 0-20 (see Appendix D for RMAT scoring

sheets). Criteria for mastery consisted of a subject's ability to maintain a steady beat for eight consecutive beats. Performance of 32 beats was considered adequate for attaining mastery (Flohr, 1991).

Posttest analysis. A 2 (instructional treatment) by 2 (gender) by 3 (grade level) factorial analysis of covariance (ANCOVA) with pretest scores serving as a covariate was used to analyze posttest data. The ANCOVA analysis of the data was necessary because of significant differences that existed between instructional groups as revealed by the pretest ANOVA. Data were further subjected to descriptive analyses to assess relationships between the five posttest RMAT rhythmic activities and four tempos on beat competency performance mastery levels.

Viewing and rating 126 subjects' RMAT responses for purposes of establishing reliability estimates on the researcher's evaluation of posttest RMAT scores was not feasible. Instead, two North Carolina certified music specialists evaluated 25% of the subjects' randomly selected videotaped RMAT posttests (n = 30). Means and standard deviations between the two specialists' and the researcher's responses for the 30 selected subjects were compared, and interrater reliability estimates were derived using Cronbach's coefficient alpha (Boyle and Radocy, 1987).

CHAPTER IV

RESULTS

Introduction

The purpose of this study was to determine if Dalcroze eurhythmics instruction had a significant effect on beat competency performance skills of kindergarten, 1st-, and 2nd-grade children when compared to traditional music instruction (n = 126). The principal null hypothesis was stated as follows: There is no significant difference between the beat competency performance skill posttest means of kindergarten-2nd-grade children who receive Dalcroze eurhythmics instruction and kindergarten-2nd-grade children who receive traditional music instruction. Secondary research hypotheses were: 1) There is no significant difference between the beat competency performance skill posttest means attributed to gender, and 2) there is no significant difference between the beat competency performance skill posttest means attributed to grade level. Additional research objectives included the identification of relationships between selected rhythmic activities and performance tempos on beat competency performance mastery levels.

The experimental group included kindergarten, 1st-, and 2nd-grade intact classes from one school (n = 65), and the control group consisted of kindergarten, 1st-, and 2nd-grade intact classes from a different school (n = 61) (see Table 1, Chapter III, for subject profile distribution). Treatment consisted of the experimental group receiving Dalcroze eurhythmics instruction and the control group receiving traditional music instruction. To examine the principal research objective of treatment effect, both groups received the respective instruction for 32 weeks and were tested on beat competency performance skills at the end of the instructional period.

In order to evaluate both instructional groups for inequality of entrance level beat competency skills, a group pretest was administered during the first week of school, and the pretest beat competency scores were subjected to an analysis of variance (ANOVA). Following the 32-week treatment period, all subjects were individually administered Flohr's (1991) Rhythmic Movement Analysis Test (RMAT), which was designed to measure beat competency performance skills. Interrater reliability measures were estimated on both the pretest and posttest using Cronbach's coefficient alpha (Boyle and Radocy, 1987).

After establishing the need for covariance procedures on the posttest data, the principal null

hypothesis regarding the effect of instruction on beat competency performance skills was tested with an analysis of covariance (ANCOVA) using the subjects' beat competency pretest scores as the covariate. The secondary null hypotheses regarding effects of gender and grade level on beat competency performance skills also were tested using the posttest ANCOVA. Descriptive data from the posttest RMAT were analyzed to identify relationships between the five selected RMAT rhythmic activities and four tempos on beat competency performance mastery levels

Treatment of the data for the pretest and posttest was conducted at Appalachian State University employing procedures from the Statistical Package for the Social Sciences (1990). An alpha level was set at .05 for all statistical analyses.

Pretest Data Analysis

The purpose of the pretest was to evaluate pretreatment differences between instructional groups. The pretest was administered to each intact class during the first week of school. For this test, each of the six classes representing both instructional groups was video tape recorded while subjects attempted to maintain a steady beat by clapping with a recorded musical stimulus. The pretest was administrated by the researcher who instructed each class: "Listen to the music and find the

steady beat in your hands." The researcher modeled eight consecutive steady beats with the musical stimulus, then video tape recorded the class attempting to clap the steady beat for the duration of the musical selection.

To obtain individual pretest beat competency scores, two certified music specialists viewed the video tape recording of each class multiple times and independently rated each subject during 32 beats of beat competency performance. Flohr (1991) justified the observation of 32 beats as sufficient duration for determining beat competency. Subject pretest scores were rated on a Likert-type criterion scale ranging from 0 (off task) to 5 (100% maintenance of a steady beat during 32 beats of observation).

After combining pretest scores across all kindergarten-2nd-grade classes for each music specialist, the mean and standard deviation for each adjudicator were computed and interrater reliability estimates were derived using Cronbach's coefficient alpha (Boyle and Radocy, 1987). The resulting coefficient was estimated at .93. Boyle and Radocy (1987) concluded that although there is no universally recognized minimum acceptable reliability, an estimate of .92 or above is considered reliable; therefore, the reliability coefficient of .93 was regarded as acceptable for the current study. Table 3 presents each adjudicator's cumulative pretest mean and standard

deviation collapsed across all classes as well as Cronbach's coefficient alpha reliability estimate.

Table 3

Adjudicators' Pretest Means, Standard Deviations, and Cronbach's Coefficient Alpha Reliability Estimate

Adjudicator	N	Mean	SD	Cronbach's Coefficient Reliability
Adjudicator 1	126	3.0316	1.4836	.9305
Adjudicator 2	126	2.7579	1.3426	

After the establishment of acceptable reliability, individual pretest scores ranging from 0-5 were then grouped into the three independent variables and subjected to a 2 (instructional treatment) by 2 (gender) by 3 (grade level) analysis of variance (ANOVA). This analysis revealed a significant difference ($p < .05$) for the effects of treatment, gender, and grade level on the pretest. There were no significant 2-way or 3-way interactions (see Table 4).

Table 4

Pretest 2 x 2 x 3 Analysis of Variance for Treatment, Gender, and Grade

Source	df	Sum of Squares	Mean Square	F	p
Main Effects					
Treatment(A)	1	20.689	20.689	12.971	.001*
Gender (B)	1	15.658	15.658	9.817	.002*
Grade (C)	2	33.284	16.642	10.434	.001*
2-Way Interaction					
A x B	1	.592	.592	.371	.544
A x C	2	5.272	2.636	1.653	.196
B x C	2	2.775	1.388	.870	.422
3-Way Interaction					
A x B x C	2	5.324	2.662	1.669	.193
Error	114	181.824	1.595		

*$p < .05$

The traditional group scored significantly higher, $F(1,114) = 12.98$, $p = .001$, than the Dalcroze group on the pretest; females scored significantly higher, $F(1,114) = 9.81$, $p = .002$, than males; and a significant difference, $F(2,114) = 10.43$, $p = .001$, was found between grade levels on the pretest. Table 5 presents the pretest means for instructional groups, gender, and grade levels and

demonstrates pretest mean improvement with each successive grade level.

Table 5

Pretest Means by Treatment, Gender, and Grade

Main Effects	Mean
Traditional	3.52
Dalcroze	2.57
Males	2.58
Females	3.44
Kindergarten	2.58
Grade 1	3.32
Grade 2	3.47

While the F ratios in Table 4 show a significant difference between pretest beat competency scores attributed to instructional groups, gender, and grade level, limited objective information was available indicating sources contributing to these variances. It may be assumed that the significant differences between instructional groups could be attributed to the individual beat stability abilities subjects had developed throughout their lifetime. The difference for gender could only be explained by a broad generalization that males and females at those ages differ in many ways resulting from innate, experiential, and autochthonous factors. The differences in the grade level variable was assumed, at least in part,

to be a result of maturation and experience. Other factors that may account for differences in scores primarily center on testing behaviors and environmental conditions during testing. For example, the Dalcroze group had five occurrences of off-task behavior on the pretest while the traditional group had only one. These behaviors may have been a result of factors such as school environment, classroom management procedures, student attitude, and individual teacher-student interaction. Following the ANOVA interpretations, and a thorough, but admittedly subjective, study of the possible contributors to the differences in pretest results, an analysis of the posttest data adjusted for pre-treatment differences was justified. Therefore, an analysis of covariance was used to analyze the beat competency data derived from the posttest with the beat competency pretest scores serving as a covariate.

Posttest Data Analysis

Principal Research Objective

The principal purpose of this study was to determine if Dalcroze eurhythmics instruction had a significant effect on beat competency performance skills of kindergarten, 1st-, and 2nd-grade children when compared to traditional musical instruction. The null hypothesis is stated: There is no significant difference

($p < .05$) between the beat competency performance skill posttest means of kindergarten-2nd-grade children who receive Dalcroze eurhythmics instruction and kindergarten-2nd-grade children who receive traditional musical instruction.

Posttest Procedure

After 32 weeks of instruction, Flohr's (1991) Rhythmic Movement Analysis Test (RMAT), designed to measure beat competency performance, was administered to each subject individually as a posttest during the last four weeks of the study. According to Flohr's standardized procedures for RMAT administration, each subject performed five different rhythmic activities at the tempos of 120mm, 130mm, 140mm, and "personal tempo," the latter which Flohr (1991) defined as an individual's tempo spontaneously initiated while maintaining a steady beat. Subjects were rated as either beat competent "mastery" or "nonmastery" for each activity at each tempo. The five RMAT rhythmic activities included patchen (patting both hands), pat/clapping, playing rhythm sticks, walking in place, and marching. In order to assess beat competency mastery at the tempos of 120mm, 130mm, and 140mm, three instrumental recordings were selected from Weikart's (1983) Rhythmically Moving One that corresponded to each of the RMAT tempos. Of the four tempo categories,

the personal tempo section was administered first to prevent subjects' responses from being influenced by previous tempos. The three tempos of 120mm, 130mm, and 140mm were presented randomly during testing to control for order effect of tempo. The researcher administered the posttest, and all responses were video tape recorded.

After administration of the RMAT, the researcher viewed the video tape recording and evaluated each subject's RMAT responses. Following Flohr's (1991) standardized RMAT testing procedures, the researcher marked scoring sheets as either mastery (1) or nonmastery (0) for each activity at each tempo. Criteria for mastery consisted of a subject's ability to maintain a steady beat for 8 consecutive beats. Performance of 32 beats was considered adequate duration for attaining mastery (Flohr, 1991). There were four separate categories on the RMAT, one for each tempo and one possible mastery point for each of the five activities. Mastery of all five activities at all four tempos resulted in a score of 20, with the possible score for each subject ranging from 0-20. While viewing the personal tempo section of the RMAT for each subject, the researcher evaluated subject's individual performance tempo using a metronome and subsequently recorded the personal tempo on RMAT scoring sheets (see Appendix D for RMAT scoring sheets).

Viewing and rating 126 subjects' RMAT responses for the purposes of establishing reliability estimates on the researcher's evaluation of posttest RMAT scores was not feasible. Instead, two North Carolina certified music specialists evaluated 25% of subjects' randomly selected video taped posttest responses (n = 30). After summing the scores of the 30 subjects for the researcher and two specialists, the mean and standard deviation for all three were computed and interrater reliability estimates were derived using Cronbach's coefficient alpha (Boyle and Radocy, 1987). The resulting reliability coefficient was estimated at .99 which was considered highly reliable. Table 6 presents the researcher's and two music specialists' cumulative posttest means, standard deviations, and Cronbach's alpha reliability estimate.

Table 6

Researcher's and Adjudicators' Posttest Means, Standard Deviations, and Cronbach's Coefficient Reliability Estimate

Adjudicator Coefficient	n	Mean	SD	Cronbach's Reliability
Researcher	30	14.6	6.60	.9913
Adjudicator 1	30	14.0	6.61	
Adjudicator 2	30	13.9	6.35	

Posttest Analysis and Results

Principal Research Objective

After the establishment a reliability measure, individual posttest scores ranging from 0-20 were then grouped into the three independent variables and subjected to a 2 (instructional treatment) by 2 (gender) by 3 (grade level) ANCOVA with pretest beat competency scores serving as the covariate. The ANCOVA analysis for instructional groups collapsed across gender and grade level resulted in a significant difference between the adjusted posttest RMAT means. The Dalcroze instruction group scored significantly higher, $F(1, 113) = 23.57$, $p = .001$, than the traditional instruction group on the posttest RMAT and, as a result of this difference, the primary null hypothesis was rejected. The treatment effect was significant and in favor of the Dalcroze instruction group. There were no significant 2-way or 3-way interactions on the posttest ANCOVA. Results of the 3-way ANCOVA are presented in Table 7. Adjusted posttest RMAT means for each instruction group are presented in Table 8.

Table 7

Posttest RMAT 2 x 2 x 3 Analysis of Covariance

For Treatment, Gender, and Grade

Source	df	Sum of Squares	Mean Square	F	p
Main effects					
Treatment(A)	1	350.860	350.860	23.570	.001*
Gender (B)	1	19.210	19.210	1.290	.260
Grade (C)	1	79.980	39.990	2.690	.070
2-Way Interactions					
A x B	1	38.42	38.42	2.58	.111
A x C	2	65.48	32.74	2.20	.116
B x C	2	3.96	1.98	.13	.876
3-Way Interaction					
A x B x C	2	6.38	3.19	.21	.808
Error	113	1681.64	14.36		

*p < .05

Table 8

Adjusted Posttest RMAT Means and Standard Deviations For Instruction

Instruction	n	Mean	SD
Dalcroze	65	12.77	5.56
Traditional	61	11.62	5.26

Secondary Research Objectives - Main Effects

In addition to determining the effect of instruction on beat competency performance skills, the following questions were considered.

1. Is there a significant difference between beat competency performance skill measures attributed to gender?
2. Is there a significant difference between beat competency performance skill measures attributed to grade level?

Gender Collapsed Across Treatment and Grade Level. The 3-way ANCOVA analysis between gender collapsed across grade level and instructional groups resulted in no significant difference between male and female adjusted posttest RMAT means (Table 7). While gender did not contribute to significant differences in beat competency performance skills, it is noted that the adjusted posttest

RMAT mean for females was higher than the mean for males (Table 9).

Table 9

Adjusted Posttest RMAT Means and Standard Deviations For Gender

Gender	n	Mean	SD
Males	60	10.78	5.33
Females	66	13.51	5.23

Grade Level Collapsed Across Treatment and Gender. The ANCOVA analysis for grade level revealed no significant differences between adjusted posttest RMAT means (See Table 7). Therefore, the independent variable of grade level did not have a significant effect on beat competency performance skills. Although adjusted posttest RMAT means were higher for each successive grade level, which was expected, teaching/learning cannot be eliminated as variables affecting improvement. The adjusted posttest RMAT mean and standard deviation for each grade level is presented in Table 10.

Table 10

Adjusted Posttest RMAT Means and Standard Deviations For Grade Levels

Grade	n	Mean	SD
Kindergarten	36	9.05	4.58
Grade 1	41	12.85	5.55
Grade 2	49	14.00	4.98

Additional Secondary Research Objectives

1. Is there a relationship between the five selected RMAT rhythmic activities and beat competency performance mastery levels?
2. Is there a relationship between the four RMAT tempos and beat competency performance mastery levels?

Descriptive Analysis of RMAT Rhythm Activities and Performance Tempos. Additional descriptive analyses were performed on the posttest RMAT data for the five selected rhythm activities and four performance tempos. Table 11 reveals percentages of the entire population's mastery level attainment for each of the five RMAT activities performed at the four RMAT tempos collapsed across treatment, gender, and grade level. Results obtained from

these analyses generated information that augmented the principal research objective while also producing substantial findings warranting further research.

Table 11

Percentages of Subjects' Mastery Attainment On Five Selected Beat Competency Performance Activities And Four Tempos on the Posttest RMAT

Activity	Tempo			
	PT	120	130	140
Pat Both Hands	99%	73%	68%	59%
Walk in Place	95%	60%	44%	37%
Play Rhythm Sticks	94%	60%	53%	39%
March	92%	52%	39%	27%
Pat/Clap	89%	52%	47%	35%

Results presented in Table 11 reveal that the ability to perform a steady beat is influenced by the type of rhythm activity and performance tempo. For example, for all tempos the subjects generally had higher percentages of mastery levels when patting both hands, playing rhythm sticks, and walking in place. Lower percentage mastery levels were associated with marching and patting/clapping. Table 11 also shows that subjects demonstrated higher percentage mastery levels when

maintaining a steady beat during the five selected RMAT activities at their personal tempo.

To further substantiate the influence of the five selected RMAT rhythm activities on mastery level attainment, Table 12 presents means and standard deviations for each of the five selected RMAT rhythm activities collapsed across tempo, instruction, gender, and grade level. These results objectively support the results produced from the previously-cited percentages and revealed that all subjects obtained higher mastery levels when patting both hands, playing rhythm sticks, and walking in place. Lower mastery levels were associated with pat/clapping and marching.

Table 12

Means and Standard Deviations For Posttest RMAT Rhythm Activities

Activity	Mean	SD
Pat Both Hands	2.9921	1.2033
Play Sticks	2.4524	1.3541
Walk in place	2.3730	1.2945
Pat/Clap	2.2222	1.4582
March	2.1746	1.1599

Table 13 presents means and standard deviations for each posttest RMAT performance tempo collapsed across rhythmic activity, instruction, gender, and grade level. These data reveals that all subjects attained highest mastery levels when performing a steady beat during the five selected RMAT activities at their personal tempo as compared to the established tempos of 120, 130mm and 140mm. Additional descriptive analysis revealed that the mean personal tempo across the entire population was 119.7mm, with a range of 76mm - 144mm and standard deviation of 10.749.

Table 13

Means and Standard Deviations for Posttest RMAT Tempos

Tempo	Mean	SD
PT	4.762	.674
120	2.968	1.893
130	2.516	1.866
140	1.968	1.828

Table 14 presents RMAT mastery level percentages for gender collapsed across grade level, instruction, rhythm activity, and tempo, and for grade level collapsed across gender, instruction, rhythm activity, and tempo.

Although the posttest ANCOVA analysis revealed no significant differences on beat competency performance scores attributed to gender and grade level, Table 14 shows that females demonstrated higher mastery percentage levels on the RMAT than males, and that mastery levels were higher for each successive grade level on the posttest RMAT.

Table 14

MAT Mastery Percentages for Gender and Grade Level

Gender	RMAT Mastery Percentage
male	47.6%
female	52.4%
Grade Level	
Kindergarten	28.6%
Grade 1	32.5%
Grade 2	38.9%

Summary

The results of the final statistical analyses presented in Chapter IV are summarized below.

Posttest Results: Principal Research Objective

1. Posttest ANCOVA analysis revealed the Dalcroze instruction group scored significantly higher ($p < .05$) on the RMAT posttest than the traditional music instruction group. Posttest means for instructional groups were adjusted by the posttest ANCOVA with pretest beat competency scores serving as the covariate.

Posttest Results: Secondary Research Objectives - Main Effects

1. No significant differences were found between RMAT posttest scores attributed to gender.

2. No significant differences were found between RMAT posttest scores attributed to grade level.

Posttest Results: Additional Research Objectives

1. The selected rhythmic activity of patting both hands showed the highest percentage mastery level for all subjects across tempo, instructional group, gender, and grade level. The remaining four activities ranging from higher to lower percentage mastery levels were playing rhythm sticks, walking in place, patting/clapping, and marching.

2. All subjects performed the five selected RMAT activities with higher mastery levels at their personal tempo when compared to the established tempos of 120mm, 130mm and 140mm.

The posttest ANCOVA procedure revealed that the Dalcroze eurhythmics instruction group scored significantly higher ($p < .05$) on the posttest RMAT than the traditional music instruction group; therefore, the study substantially supports the premise that beat competency performance can be improved to a greater extent with Dalcroze eurhythmics instruction than with traditional music instruction. No significant differences were found between posttest RMAT scores attributed to gender or grade levels. As a result of descriptive data analysis performed on the posttest RMAT, mastery levels were shown to be affected by type of rhythmic activity performed and tempo at which beat competency performance occurs.

CHAPTER V

SUMMARY AND CONCLUSIONS

Summary

The purpose of this study was to examine the effects of Dalcroze eurhythmics instruction on beat competency performance skills of kindergarten-2nd-grade children. Beat competency was defined operationally as the ability to maintain a steady beat through synchronization of bodily movements with a musical stimulus. The experimental group consisted of a kindergarten, 1st-, and 2nd-grade class from one school (n = 65) who received Dalcroze eurhythmics instruction. The control group consisted of kindergarten, 1st-, and 2nd-grade classes from a different school (n = 61) who received traditional music instruction. The principal null hypothesis was stated as follows: There is no significant difference between the beat competency performance skill posttest means of kindergarten-2nd-grade children who receive Dalcroze eurhythmics instruction and kindergarten-2nd-grade children who receive traditional music instruction. Secondary hypotheses were: 1) There is no significant difference between the beat competency performance skill posttest means attributed to gender, and

2) there is no significant difference between the beat competency performance skill posttest means attributed to grade level. Additional research objectives included identification of relationships between selected rhythmic activities and performance tempos on beat competency performance mastery levels.

To evaluate both instructional groups for pre-treatment differences, a group pretest was administered during the first week of school. For this test, each of the six intact classes was video tape recorded while subjects attempted to maintain a steady beat by clapping with a recorded musical stimulus. To obtain individual scores, two music specialists viewed the video tape of each class multiple times and independently rated each subject during 32 beats of beat competency performance (clapping). These scores were derived by using a Likert-type criterion scale ranging from 0 (off task) to 5 (100% maintenance of a steady beat during 32 beats of observation). Flohr (1991) justified the observation of 32 beats as sufficient duration for evaluating beat competency. After combining pretest scores across classes for each music specialist, the mean and standard deviation for each adjudicator were computed and interrater reliability estimates were derived using Cronbach's coefficient alpha (Boyle and Radocy, 1987). Following the establishment of acceptable reliability,

.93, pretest scores were then subjected to a 2 (instructional treatment) by 2 (gender) by 3 (grade level) analysis of variance (ANOVA). This analysis confirmed the need for covariance analysis of posttest data.

During the 32-week treatment period, the experimental and control groups each attended two 30-minute music classes per week. Instruction was provided by three teachers; the researcher, a Dalcroze and State of North Carolina certified music specialist and each school's music teacher, both State of North Carolina certified music specialist. The experimental classes received one period of Dalcroze instruction and one period of traditional music instruction per week, the former taught by the researcher and the latter taught by the school's music specialist. The control classes received identical instruction except, in place of Dalcroze instruction, the researcher taught a traditional music lesson (See Table 2, Chapter III for a schematic of instructional schedule for one week). To ensure curricular consistency, the same music objectives and time allocated for each objective were carefully documented within each instructional group (see Appendix B for curricular content music objectives and Appendix C for representative lesson plans comparing instruction between the experimental and control groups). Traditional music instruction was defined as participation in instrument

playing, creative movement, guided listening, dancing, and singing activities (see Chapter I for an explanation of Dalcroze eurhythmics instruction).

Flohr's (1991) Rhythmic Movement Analysis Test (RMAT), designed to measure beat competency performance, was administered to each subject individually as a posttest during the last four weeks of the study. The RMAT standardized procedures (Flohr, 1991) required each subject to perform five different rhythmic activities at the tempos of 120mm, 130mm, 140mm, and "personal tempo," the latter defined by Flohr (1991) as an individual's tempo which is spontaneously initiated while maintaining a steady beat. The five RMAT posttest activities included patchen (patting both hands), pat/clapping, playing rhythm sticks, walking in place, and marching. Individual posttest responses were video tape recorded and subsequently evaluated by the researcher who marked each activity at each tempo as either mastery or nonmastery. Beat competency mastery was defined by Flohr (1991) as the ability to maintain a steady beat with a musical stimulus for 8 consecutive beats (see Appendix D for RMAT scoring sheets).

For the purpose of establishing reliability estimates on the researcher's evaluation of the RMAT posttest, two North Carolina certified music specialists viewed and rated 25% of subjects' randomly selected video

taped posttests. Means and standard deviations between the two music specialists' and researcher's responses were compared, and a high interrater reliability estimate of .99 was obtained using Cronbach's coefficient alpha (Boyle and Radocy, 1987).

The primary and secondary null hypotheses were tested using a 2 (instructional treatment) by 2 (gender) by 3 (grade level) analysis of covariance (ANCOVA) with pretest scores serving as a covariate. The primary null hypothesis regarding the effects of treatment was rejected. There was a significant difference ($p < .05$) between adjusted posttest RMAT means attributed to treatment, with the Dalcroze instruction group scoring higher on the posttest RMAT than the traditional music instruction group. Both secondary null hypotheses were retained. There were no significant differences attributed to gender or grade level as determined by the ANCOVA analysis. The adjusted posttest RMAT mean was higher for females than males, and adjusted means improved with each successive grade level.

Data were further analyzed to identify relationships between the five posttest RMAT rhythmic activities and four performance tempos on beat competency performance mastery levels. Of the five selected activities on the posttest RMAT, subjects demonstrated higher beat competency mastery levels when patting both

hands, walking in place, and playing rhythm sticks compared to marching or patting/clapping. Generally, subjects demonstrated higher mastery levels of beat competency performance when performing rhythmic activities at their personal tempo when compared to the established tempo markings of 120mm, 130mm and 140mm.

Conclusions

Principal Research Objective

The principal research objective for the present study was to examine the effects of Dalcroze eurhythmics instruction as compared to traditional music instruction on beat competency performance skills of kindergarten-2nd-grade children. Data analysis revealed that students who participated in Dalcroze eurhythmics instruction scored significantly higher ($p < .05$) on the posttest RMAT than students who participated in traditional music instruction.

Considerable research is evident in the literature regarding the effects of maturation and instruction on beat competency performance. Researchers such as Groves (1969), Frega (1979), and Blatt (1964) emphasize the importance of maturation in the development of beat competency performance skills. Others, Burnett (1983), High (1987), Moore (1984), Cheek (1979), Joseph (1982), and Weikart (1987), claim that beat competency achievement

is principally attributed to instruction. While the current study is focused on the effectiveness of the two modes of instruction as related to beat competency, the role of maturation cannot be totally neglected, particularly when considering the areas of gender and grade level. When dealing with the independent variable of instruction, no attempt has been made to argue for or against influences of maturation. The treatment was applied to the instructional groups as described in the subject profile and the conclusions showing Dalcroze superiority are limited to those subjects. When dealing with the independent variables of gender and grade level, it is assumed that maturation factors have contributed in a variety of overt and covert ways to the findings. These results, however, are secondary in the current research, and are presented on their face value for descriptive purposes without attempts to show cause for the higher beat competency scores of females and successive grade levels. Therefore, findings from the current study regarding significant differences between the instructional groups support the premise that Dalcroze instruction was more effective in developing beat competency skills than traditional music instruction.

The research literature has provided limited support regarding the effectiveness of Dalcroze instruction on the development of rhythmic skills. Joseph

(1982) found that kindergarten children who received Dalcroze eurhythmics instruction and were tested on identifying familiar rhythm patterns within unfamiliar music significantly outperformed ($p < .05$) children not receiving this instruction. Brown (1981) found that young children who participated in an integrated program of physical education and music based on the Kodaly and Dalcroze curricula scored significantly higher ($p < .05$) on perceptual motor-performance skills than children who participated in creative dramatics classes. Flohr (1991) and Walters (1983) findings regarding the use of personal tempo during rhythmic instruction to facilitate beat competency performance skills also support the effectiveness of the Dalcroze approach.

Relationships between the current study and the findings of Brown, Joseph, Flohr, and Walters support the premise that Dalcroze eurhythmics instruction is an effective approach for teaching basic rhythmic skills in young children. Although it is only through speculation as to determine why the Dalcroze approach was found to be more effective than traditional music instruction when teaching beat competency skills, perhaps it was the inclusion of personal tempo during Dalcroze instruction which facilitated beat competency performance superiority in the current study. Regardless of this speculation, an important implication for the music teacher is to consider

incorporating the Dalcroze approach with young children when developing basic rhythmic skills such as beat competency.

Secondary Research Objectives

Gender. The secondary research objective of gender effect on beat competency performance skills was not of a magnitude to warrant consideration. Although the adjusted posttest RMAT mean for females was higher than the mean for males, this difference did not attain a level of statistical significance. The posttest RMAT results regarding gender are congruent with findings of Groves (1969), Smoll (1974), Gardner (1971), and High (1987). Although findings from the current study reveal that gender was not a significant factor in beat competency development, other studies lend support to the premise that females, ages 4-8 years, may outperform males on some rhythmic tasks. Therefore, music educators should recognize this difference and consider potential ramifications within other educational environments (Flohr, 1991; Gilbert, 1980; Schleuter & Schleuter, 1989; and Weikart, 1987).

Grade Level. Although mean scores on the posttest RMAT improved with each successive grade level, these differences in means were not of a magnitude to achieve significance ($p = .07$). This finding does not support the

results of Groves (1969), Blatt (1964), Frega (1979), and Gilbert (1980), who concluded that age/grade level was a significant factor in rhythmic skill development of young children. The current study does, however, support researchers who have concluded that rhythmic skill development significantly improves with instruction (Brown, 1981); (Burnett, 1983); (Cheek, 1979); (De Yarman, 1972); (Foley, 1975); (Moore, 1984); (High, 1987); (Joseph, 1982). It is important to recognize that conclusions from this study regarding the observed, but not significant, RMAT mean improvement with each successive grade level do not support the premise that rhythmic development will occur over time in the absence of instruction.

As previously discussed, maturation/grade level was not a principal research objective in the current study; however, findings from the present study regarding significant differences on RMAT beat competency scores between instructional groups and RMAT mean improvement with each successive grade level suggest that instruction as well as grade level affect beat competency development in young children. Based on results of the present study and other studies, music educators should expect some incremental differences in beat competency performance skills in association with grade level, but should also

recognize the importance of instruction in the development of these same skills.

Beat Competency Rhythmic Activities

Results from the present study show a relationship between beat competency mastery levels and the five RMAT rhythm activities of patting hands, patting/clapping, walking in place, playing rhythm sticks, and marching. Subjects attained higher mastery levels when patting both hands, playing rhythm sticks, and walking in place in contrast to marching and clapping/patting. These results are consistent with Flohr's (1991) findings when he administered the Rhythmic Movement Test to kindergarten children.

Dalcroze eurhythmics instruction is unique in that children are asked to create movements that relate to musical improvisations presented by the teacher. The Dalcroze literature supports the observation that children typically choose movements within their motor ability ranges during these activities (Caldwell, 1993; Johnson, 1993; Abramson, 1986). By choosing such movements in contrast to participating in a pre-determined movement activity, young children are generally more successful with rhythmic task performance. For example, if a teacher presents a "walking tempo" on the piano, some children might respond by walking while others might engage in a

nonlocomotor task such as clapping or stepping in place, depending on their motor-skill ability. As a result of this aspect of instruction, a variety of motor tasks may be observed in every lesson, each depending upon the individual child's motor-skill level.

Findings from the present study indicate that some rhythmic tasks are more difficult for children to master than others. Consequently, music educators should recognize the hierarchy of movement repertoire established in this study and provide opportunities for children to choose movement tasks within their individual motor-ability ranges during rhythmic instruction. As a result of incorporating this teaching strategy, beat competency performance may be facilitated in a more efficient and productive manner.

Beat Competency Tempo

An additional secondary research objective was to identify relationships between performance tempo and beat competency mastery levels. Findings from the current study indicate that kindergarten-2nd-grade children perform beat competency tasks with higher mastery levels at their personal tempo in contrast to the established tempo markings of 120mm, 130mm and 140mm. Higher mastery levels were associated with the tempo marking of 120mm when compared to 130mm and 140mm. The mean personal tempo

across the entire population was found to be 119.7mm, which is essentially the same as the predetermined experimental tempo of 120mm. Findings of Flohr (1991) and Walters (1983) are in agreement with results from the current study regarding higher beat competency mastery attainment at personal tempo.

Results from the present study showing higher mastery level attainment at personal tempo and 120mm indicate that children may be less successful when performing movements with established tempos that vary from their personal tempo. Teachers should, therefore, be encouraged to emphasize improvisations based on personal tempo, and perhaps, de-emphasize the use of musical recordings when training basic rhythmic skills. Inclusion of personal tempo during improvisational activities within the Dalcroze approach is a principal factor separating it from traditional music education methods as defined in the current study. Perhaps the personal tempo factor is an important contributor to the effectiveness of the Dalcroze approach (see Chapter I for discussion of personal tempo during improvisation in the Dalcroze approach).

As previously discussed, the ability to maintain a steady beat is dependent upon the way a child performs the beat and the tempo at which each movement is performed. In practice, the Dalcroze approach addresses both of these factors which were found to facilitate beat competency

performance in the present study. As a result, children from this defined population improved beat competency performance skills more effectively with Dalcroze eurhythmics instruction than with the traditional music instruction. Perhaps kindergarten-2nd-grade children like these in other schools may also improve beat competency performance skills as a result of Dalcroze eurhythmics instruction.

Summary of Conclusions

1. The two instructional approaches produced significantly different effects on the development of beat competency performance skills for kindergarten-2nd-grade children. Children who participated in Dalcroze instruction outperformed children who participated in traditional instruction on beat competency tasks. When training beat competency performance skills with young children, the Dalcroze approach is a viable instructional method.

2. The independent variables of gender and grade level had no significant effect on the development of beat competency performance skills, although it can be cautiously assumed that beat competency will be greater in females than males and will improve with successive grade levels.

3. A hierarchy of rhythmic tasks ranging from high mastery to low mastery was revealed in the current study; therefore, the ability to maintain a steady beat is somewhat dependent upon the way a child performs the steady beat. Based on these results, music educators should provide opportunities for children to choose movements within their motor-ability range during rhythmic instruction.

4. Kindergarten-2nd-grade children performed beat competency tasks with higher mastery levels at their personal tempo than at the established RMAT tempos of 120mm, 130mm, and 140mm. The inclusion of a child's personal tempo during improvisation is a primary element of instruction which music educators should consider when training beat competency skills. Finally, results of the current study indicate that by incorporating Dalcroze eurhythmics instruction within music classrooms, greater beat competency development in kindergarten-2nd-grade children can be achieved than by using traditional approaches. Consequently, music educators should focus attention on the Dalcroze pedagogy when training basic rhythmic skills within young children.

Recommendations for Future Research

The published empirical research on beat competency as related to young children is minimal and contains many

research disparities. Therefore, it is imperative that music educators continue to seek an understanding of beat competency as well as develop effective methods for teaching this fundamental rhythmic skill based upon research findings. The present study generated specific recommendations for future research.

An extension of the current study should focus on the selection of a larger, randomized sample. For clarification of the effects of instruction verses maturation, a replication of the present study would include a third group that does not receive music instruction. A longitudinal study should be conducted to assess the effects of Dalcroze eurhythmics instruction on rhythmic development over a period of 4-6 years. In conclusion, the results of the current study support some rhythmic teaching strategies and refute others that have been investigated by music educators and researchers. The area of rhythmic perception is extensive and complex, and it is recognized that the present study examined only a small portion of rhythmic ability development.

BIBLIOGRAPHY

Abramson, R. (1973). Rhythm games for perception and cognition. New York: Volkwein Bros., Inc.

Abramson, R. (1980). Dalcroze-based improvisation. Music Educators Journal, 60, 62-68.

Abramson, R. (1986). The approach of Emile Jaques-Dalcroze. In L. Choksky, R. Abramson, A. Gillespie, & D. Woods, Teaching music in the twentieth century (pp.27-59). Englewood Cliffs, NJ: Prentice-Hall.

Ambron, S. R. (1978). Child development. New York: Holt, Rinehart & Winston.

Anderson, W. M. (1983). East meets west with Dalcroze techniques. Music Educators Journal, 70, 52-55.

Andress, B. (1980). Music experiences in early childhood. New York: Holt, Rinehart & Winston.

Arnoff, F. (1979). Music and young children (Rev. ed.). New York: Holt, Rinehart, & Winston.

Atterbury, B. W. (1983). A comparison of rhythmic pattern perception and performance in normal and learning-disabled readers, age seven and eight. Journal of Research in Music Education, 31, 259-270.

Bachman, M. (1991). Dalcroze today. New York: Oxford University Press.

Blatt, A. (1964). Rhythmic responsiveness of normal elementary school children: An investigation of the developmental differences in the rhythmic responsiveness of the normal child when a rhythmic stimulus is utilized, as contrasted with a musical stimulus (Doctoral dissertation, New York University, 1963). Dissertation Abstracts International, 25, 1315.

Boardman, E., & Andress, B. (1981). The music book: Teacher's reference book, grade K. New York: Holt, Rinehart & Winston.

Boyle, J., & Radocy, R. (1987). Measurement and evaluation of musical experiences. New York: Schirmer Books.

Brearly, M. (Ed.). (1970). The teaching of young children: Some applications of Piaget's learning theory. New York: Shocken Books.

Brown, J. (1981). Effects of an integrated physical education/music program in changing early childhood perceptual-motor performance. Perceptual and Motor Skills, 53, 151-154.

Bruner, J. (1961). The process of education. Cambridge: Belknap Press of Harvard University.

Bruner, J. (1962). On knowing: Essays for the left hand. Cambridge: Belknap Press of Harvard Univeristy.

Bruner, J. (1975). Toward a theory of instruction. Cambridge: Belknap Press of Harvard University.

Burnett, M. (1983). The effect of rhythmic training on musical perception and motor skill development of preschool handicapped children, male and female (Doctoral dissertation, United States International University, 1983). Dissertation Abstracts International, 44, 419-A.

Caldwell, T. (1993). A Dalcroze perspective on skills for learning. Music Educators Journal, 79, 27-28.

Carder, P. (Ed.). (1990). The eclectic curriculum in American music education. Reston, VA: MENC.

Choksy, L., Abramson, R., Gillespie, A., & Woods, D. (1986). Teaching music in the twentieth century. Englewood Cliffs, NJ: Prentice-Hall.

Christianson, H. (1938). Bodily rhythmic movements of young children in relation to rhythm in music. New York: Teacher's College, Columbia University.

Cheek, H. Y. (1979). The effects of psychomotor experiences on the perception of selected musical elements and the formation of self-concept in fourth-grade general music students (Doctoral dissertation, University of Michigan). Dissertation Abstracts International, 40, 2530-A.

Colley, B. (1987). A comparison of syllabic methods for improving rhythm literacy. Journal of Research in Music Education, 35, 221-235.

Cooper, G., & Meyer, L.B. (1960). The rhythmic structure of music. Chicago: University of Chicago Press.

Crew, K. (1975). Music and perceptual-motor development. New York: Center of Applied Research in Education.

Crumpler, S. (1982). The effects of Dalcroze eurhythmics on the melodic musical growth of first-grade students (Doctoral dissertation, Louisiana State University and Agricultural Mechanical College). Dissertation Abstracts International, 43, 2587-A.

De Yarman, R. (1972). An experiential analysis of the development of rhythmic and tonal capabilities of kindergarten and first-grade children (Doctoral dissertation, University of Iowa, 1971). Dissertation Abstracts International, 32, 2727-A.

Denkla, M.B. (1973). Development of speed in repetitive and successive finger-movements in normal children. Developmental Medicine and Child Neurology, 15, 635-645.

Dittermore, E. E. (1969). An investigation of some musical capabilities of elementary school students (Doctoral dissertation, University of Iowa). Dissertation Abstracts International, 29, 4516-A.

Driver, E. (1951). A pathway to Dalcroze eurhythmics. London: Thomas Nelson & Sons Ltd.

Farber A., & Parker, L. (1987). Discovering music through Dalcroze eurhythmics. Music Educators Journal, 73, 42-45.

Findlay, E. (1971). Rhythm and movement: Applications of Dalcroze eurhythmics. Evanston, IL: Summy-Birchard.

Flohr, J. (1991). A preliminary study of young children's ability to perform a steady beat. Paper presented at the 1991 Texas Music Educators Convention, San Antonio, TX.

Foley, E. (1975). Effects of training in conservation of tonal and rhythmic patterns on second-grade children. Journal of Research in Music Education, 23, 240-248.

Freeman, I. (1985). Rhythmic beat perception in a Down's Syndrome population: A computerized measure of beat accuracy and beat interval response (Doctoral dissertation, University of North Carolina at Greensboro). Dissertation Abstracts International, 48, 1410.

Frega, A. (1979). Rhythmic tasks with 3- 4- and 5-year old children. Bulletin of the Council for Research in Music Education, 59, 32-34.

Gardner, H. (1971). Children's duplication of rhythm patterns. Journal of Research in Music Education, 19, 355-360.

Gardner, H. (1976). Promising paths toward artistic knowledge: A report from Harvard Project Zero. Journal of Aesthetic Education, 10, 201-207.

Gaston, E.T. (1968). Man and music. In E.T. Gaston, (Ed.), Music in therapy (pp. 7-29). New York: MacMillan.

Gilbert, J. (1980). An assessment of motor development skill in young children. Journal of Research in Music Education, 28, 167-175.

Gordon, E. (1965). Musical aptitude profile. Boston: Houghton Mifflin.

Gordon, E. (1979). Primary measures in music audiation. Chicago: G.I.A. Publications.

Gordon, E. (1980). Learning sequences in music: Skill, content, and patterns. Chicago: G.I.A. Publications.

Groves, W. (1969). Rhythmic training and its relation to the synchronization of motor-rhythmic response. Journal of Research in Music Education, 17, 408-415.

Heinlein, C. (1929). A new method of studying the rhythmic responses of children. Pedagogical Seminary and Journal of Genetic Psychology, 36, 205-228.

High, L. (1987). Effects of selected rhythmic teaching strategies on beat performance skills of kindergarten children (Doctoral dissertation, University of North Carolina at Greensboro). Dissertation Abstracts International, 48, 3067.

High/Scope Press. (1983). All the way to Galway. On Rhythmically Moving One [CD]. Ypsilanti, MI: Author.

High/Scope Press. (1983). Joe Clark mixer. On Rhythmically Moving One [CD]. Ypsilanti, MI: Author.

High/Scope Press. (1983). O'Keefe slide/Kerry slide. On Rhythmically Moving One [CD]. Ypsilanti, MI: Author.

Holt music. (1988). New York: Holt, Rinehart, and Winston.

Jaques-Dalcroze, E. (1921). Rhythm, music, and education. New York: G.P. Putnam's Sons.

Jaques-Dalcroze, E. (1930). Eurhythmics, art, and education. New York: Barnes & Co.

Jaques-Dalcroze, E. (1980). Rhythm, music, and education (Rev. ed.). London: Dalcroze Society.

Jersild, A., & Bienstock, S. (1935). The development of rhythm in young children. Child Development Monographs, 22, 1-97.

Johnson, M.D. (1993). Dalcroze skills for all teachers. Music Educators Journal, 79, 42-45.

Joseph, A. (1982). A Dalcroze eurhythmics approach to music learning in kindergarten through rhythmic movement, ear-training, and improvisation (Doctoral dissertation, Carnegie-Mellon University). Dissertation Abstracts International, 44, 420-A.

Kerr, R. (1975). Movement control and maturation in elementary-grade children. Perceptual and Motor Skills, 41, 151-154.

Leeds, J. A. (1985). Romanticism, the Avant-Garde and the early modern innovators in arts education. Journal of Aesthetic Education, 19, 75-88.

Lott, V. (1978). A study of musical achievement of culturally disadvantaged preschool children based on the Music for Preschool Curriculum of Marvin Greenberg (Doctoral dissertation, Louisiana State University). Dissertation Abstracts International, 39, 1183-A.

Martin, F. (1955). Eurhythmics: The Jaques-Dalcroze method. Soleure, Switzerland: UNESCO.

Maxwell, J.K. (1981). A neurological assessment of cerebral interhemispheric communication during childhood. Unpublished doctoral dissertation, Carleton University, Ottawa, Ontario, Canada.

McDonald, D. & Simons, G. (1985). Musical growth and development: Birth through six. New York: Schirmer Books.

McDowell, R. (1974). The development and implementation of a rhythmic ability test designed for 4-year-old preschool children (Doctoral dissertation, University of North Carolina at Greensboro). Dissertation Abstracts International, 35, 2029-A.

Metz, E. R. (1986). Movement as a musical response among preschool children (Doctoral dissertation, University of Arizona). Dissertation Abstracts International, 47, 3691-A.

Miller, L. (1983). Music in early childhood: Naturalistic observation of young children's musical behavior (Doctoral dissertation, University of Kansas). Dissertation Abstracts International, 44, 3316-A.

Moog, H. (1976). The development of musical experience in children of pre-school age. Psychology of Music, 14, 38-47.

Moore, D. L. (1974). A study of pitch and rhythm responses of five-year-old children in relation to their early music training (Doctoral dissertation, Florida State University, 1973). Dissertation Abstracts International, 34, 6689-A.

Moore, J. (1984). Rhythm and movement: An objective analysis of their association with music aptitude (Doctoral dissertation, University of North Carolina at Greensboro). Dissertation Abstracts International, 45, 1328-A.

Moorhead, G., & Pond, D. (1941). Music of young children. Santa Barbara: Pillsbury Foundation for the Advancement of Music.

Mursell, J.L. (1957). Music education. principles, and programs. Morristown, NJ: Silver Burdett.

Music and you. (1991). New York: Macmillan.

Norusis, M.J. (1990). SPSS base systems user's guide. Chicago, IL: SPSS, Inc.

National Commission on Music Education. (1991, March). Growing up complete: The imperative for music education. Reston, VA: MENC

North Carolina standard course of study. (1985). Raleigh: North Carolina Department of Public Instruction.

Palmer, M. (1976). Relative effectiveness of two approaches to rhythm reading for fourth-grade students. Journal of Research in Music Education, 24, 111-119.

Pennington, J. (1925). The importance of being rhythmic. New York: G.P. Putnam's Sons.

Petzold, R. (1963). The development of auditory perception of musical sounds by children in the first six grades. Journal of Research in Music Education, 11, 21-43.

Petzold, R. (1966). Auditory perception of musical sounds by children in the first six grades. Madison: University of Wisconsin. (ERIC Document Reproduction Service No. ED 010 297).

Piers, E. & Harris, D. (1969). Piers-Harris children's self-concept scale. In J. Buron (Ed.), The seventh mental measurement yearbook, 1, (1972). New Jersey: Gryphon Press.

Publication manual of the American psychological association. (1994). (4th ed.). Washington, DC: The American Psychological Association.

Ruffer, W.A., Grapenthin, R.R., Huey, L.A., & Patterson, B.J. (1985). Comparisons for psychomotor tasks: Grade and sex of secondary youths. Perceptual and Motor Skills, 60, 27-30.

Radocy, R.E., & Boyle, J.D. (1988). Psychological foundations of musical behavior (2nd ed.). Illinois: Charles C. Thomas.

Rainbow, E. (1981). A final report on a three-year investigation of the rhythmic abilities of preschool aged children. Bulletin of the Council for Research in Music Education, 66-67, 69-73.

Saliba, K.K. (1991). Accent on Orff: An introductory approach. Englewood Cliffs, NJ: Prentice Hall.

Scheihing, G. (1952). A study of the spontaneous rhythmical activities of preschool children. In E. G. Gilland (Ed.), Music therapy (pp. 188-189). Chicago: National Association for Music Therapy.

Schleuter, S. & De Yarman, R. (1977). Musical aptitude stability among primary school children. Bulletin of the Council for Research in Music Education, 51, 14-22.

Schleuter, S.L., & Schleuter, L.J. (1985). The relationship of grade level and sex differences to certain rhythmic responses of primary grade children. Journal or Research in Music Education, 33, 23-30.

Schleuter, S.L., & Schleuter, L.J. (1989). The relationship of rhythm response task and PMMA scores with music training, grade level, and sex among kindergarten-grade three students. Bulletin for the Council of Research in Music Education, 100, 1-13.

Serafin, M. (1975). A measure of meter conservation in music, based on Piaget's theory (Doctoral dissertation, University of Florida). Dissertation Abstracts International, 37, 4245-A.

Shehan, P. K. (1986). Major approaches to music education: An account method. Music Educators Journal, 72, 26-31.

Shelley, S. (1990). Observing the nature of young children's musicality. In M. Tolbert (Ed.), Music of young children (pp. 44-53). Columbus: Ohio State University Press.

Silver Burdett & Ginn. (1991). (Eds.). World of Music. Teacher's Editions, Kindergarten - Grade Two. Morristown, NJ: Silver Burdett & Ginn Publishing.

Silver Burdett & Ginn. (1991). Farmer in the dell. On World of Music, Kindergarten [CD]. Morristown, NJ: Silver Burdett and Ginn Publishing.

Silver Burdett & Ginn. (1991). Hold my mule. On World of Music, Kindergarten [CD]. Morristown, NJ: Silver Burdett & Ginn Publishing.

Silver Burdett and Ginn. (1991). Bingo. On World of Music, Grade One [CD]. Morristown, NJ: Silver Burdett & Ginn Publishing.

Silver Burdett and Ginn. (1991). Clap your hands. On World of Music, Grade One [CD]. Morristown, NJ: Silver Burdett & Ginn Publishing.

Silver Burdett and Ginn. (1991). Aiken drum. On World of Music, Grade Two [CD]. Morristown, NJ: Silver Burdett & Ginn Publishing.

Silver Burdett and Ginn. (1991). Are you sleeping. On World of Music, Grade Two [CD]. Morristown, NJ: Silver Burdett & Ginn Publishing.

Sims, W. (1984). Young children's creative movement to music: Categories of movement rhythmic characteristics and reaction to changes. Paper presented at the MENC National Convention, Chicago, IL.

Sink, P. (1989). Research on beat performance and perception skills: Music teaching strategies for developing rhythmic competency. Southeastern Journal of Music Education, 1, 1-18.

Smoll, F. (1974). Development of rhythmic ability in responses to selected tempos. Perceptual and Motor Skills, 39, 767-772.

Smoll, F. (1975). Variability in development of spatial and temporal elements in rhythm ability. Perceptual and Motor Skills, 40, 140.

Turpin, D. (1986). Kodaly, Dalcroze, Orff and Suzuki. Music Educators Journal, 72, 56-59.

Waterman, E. (1936). The rhythm book. New York: A.S. Barnes & Co.

Wax, E. (Ed.). (1979). Dalcroze dimensions. Roslyn, NJ: Mostly Movement Ltd.

Walters, D.L. (1983). The relationship between personal tempo in primary-aged children and their ability to synchronize movement with music (Doctoral dissertation, University of Michigan). Dissertation Abstracts International, 44, D2-A, 423.

Weikart, P. (1985). Movement plus music. Ypsilanti, MI: High/Scope Press.

Weikart, P. (1987). Movement curriculum improves children's rhythmic competence, study shows. High/Scope Research, 8-10.

Weikart, P. (1989). Teaching movement and dance: A sequential approach to rhythmic movement (2nd ed.). Ypsilanti, MI: High/Scope Press.

Williams, H.M., Sievers, C.H., & Hattwick, M.S. (1975). The measure of musical development: University of Iowa Studies in Child Welfare. Metuchen, N.J: Scarecrow Press.

Willour, J. (1969). Beginning with delight, leading to wisdom: Dalcroze. Music Educators Journal, 56, 72-75.

APPENDIX A

CONSENT FORMS

Mabel Elementary School

Route 1 Box 148A · Zionville, NC 28698
Telephone 704/297-2512

Dear Parents:

I am seeking permission for your child to be part of a music research project that will be conducted at Hardin Park and Mabel Elementary Schools. The purpose of this project is to discover basic information about how young children learn rhythm skills. I will team-teach your child's music class with Mrs. Smith, the music teacher at Mabel. Your child will be participating in the musical activities of singing, instrument playing, folk dancing, and creative movement. A total of 150 kindergarten, 1st, and 2nd-grade children will be participating in this project.

On two occasions this school year, your child will be observed within the music classroom. I will make several observations regarding your child's musical responses at that time. At no time will your child's name be published or will his/her individual observation be made available publicly. I am primarily interested in comparing rhythmic-skill development between classes of K, 1st, and 2nd-grade children. You are welcomed and encouraged to come and observe music class at any time during this school year.

The Watauga County Board of Education Research Committee and Mr. Yates have approved this research project. I am currently on the music education faculty at Appalachian State University and have been a public school music teacher in Watauga County for five years. Please feel free to call me if you have concerns or questions regarding your child's participation in this project. Thank you for your consideration in this matter. Please return this sheet to your child's classroom teacher.

Respectfully submitted,

Elizabeth Rose

Elizabeth Rose
phone # (hm) 295-9715
work 262-6444

Mitchell Yates

Mr. Yates
Principal, Mabel School

My child,_____, has permission to participate in the music research project.

My child,_____, does not have permission to participate in the music research project.

_____ parent signature

HARDIN PARK ELEMENTARY SCHOOL
Boone, North Carolina 28607

Dear Parents:

I am seeking permission for your child to be part of a music research project that will be conducted at Hardin Park and Mabel Elementary Schools. The purpose of this project is to discover basic information about how young children learn rhythm skills. I will team-teach your child's music class with Mrs. Combs, the music teacher at Hardin Park. Your child will be participating in the musical activities of singing, instrument playing, folk dancing, and creative movement. A total of 150 kindergarten, 1st, and 2nd-grade children will be participating in this project.

On two occasions this school year, your child will be observed within the music classroom. I will make several observations regarding your child's musical responses at that time. At no time will your child's name be published or will his/her individual observation be made available publicly. I am primarily interested in comparing rhythmic-skill development between classes of K, 1st, and 2nd-grade children. You are welcomed and encouraged to come and observe music class at any time during this school year. I will be at the Hardin Park Open House and will be glad to answer any questions regarding the project at that time.

The Watauga County Board of Education Research Committee and Dr. McKethan have approved this research project. I am currently on the music education faculty at Appalachian State University and have been a public school music teacher in Watauga County for five years. Please feel free to call me if you have concerns or questions regarding your child's participation in this project. Thank you for your consideration in this matter. Please return this sheet to your child's classroom teacher.

Respectfully submitted,

Elizabeth Rose
phone # (hm) 295-9715
work 262-6444

Dr. McKethan
Principal, Hardin Park

My child,_____, has permission to participate in the music research project.

My child,_____, does not have permission to participate in the music research project.

_____ parent signature

Appalachian
STATE UNIVERSITY
BOONE, NORTH CAROLINA 28608

School of Music
(704) 262-3020

April 18, 1994

Dear Parents:

Thank you for the opportunity to work with your child in music classes this year. My music project is now near the end, and I will be testing your child on some basic musical skills. I will be glad to share the results of your child's musical skills if you are interested. Simply return this note, and I will be in touch. Otherwise, have a great summer, and thank you again for your support in this project.

Sincerely,

Liz Rose
Music Faculty
Appalachian State University

Appalachian
STATE UNIVERSITY
BOONE, NORTH CAROLINA 28608

School of Music
(704)262-3020

May 24, 1993

Dear Research Committee:

Enclosed is a short abstract of my research proposal, a description of Dalcroze Eurhythmics, and Chapter III - Proposed Procedures, which gives a detailed account of the research project.

ASU School of Music has enjoyed a working partnership with Watauga County Schools this year. Over 1,100 Watauga County Elementary, Middle School, and High School students have come to the School of Music for various concerts, workshops, and choral festivals during the 1992-93 school year. We look forward to continuing this partnership next year.

Please let me know if you need more information regarding the enclosed research proposal. I can be reached at home, 295-9715, or at my office, 262-6456. Thank you for your consideration in this matter.

Respectfully submitted,

Elizabeth Rose

Elizabeth Rose

Appalachian
STATE UNIVERSITY
BOONE, NORTH CAROLINA 28608

School of Music
(704) 262-3020

TO: Paul Geyer
FROM: Liz Rose

SUBJECT: Request for Review of Human Subjects Research
DATE: September 10, 1993

I have enclosed the 2 coversheet forms for your review. An abstract of my dissertation project, parental permission letter, and a description of the teaching methods are also enclosed.

The Watauga County Board of Education Research Committee chaired by Carol Deal approved the project in August of 1993. I have no written documentation of this approval. I can get that if it's absolutely necessary. My doctoral committee at the University of North Carolina at Greensboro has also approved this research proposal. I can send a sheet of committee signatures and the approval form as soom as I receive it.

All parental permission letters have been received and implementation has begun as of September 7, 1993. Please contact me if you have further questions.

Beat Competency is the dependent variable in this study. It is defined as a child's ability to synchronize their movements with a musical stimulus (keep a steady beat). This is a fundamental rhythmic skill that serves as a foundation for more complex rhythmic skills. It is critical that young children develop this skill during the primary years of their musical education.

Dalcroze Eurhythmics is a method of musical instruction that incorporates natural movements of young children, i.e., rhythmic objectives (rhythmic notation/patterns, meter, beat competency, etc.). For example, a child walks in response to a quarter note and jogs in response to an eighth note. The method is unique in that the teacher incorporates the child's natural repertoire of movements and expands the repertoire through rhythmic exercises.

My experience in teaching Dalcroze eurhythmics to young children is that children find the classes to be a very positive experience. Children are allowed to explore musical concepts in a very active and creative manner. There are no wrong answers in the Dalcroze setting. The Dalcroze method in practice is well accepted by music educators, and the research literature supports that it is an effective method for teaching primary-aged children.

*** The purpose of this research is to supplement and verify previous research findings regarding rhythmic development in young children. Conclusions from this study may reinforce other research findings and help music educators make instructional decision s that will facilitate rhythmic learning.

*** There will be no risk to confidentiality for subjects in this study because scores will not be identified with individual students. Only group scores will be published. Therefore, with approval from the doctoral committee for this research proposal, this study will meet University of North Carolina at Greensboro's guidelines regarding the use of human subjects in experimental research.

COVERSHEET

REQUEST FOR REVIEW OF HUMAN SUBJECTS RESEARCH

1. Principal Investigator Ms. Elizabeth Rose

   Faculty Advisor (if PI is a student) _____

2. Department and School School of Music

3. Telephone No. 644

4. Project Title The Effects of Dalcroze Eurhythmics on Beat Competency Skills of K-2 children

5. Check all that apply: (✓) a specific project ( ) a grant proposal ( ) a protocol change
   ( ) faculty ( ) staff (✓) graduate student ( ) undergraduate

6. Funding source N/A

7. This is: (✓) a new project ( ) an annual renewal

8. Type of Review Requested - PI's recommendation: (See Part Two, Section III for criteria)
   ( ) Exempt or Expedited ( ) Full

   Sandy Elizabeth Rose — 9/10/93
   Signature of Principal Investigator — Date

   _____ — _____
   If PI is student, signature of Faculty Advisor — Date

9. IRB Chair recommendation:

   ( ) Exempt from IRB Review

   ( ) Expedited Review

   ( ) Full Review

10. Final Recommendation:

    ( ) Exempt ( ) Approved with conditions

    ( ) Approved ( ) Not approved

    _____ — _____
    Signature of Chairperson, Institutional Review Board or Designee — Date

5. How will prior informed consent be obtained? A copy of your consent form must be attached.
Each participant will have signed approval from parent. See copy of permission letter.

6. Will the confidentiality of all subjects be maintained? If yes, how is this accomplished? If no, has a formal release been obtained? Yes - no individual scores or names will be published. Only group scores (intact class) will be published. For the final data collection individual names will not appear on data forms but will be coded. Only 2 other music educators will have access to this data

7. Do the data to be collected relate to illegal activities? ✓No ___Yes
If yes, explain.

8. Is deception involved? ✓No ___Yes
If yes, explain.

9. Are all subjects protected from the future potentially harmful use of the data collected in this experiment? How is this accomplished? See abstract & data collection sheet

I have read Appalachian State University's Policy and Procedures on Human Subjects Research and agree to abide by them. I also agree to report any significant and relevant changes in procedures and instruments as they relate to subjects to the Chairperson of the IRB.

David E. Eyler Rose — 9-10-93
Principal Investigator — Date

If PI is student, Faculty Advisor

Other Investigators

Appalachian
STATE UNIVERSITY
BOONE, NORTH CAROLINA 28608

School of Music
(704) 262-3020

1. Purpose of the proposed research:

To examine the effects of Dalcroze eurhythmics instruction on beat competency performance skills of K,1st, and 2nd-grade children. (See enclosed abstract)

2. Procedures: See abstract

Methods of recruiting - intact classes will be used. Parental consent will be obtained for each child in the study (See enclosed parental consent form). Forms have been sent and collected from all students. Arrangements have been made for 2 parents who did not desire their children to be a part of the study. When each student was given the form, the classroom teacher stated that each student had an option of not participating in the study. No "special" reinforcement has been designed for those students participating in the study.

3. This research project does not entail the risk of harm to the student. Two methods will be used to teach the same state-mandated NC BEP objectives. Both methods are included in the NC BEP Basal Texts. All students will receive a variety of musical activities included in instruction and no student will be denied quality musical instruction. Treatment will occur in the regular music classroom.

4. Potential benefits - there are many research disparities regarding rhythmic development in young children. Hopefully this research will supplement and verify other research findings in music education.

The design of this study is very basic and clearly defined. Risks have been minimized because:

No part of the child's day will be changed because of the study - the study will be conducted within the 30-minute block assigned to the music teacher. The final data collection will also occur during the music class - no child will be pulled from the regular classroom for any reason. If at any point a special activity for the school is scheduled during a treatment class, the class will be cancelled to allow the children to participate in all school activities; i.e, field trips, assembly programs, etc.

MEMORANDUM TO: Ms. Elizabeth Rose
School of Music

FROM: Dr. Paul Geyer PG
Graduate Studies & Research

DATE: September 16, 1993

SUBJECT: IRB REVIEW

I have approved the enclosed IRB requests for review. Good luck with your work.

cc: Joyce V. Lawrence

APPENDIX B

CURRICULAR OBJECTIVES FOR GRADE LEVELS AND INSTRUCTIONAL GROUPS DURING TREATMENT

CALENDAR OF CURRICULUM OBJECTIVES FOR KINDERGARTEN

DALCROZE AND TRADITIONAL INSTRUCTIONAL GROUPS

COVERING THE TREATMENT PERIOD

	Dalcroze Group		Traditional Group	
	Intervention Researcher	Traditional Music Specialist 1	Intervention Researcher	Traditional Music Specialist 2
Treatment Period				
Week 1	Pretest administered			
Week 2	Steady Beat	Matching Pitch	Steady Beat	Matching Pitch
Week 3	Steady Beat	Matching Pitch	Steady Beat	Matching Pitch
Week 4	Steady Beat	Vocal Tone Color	Steady Beat	Vocal Tone Color
Week 5	Steady Beat	Vocal Tone Color	Steady Beat	Vocal Tone Color
Week 6	Steady Beat	Instrument Sounds	Steady Beat	Instrument Sounds
Week 7	Steady Beat	Instrument Sounds	Steady Beat	Instrument Sounds
Week 8	Steady Beat	Dynamics	Steady Beat	Dynamics
Week 9	Steady Beat	Dynamics	Steady Beat	Dynamics
Week 10	Strong Beats	Dynamics	Strong Beats	Dynamics
Week 11	Strong Beats	Call & Response	Strong Beats	Call & Response
Week 12	Strong Beats	Call & Response	Strong Beats	Call & Response
Week 13	Duration	Call & Response	Duration	Call & Response
Week 14	Duration	Winter Program Rehearsal	Duration	Winter Program Rehearsal
Week 15	Duration	same	Duration	same
Week 16	Duration	same	Duration	same
Holiday	Break			
Week 17	schools closed - snow			
Week 18	Steady Beat	Melody/Hi&Low	Steady Beat	Melody/Hi&Low
Week 19	schools closed - snow			
Week 20	Duration	Melody/Hi&Low	Duration	Melody/Hi&Low
Week 21	Duration	Melodic Direction	Duration	Melodic Direction
Week 22	Tempo	Melodic Direction	Tempo	Melodic Direction
Week 23	Tempo	Melodic Phrases	Tempo	Melodic Phrases
Week 25	Tempo	Melodic Phrases	Tempo	Melodic Phrases
Week 26	Tempo	Melodic Patterns	Tempo	Melodic Patterns
Week 27	Rhythm Patterns	Spring Program Rehearsal	Rhythm Patterns	Spring Program Rehearsal
Week 28	Rhythm Patterns	same	Rhythm Patterns	same
Week 29	Rhythm Patterns	same	Rhythm Patterns	same
Spring Break				
Week 30	Steady Beat	same	Steady Beat	same
Week 31	Steady Beat	same	Steady Beat	same
Week 32	Steady Beat	same	Steady Beat	same
Weeks 33-36 posttest administration				

CALENDAR OF CURRICULUM OBJECTIVES FOR FIRST GRADE

DALCROZE AND TRADITIONAL INSTRUCTIONAL GROUPS

COVERING THE TREATMENT PERIOD

	Dalcroze Group		Traditional Group	
	Intervention Researcher	Traditional Music Specialist 1	Intervention Researcher	Traditional Music Specialist 2
Treatment Period				
Week 1	Pretest administered			
Week 2	Steady Beat	Matching Pitch	Steady Beat	Matching Pitch
Week 3	Steady Beat	Matching Pitch	Steady Beat	Matching Pitch
Week 4	Steady Beat	Vocal Tone Color	Steady Beat	Vocal Tone Color
Week 5	Steady Beat	Vocal Tone Color	Steady Beat	Vocal Tone Color
Week 6	Steady Beat	Instrument Sounds	Steady Beat	Instrument Sounds
Week 7	Steady Beat	Instrument Sounds	Steady Beat	Instrument Sounds
Week 8	Steady Beat	Dynamics	Steady Beat	Dynamics
Week 9	Steady Beat	Dynamics	Steady Beat	Dynamics
Week 10	Strong Beats	Dynamics	Strong Beats	Dynamics
Week 11	Meter in 2	Call & Response	Meter in 2	Call & Response
Week 12	Meter in 2	Verse/Refrain	Meter in 2	Verse/Refrain
Week 13	Duration	AB Form	Duration	AB Form
Week 14	Duration	Winter Program Rehearsal	Duration	Winter Program Rehearsal
Week 15	Duration	same	Duration	same
Week 16	Duration	same	Duration	same
Holiday	Break			
Week 17	schools closed - snow			
Week 18	Duration	Melody/Hi&Low	Steady Beat	Melody/Hi&Low
Week 19	schools closed - snow			
Week 20	Duration	Melody/Hi&Low	Duration	Melody/Hi&Low
Week 21	Duration	Melodic Direction	Duration	Melodic Direction
Week 22	Tempo	Melodic Direction	Tempo	Melodic Direction
Week 23	Tempo	Melodic Phrases	Tempo	Melodic Phrases
Week 25	Tempo	Steps,Leaps,Repeats	Tempo	Steps,Leaps,Repeats
Week 26	Tempo	Melodic Patterns	Tempo	Melodic Patterns
Week 27	Rhythm Patterns	Spring Program Rehearsal	Rhythm Patterns	Spring Program Rehearsal
Week 28	Rhythm Patterns	same	Rhythm Patterns	same
Week 29	Rhythm Patterns	same	Rhythm Patterns	same
Spring	Break			
Week 30	Steady Beat	same	Steady Beat	same
Week 31	Steady Beat	same	Steady Beat	same
Week 32	Steady Beat	same	Steady Beat	same
Weeks 33-36 posttest administration				

CALENDAR OF CURRICULUM OBJECTIVES FOR SECOND GRADE

DALCROZE AND TRADITIONAL INSTRUCTIONAL GROUPS

COVERING THE TREATMENT PERIOD

	Dalcroze Group		Traditional Group	
	Intervention Researcher	Traditional Music Specialist 1	Intervention Researcher	Traditional Music Specialist 2
Treatment Period				
Week 1	Pretest administered			
Week 2	Steady Beat	Melodic Direction	Steady Beat	Melodic Direction
Week 3	Strong Beats	Melodic Direction	Strong Beats	Melodic Direction
Week 4	Meter in 2	Pitch Notation	Meter in 2	Pitch Notation
Week 5	Meter in 3	Pitch Notation	Meter in 3	Pitch Notation
Week 6	Meter in 2&3	Pitch Notation	Meter in 2&3	Pitch Notation
Week 7	Meter in 4	Pitch Notation	Meter in 4	Pitch Notation
Week 8	Rhythm Pattern	Pitch Notation	Rhythm Pattern	Pitch Notation
Week 9	Rhythm Pattern	Pitch Notation	Rhythm Pattern	Pitch Notation
Week 10	Rhythmic and	Pitch Notation	Rhythmic and	Pitch Notation
Week 11	Rhythmic and	Pitch Notation	Rhythmic and	Pitch Notation
Week 12	Rhythmic and	Pitch Notation	Rhythmic and	Pitch Notation
Week 13	Rhythmic and	Pitch Notation	Rhythmic and	Pitch Notation
Week 14	Tempo	Winter Program Rehearsal	Tempo	Winter Program Rehearsal
Week 15	Tempo	same	Tempo	same
Week 16	Tempo	same	Tempo	same
Holiday	Break			
Week 17	schools closed - snow			
Week 18	Steady Beat	Verse/Refrain	Steady Beat	Verse/Refrain
Week 19	schools closed - snow			
Week 20	Steady Beat	AB Form	Steady Beat	AB Form
Week 21	Steady Beat	ABA Form	Steady Beat	ABA Form
Week 22	Ostinato	ABA Form	Ostinato	ABA Form
Week 23	Ostinato	ABACA Form	Ostinato	ABACA Form
Week 24	Ostinato	Melodic Phrases	Ostinato	Melodic Phrases
Week 25	Ostinato	Melodic Phrases	Ostinato	Melodic Phrases
Week 26	Ostinato	Melodic Phrases	Ostinato	Melodic Phrases
Week 27	Dynamics	Spring Program Rehearsal	Dynamics	Spring Program Rehearsal
Week 28	Dynamics	same	Dynamics	same
Week 29	Dynamics	same	Dynamics	same
Spring	Break			
Week 30	Steady Beat	same	Steady Beat	same
Week 31	Steady Beat	same	Steady Beat	same
Week 32	Steady Beat	same	Steady Beat	same
Weeks 33-36 posttest administration				

APPENDIX C

SELECTED LESSON PLANS COMPARING TRADITIONAL AND EURHYTHMICS INSTRUCTION SPANNING TWO TREATMENT DAYS FROM THE CURRENT STUDY

30-Minute Lesson Plan: Traditional Music
Grade Level: Kindergarten, Traditional Music Treatment Group

Primary Concept: Steady Beat

FOCUS AND REVIEW

1. The reseacher played the recording, "The Farmer in the Dell" (Siver Burdett and Ginn, 1991 [CD1,8]). The children were asked to sing the song and clap a steady beat quietly in their hands.

TEACHER INPUT

1. The researcher asked the children to describe animals found on a farm. The researcher played the recording, "Hold My Mule" (Silver Burdett and Ginn, 1991 [CD 2,3]) and asked the children to name the animal in the song.

2. The researcher taught the dance that accompanies "Hold My Mule" (Silver Burdett & Ginn, p. 62).

GUIDED PRACTICE

1. The researcher played the recording and the children performed the "Hold My Mule" dance with a variety of partners. The dance involved keeping the steady beat by clapping their own hands, then clapping the hands of their designated partner.

INDEPENDENT PRACTICE

1. The children performed the dance for their teacher.

CLOSURE

1. The researcher asked the children "We've been working on matching our body movements with the beats in the songs. What is that called?" Desired response - "steady beat."

2. The researcher played the recording "Hold My Mule" (Silver Burdett and Ginn, 1991) and asked the children to find the same steady beat as in the dance and put it in their rhythm sticks.

30-Minute Lesson Plan: Dalcroze Eurhythmics
Grade Level: Kindergarten, Dalcroze Treatment Group

Primary Concept: Steady Beat

FOCUS AND REVIEW

1. Children entered room, marching in a circle to a drum beat provided by the researcher. The children were told to stop and freeze when the drum beat stopped, then continue marching when they heard the drum beat again.

TEACHER INPUT

1. The children formed a large circle and were seated on the floor. The researcher improvised a skipping pattern on the piano and asked the children whether she was playing walking, running, skipping, or galloping beats. When they identified "skipping" beats as the correct response, one child was asked to comes to center circle and skip (at their personal tempo). The researcher matched the beat provided by the child and improvised a skipping melody. The leader child chose six additional children to skip in the cirlce. The rest of the class kept the steady beat found within the skipping patterns in their hands.

GUIDED PRACTICE

1. This same activity continued with walking, running, galloping, and skating, beats until all children had an opportunity to come to center circle. During this activity, the children were asked to improvise a variety of movements to match the style of music improvised by the researcher.

INDEPENDENT PRACTICE

1. The researcher improvised and alternated between walking, running, skipping, or galloping beats. The children made the necessary movement adjustments while following the researcher's improvisations on the piano. (This type of activity cannot be implemented with 21 children until the children have had ample practice moving about in their personal space and then in general space in the classroom).

CLOSURE

1. The researcher asked the children, "What have we been working on today?" Desired response - "steady beat" The researcher improvised a soft walking melody on the piano and asked the children to put the soft beat in their hands. The children were then asked to stand up and put the same beat in their feet. Finally, they were asked to keep the same beat as they walked quietly out of the music room.

30-Minute Lesson Plan: Traditional Music Class
Grade Level: First, Traditional Music Treatment Group

Primary Concept: Introduction to Rhythm Patterns
Secondary Concept: Steady Beat

FOCUS AND REVIEW (Steady Beat)

1. The researcher played the recording "Bingo" (Silver Burdett and Ginn, 1991 [CD 3,28) and the children were asked to keep the steady beat in their rhythm sticks.

TEACHER INPUT

1. The researcher played the recording "Bingo" (Silver Burdett and Ginn, 1991) and the children were asked to play the rhythm sticks only when they heard the letters "B-I-N-G-O." As a result of this activity, the children performed the "Bingo" rhythm pattern 6 times, omitting one letter each time.

2. The researcher asked if someone could clap the "Bingo" pattern? Then, the entire class was asked to clap the "Bingo" pattern.

3. The researcher put several iconic rhythm patterns on the board and asked if someone could match the "Bingo" pattern to one of the rhythm icons: long-long-short-short-long.

GUIDED PRACTICE

1. Each child was given a bag with 2 sizes of straws - long and short. The researcher clapped a variety of rhythm patterns and the children notated the corresponding rhythm patterns on the floor with their incon staws.

2. Several children were asked to clap their names and the class responded by notating the corresponding long/short name pattern with their staws. For example, a child might clap "Mary Jane" short,short,long. The children would respond with the corresponding short-short-long staw pattern.

CLOSURE

1. The researcher played the recording, "Clap Your Hands" (Silver Burdett and Ginn, 1991 [CD 3,34]). The children were asked to clap only on the words "clap, clap, clap your hands." They were then asked to notate that same pattern with their staws.

2. The researcher asked the children to describe the difference between performing a steady beat and performing the "clap, clap, clap, your hand pattern." Desired response "steady beat stays the same, the pattern is made of long and short sounds that repeat."

30-Minute Lesson Plan: Dalcroze Eurhythmics
Grade Level: First, Dalcroze Treatment Group

Primary Concept: Introduction to Rhythm Patterns
Secondary Concept: Steady Beat

FOCUS AND REVIEW (Steady Beat)

1. The children entered the music room, marching in a circle to the steady beat improvised on the drum by the researcher. The researcher told the children to turn and march the other way when they heard the signal pattern "long-long-short-short-long" played on the drum.

TEACHER INPUT

1. The researcher improvised and alternated between two different melodies on the piano. One melody contained an obvious steady beat in the bass, while the other melody contained the rhythm pattern, long-long-short-short-long in the bass. The children were asked to walk when they heard the steady beat and stop and clap the long-long-short-short-pattern when they heard it.

2. The researcher wrote several iconic rhythm patterns on the board and the children were asked to match the long-long-short-short-long pattern to the correct iconic visual.

GUIDED PRACTICE

1. Rhythm pattern game: The children formed a large circle. One child was designated is "it" and was told to go to center circle and pull an iconic rhythm pattern from the hat. The child subsequently performed the repeated rhythm pattern on the drum. The children stepped the rhythm pattern as they moved clockwise in the circle while the leader performed it on the drum. The leader then notated the iconic rhythm pattern on the board, chose a new leader, and the game continued.

CLOSURE

1. The children were asked to describe the difference between performing the steady beat and the long-long-short-short-long rhythm pattern. The desired response was that the steady beat stays the same and the

rhythm pattern is made of long and short sounds that repeat.

2. The researcher improvised a new melody with a short-short-long rhythm pattern in the bass. The children were asked to find the new rhythm pattern in their bodies, then stand up and put it in their feet, and quietly step the pattern while leaving the music room.

30-Minute Lesson Plan: Traditional Music
Grade Level: Second, Traditional Music Treatment Group

Primary Concept: Rhythm Pattern
Secondary Concept: Steady Beat

FOCUS AND REVIEW

1. The researcher played the recording "Aiken Drum" (Silver Burdett and Ginn, 1991 [CD 3,8]) and asked the children to find the steady beat and play it on their rhythm sticks.

1. The researcher played the same recording and asked the children to play rhythm sticks on the words "Aiken drum."

2. The researcher asked one student in the class to notate the corresponding iconic rhythm pattern for "Aiken Drum" on the board.

TEACHER INPUT

1. The researcher put the rhythm icons for the song "Are You Sleeping" on the Board and asked the children to find a similar rhythm pattern as that found in "Aiken Drum" (short-short-long). Desired response - "Brother John or ding, ding, dong" (short-short-long).

2. The researcher played the recording "Are You Sleeping" (Silver Burdett and Ginn, 1991 [CD 2,29]) and asked the children to play the triangles only on the words "Brother John" and "ding, ding, dong."

3. The class was divided into 2 groups - one with triangles and the other with woodblocks. The researcher played the same recording, "Are You Sleeping" and the triangle group played only on the specified rhythm pattern, short-short-long. The woodblock group kept the steady beat throughout the song.

4. Same activity, the groups change.

GUIDED PRACTICE

1. Rhythm pattern game: The class was divided into 2 teams. Each team lined up at the board. A variety of iconic rhythm patterns were notated on the board. Two

individuals at the head of each team line were designated as "it". The researcher played a rhythm pattern on a woodblock; the first child to identify the corresponding rhythm icon on the board, hit a bell and give his/her the correct response gained one point for his/her team. The game continued until all children participated in one turn.

INDEPENDENT PRACTICE/CLOSURE

1. The class received a rhythm worksheet. They were told to circle the correct iconic rhythm pattern as played by the researcher.

30-Minute Lesson Plan: Dalcroze Eurhythmics
Grade Level: Second, Dalcroze Eurhythmics Treatment Group

Primary Concept: Rhythm Patterns
Secondary Concept: Steady Beat

FOCUS AND REVIEW

1. The children entered the room and the researcher improvised either a steady beat or a rhythm pattern on the drum. The class was told to march in a circle when they heard the steady beat or stop and clap the short and long sounds when they heard a rhythm pattern.

TEACHER INPUT

1. The researcher improvised a variety of rhythm patterns on the piano. The class was told create each pattern in their bodies, while moving in general space. Desired response - when the patterns changed, their movements changed to match the corresponding rhythm pattern.

GUIDED PRACTICE

1. The children were divided into pairs and were told to create a rhythm pattern together and also create corresponding body movements to match their rhythm patterns.

2. As each pair demonstrated their rhythm patterns, the rest of the class copied the pair's movements and tempos, then notated the icons for each pattern on a sheet of paper.

INDEPENDENT PRACTICE/CLOSURE

1. The Dalcroze group received the same rhythm worksheet as the traditional group. They were told to cirle the corresponding rhythm pattern icons that were presented by the researcher.

APPENDIX D

RHYTHMIC MOVEMENT ANALYSIS TEST

SCORING SHEET

Student ID #_____ Sex_____Age_____

____S1 __PB
____S2 __P/C
____S3 __WS
____S4 __M
__PI
_____Total

Rhythmic Movement Analysis Test Version 1.4

_____Rotation Tempo

Selection #1 - 120mm

__Pat both hands
__Pat/clap
__Walk while standing in place
__March
__Plays instrument

___*Sub Total*

Selection #2 - 130mm

__Pat both hands
__Pat/clap
__Walk while standing in place
__March
__Plays instrument

___*Sub Total*

Selection #3 - 140mm

__Pat both hands
__Pat/clap
__Walk while standing in place
__March
__Plays instrument

___*Sub Total*

Selection #4 - PT ____ mm

__Pat both hands
__Pat/clap
__Walk while standing in place
__March
__Plays instrument

___*Sub Total*

Notes: