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THE EFFECTS OF A DISCOVERY APPROACH TO MOVEMENT INSTRUCTION ON CHILDREN'S RESPONSES TO MUSICAL STIMULI

by

Isabel Barbara O'Hagin

A Dissertation Submitted to the Faculty of the

SCHOOL OF MUSIC AND DANCE

In Partial Fulfillment of the Requirements
For the Degree of

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WITH A MAJOR IN MUSIC EDUCATION

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As members of the Final Examination Committee, we certify that we have read the dissertation prepared by Isabel Barbara O'Hagin-Thoenes entitled The Effects of a Discovery Approach to Movement Instruction on Children's Responses to Musical Stimuli

and recommend that it be accepted as fulfilling the dissertation requirement for the Degree of Doctor of Philosophy

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Final approval and acceptance of this dissertation is contingent upon the candidate's submission of the final copy of the dissertation to the Graduate College.

I hereby certify that I have read this dissertation prepared under my direction and recommend that it be accepted as fulfilling the dissertation requirement.

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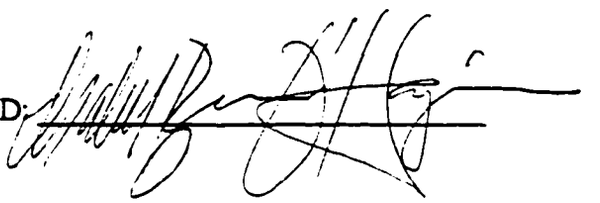
SIGNED: 

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DEDICATION

I dedicate this to my loving husband, Jeffrey John Thoenes, who made all of this possible. I cannot imagine completing this dissertation without you. From our first ventures at the library, the pregnancy and birth of our son, and the Summer Arts Program, to our move to Bowling Green, Ohio, you offered unconditional love and commitment. I cannot fully express my gratitude for all of your help. I thank you for the countless, sleepless nights and busy, frantic days in which you stayed by my side and offered creative suggestions. You are a great teacher and a great person. I am forever humbled by your patient and cheerful spirit. Thank you for being a trusted friend and partner.

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ABSTRACT

The purpose of this study was to investigate the effects of a discovery approach to movement instruction on the musicality and level of movement responses of young children. A secondary purpose was to explore these effects as they related to gender and aural perception ability. Additionally, this study sought to determine which musical styles or prominent elemental changes elicited the strongest musicality and level of movement responses. Further, qualitative differences in movement were described by judges who examined the movements of children who scored high and low in musicality.

Subjects for this pretest-posttest equivalent-groups design study were 61 children (K-1) from 12 public and private schools in southwest Arizona. The three dependent variables in this study were musicality scores, level of movement response scores, and movement pattern descriptions. The three independent variables were movement instruction (the discovery approach to movement instruction), gender, and musical aptitude (PMMA tonal and rhythmic scores). The experimental group received the treatment over a 3-week period in daily 45-minute classes. The control group received music training without the discovery movement component. In a three-way ANOVA performed on gain scores for musicality, gender was shown to be a significant main effect. That is, girls showed more musicality development than boys. The type of instruction and musical aptitude were found to be nonsignificant factors.

A ranking of musicality and level of movement posttest means for all children showed there were differences among means across excerpts with greatest responses to music in a popular style (hip-hop) or Classical style (Mozart), music with prominent elemental changes in dynamics and timbre, and fast tempos. According to judges, there are

notable qualitative differences in movement patterns between children scoring high and low in musicality. Children low in musicality lack concentration, are nonreflective of the music, and have limited body vocabularies. Children high in musicality appear to be focused and independent, responsive to the musical elements, and rhythmical. These children use a variety of whole body movements toward the development of an expressive and reflective personal style.

Chapter I

Introduction

Children love to move to music and seem to naturally respond to music through movement. Movement to music is an important and integral component of music education for children in elementary school. Besides using movement in songs, games, rhythmic exercises, and beat synchronization activities, elementary music curricula often include movement as part of the listening component. Despite all this activity, we know very little as to how or whether movement to music enhances musical learning, particularly aural perception. Many researchers have noted a paucity of literature on the topic of music and movement (Hedden, 1987; Scott-Kassner, 1992; Sidnell, 1986), while others have noted the conflicting findings concerning the effectiveness of movement-based instruction (Lewis, 1989; Metz, 1986). Music educators working with young children need to increase their knowledge of how musical perception is reflected in movement. Music teachers need more information in order to form developmentally appropriate plans and activities for their students. This research investigates one aspect of movement as it relates to music education.

Background of the Problem

In the United States, music education in the 19th century centered almost exclusively on singing instruction. Although movement to music was a part of music education then, it was singing that reigned supreme well into the 20th century. Before the 1930s, many music educators were adamant in insisting that the principal goal of music instruction be music reading, and many believed that singing alone improved rhythmic ability. Traditionalists were influenced by the opinions of Carl E. Seashore, who thought that rhythmic movement was biological and instinctive and therefore not affected by

training. This emphasis upon singing instruction did not change until the 1930s when innovators such as Mursell, Glenn, and Gehrkens advocated the use of rhythmic movement as a critical component of music instruction in the elementary schools. This new focus in music education was inspired by John Dewey, whose child-centered teaching included rhythmic movement as an important component in developing the whole child. The advocacy efforts of these educators gradually changed the shape of music education curricula for young children. Due to their interest in Dalcroze eurhythmics, the combined efforts of Mursell, Glenn, and Gehrkens provided much of the impetus for changes in textbook series, teacher training institutions, and the music education profession (Shehan Campbell, 1991). Yet, as Sidnell (1986) observed, while much of the methodology was based on the principles of the Dalcroze model, it has not been reflected in actual practice. Sidnell also noted that MENC has long endorsed rhythmic movement in the curriculum, and he recommended that further research develop our sparse knowledge in this area.

The movement training used by many music educators today has as its basis two movement theories, Jaques-Dalcroze's eurhythmics and Laban's modern educational dance. The Laban theory of movement permeates the field of dance and has provided much of the foundation for creative dance in the public schools. Both eurhythmics and the Laban approach share aspects of interpretive dance and are based on the elements of dance. Both have been influential in the formulation of a problem-solving approach to movement; however, many other dance and music teachers have created their own philosophies and techniques.

Emile Jaques-Dalcroze (1865-1950), the Swiss composer and pedagogue, became a professor of harmony and solfege at the Conservatory of Music in Geneva in 1890, and it was in this position that he became interested in how students learn and make sense of

music. He dedicated the rest of his life to inventing ways in which students could develop their musical abilities and musical understanding. Through numerous observations, Jaques-Dalcroze realized that rhythmic movement had great appeal for his students. This insight led him to a series of questions that helped him formulate his educational philosophy and theory of kinesthesia. Kinesthesia provided him with a linkage in understanding the integration of the interior and exterior, the body and the mind (Abramson, 1986).

The Jaques-Dalcroze approach is an integration of three main components: eurhythmics, the training of the body to physically experience the various aspects and expressive qualities of music through movement; solfege, the developing of the inner ear with pitch syllables and listening with greater acuity; and improvisation, the ability to express consciously and freely musical ideas one hears and feels (Mead, 1994). According to Mead, "the essence of eurhythmics is the spontaneous and individual realization in movement of what you hear in music" (p. 4). The Dalcroze teacher provides students with opportunities to experience the relationships of time and energy in music as they exist in space. The varied experiences in the Dalcroze approach offer opportunities for students to develop strong aural, visual, and kinesthetic images they can call upon later.

Through eurhythmics, students learn to express themselves rhythmically as they respond to aural sensations. Jaques-Dalcroze based his approach on the premise that "rhythm is the primary element in music, and that the source for all musical rhythm may be found in the natural rhythms of the human body" (Abramson, 1986, p. 27). The primary goals of eurhythmics training are: (a) development of attention, (b) conversion of attention to concentration, (c) social integration, and (d) responses to and expression of all nuances of sound-feeling (p. 36).

In the physical realm, personal expressiveness through performance is based on laws of time, space, energy, weight, balance, and gravity field. The term *plastique animée* (meaning moving or living plastic) is described by Jaques-Dalcroze as a complete art that provides "the interpretation, via the body, of musical emotions and feelings" (Jaques-Dalcroze, 1921/1973, p. 147). This new approach to music education influenced many musicians and dancers throughout Europe and the United States, including Rudolf von Laban.

Laban (1879-1958), the Hungarian-born dancer and scholar, based his theoretical writings on his experiences as a choreographer, artist-designer, director, and teacher (Maletic, 1987). He outlined a comprehensive system of movement phenomena detailing the common denominators such as behavioral and symbolic systems. According to Maletic, two of the problems in discussing Laban's body of work are the use of interchangeable terms from his various periods and the translation of his German texts written in the rhapsodic style popular at the time. In addition, Laban himself was reluctant to produce a method or a system and stated in 1957 that he had little interest in establishing a personal method (Maletic, 1987). In spite of these problems, it is possible to state some of the basic premises of Laban's approach to the study of movement. To begin with, several significant features are particular to Laban's examination of movement and dance: (a) the view of movement as dynamic process, (b) the correlation and unity of all movement components, (c) the concern with the experience of movement and its perception based on the mind-body unity, and (d) the description of movement and dance in its own terms (p. 121).

Guiding these precepts, was the "dynamic form theory," a belief reflected in all his ideas and movement. Laban viewed movement as a dynamic process, a wave of living,

changing transformations (Maletic, 1987). He believed that the link between the physical and mental aspects of dance was a constant, thus he developed a mind-body unity concept. Laban's language of movement cannot be understood without referring to its mental and emotional content.

Although Laban made distinctions between component parts such as time, force, space, and flow in an arbitrary fashion, these were always considered within the framework of body participation. It is movement's complexity and its many variables that provide a basis for examining the various strands. The unity of all components and their interdependence is most crucial in understanding the generating of dance. Laban devised two possible ways to describe movement, prescriptive and descriptive. The prescriptive aspect offered an acquaintance with various movement styles. Style was seen as a special selection of movement, with bodily actions forming the characteristic patterns of a particular dance (Maletic, 1987). The descriptive aspect dealt with the awareness of the whole range of bodily-spatial dynamic rhythms used for expression or efficiency. Eukinetics is the term Laban used to describe the fusion of three factors of movement: "the sequentiality of time, strength of force, and extension of space, which give movement the intended expression" (Maletic, 1987, p. 179). The study of body usage includes analytical tools such as differentiation of gestures, postures, and types of initiation, while the study of the use of space focuses on attention to the locale, the area of space, the shape of the trace-form, and the dimensional orientation of the action (Moore & Yamamoto, 1988).

The term "effort" as used by Laban describes the motivating power for movement and is linked with emotion and the human psyche (Maletic, 1987). Effort is the inner impulse from which movement originates, the dynamic aspect of movement. It links the physical and mental properties of movement and is also correlated with attitudes. In Laban

theory, the quality of the movement must be viewed within a movement sequence or the phrasing. The effort is manifested in terms of movement factors and in the characteristic patterns of a person. The four motion factors, space, weight, time, and flow, are described in terms of polarities (Maletic, 1987). Table 1 illustrates the four effort factors and their particular polarities.

Table 1

Four Effort Factors and their Polarities

Weight (Pressure):	strong/firm	light/fine touch
Time:	sudden	sustained
Space (Focus):	direct	flexible/indirect
Flow:	bound	free

By learning the Laban vocabulary of basic movements, the child can create many possible movement combinations. The child can shape the movements and study the dimensions of body awareness, space, time, weight, and flow. In the Laban approach, children move in organized patterns within an improvisational structure. Movement analysis is a complex and challenging phenomenon involving body, space, dynamics, and rhythmic sequences that occur over time. Movement education aims to find the most

efficient way to develop each child's movement potential (Laban, 1988).

The strong influence Laban had on principal characters in music education and dance circles from 1910 through 1935 (Moore & Yamamoto, 1988) played an important part in the history of Orff-Schulwerk and modern dance. Modern dance pioneer Mary Wigman began her studies with Jaques-Dalcroze but became dissatisfied since he was not a dancer (Schneider, 1976/1978). Wigman did not believe that dance should have a slave-like dependency on music. She found a purer form of dance with Laban, and together they became known as some of the early initiators of modern dance. Wigman influenced three important teachers who worked with Carl Orff: Günther, Keetman, and Lex. Although Keetman and Lex broke away from Wigman's influence and founded "elemental dance" (Schneider, 1976/1978), modern educational dance has been greatly influenced by Laban's work. His comprehensive system, framework, and vocabulary are considered by some to be the basis of what is called creative dance (Schwartz, 1993).

It is important to note the differences between Laban and Jaques-Dalcroze regarding their approaches to dance-music relationships. For Jaques-Dalcroze, movements derived from the music; for Laban, music originated from rhythmical movements of the body (Maletic, 1987). Jaques-Dalcroze transposed musical rhythms into body rhythms; for Laban, the dancer drew the rhythm from her own body movement whether it was with or without music. The theories of both have contributed greatly to the creative movement approaches currently used in working with children.

Theoretical Basis of Study

Several rationales may be offered to justify the traditional practices that include movement instruction in the general music curriculum. Some of the foundational basis relies on theoretical arguments that advocate or support a kinesthetic approach to musical

instruction positing a natural link between the psychomotor and the cognitive domains (Aronoff, 1980; Lewis, 1988). Bruner believed that children's symbolic intelligence had its origins in children's actions during infancy (Bruner, 1962). Piaget believed that early sensorimotor learning was the basis for further intellectual growth and that all thought was essentially internalized action (Flavell, 1963). Psychologists in recent years have investigated the close link between the use of the body and other cognitive powers, focusing on the neuropsychological basis of skilled body use (Gardner, 1983).

Gardner (1983) posited a theory of seven intelligences, one of which is bodily-kinesthetic intelligence. Gardner originally defined the core of bodily-kinesthetic intelligence as "control of one's bodily motions and (the) capacity to handle objects skillfully," (1983, p. 206) and, 10 years later, as "the ability to solve problems or to fashion products using one's whole body, or parts of the body" (1993, p. 9). Dancers, athletes, actors, and craftspeople were offered as examples of people possessing high bodily-kinesthetic intelligence. According to Lakoff and Johnson (1980), our conceptual systems are grounded in our perceptual motor functioning. This physical interaction with the environment allows us to construct elaborate and abstract concepts. Gardner discussed the Western philosophical legacy that traditionally divorced the "mental" from the "physical" and denigrated bodily-kinesthetic actions to a lower level than abstract thought. Instead, Gardner (1983) proposed that bodily-kinesthetic intelligence be viewed as an object-related intelligence framed by an individual's sense of self:

> Described in this vein, bodily intelligence completes a trio of object-related intelligences: logical-mathematical intelligence, which grows out of the patterning of objects into numerical arrays; spatial intelligence, which focuses on the individual's ability to transform objects within his environment and to make his

> way amidst a world of objects in space; and, bodily intelligence, which, focusing inward, is limited to the exercise of one's own body and, facing outward, entails physical actions on the objects in the world. (p. 235)

Dance, Gardner stated, is a mature form of bodily-kinesthetic intelligence; in his view it is both the apex and most universal of all the possible uses of the body.

Proprioceptive feedback, in which sensory cells monitor the movements of the body, is particularly relevant in understanding the role movement plays in musical cognition and perception. According to Luttgens and Hamilton (1997), "Information from the receptors is directed both to the conscious and unconscious levels . . . and provides us with automatic reflexes" (p. 85). Proprioception, based on receptor and sensory nerve action that can be determined neurophysiologically, is distinct from kinesthesis, generally associated with introspection (Osgood, 1953).

A movement response to specific musical stimuli involves not only proprioceptive feedback but also kinesthesis. Kinesthesis is the basis of voluntary movement and motor learning with a conscious awareness of the exact position of body parts and joint movements (Luttgens & Hamilton, 1997). The awareness of one's body in space is termed kinesthesia (Adrian & Cooper, 1995). Through kinesthesia, accurately controlled movements are possible. Kinesthetic memory and perception enable a person to create an entire movement pattern or to modify it. Moore and Yamamoto (1988) define kinesthesis as

> . . . the sensual discrimination of the positions and movement of body parts based on information other than visual, auditory, or verbal. Kinesthetic perception involves judging changes in muscle tension, body position, and the relative placement of body parts. Although kinesthesis does not yield distinct perceptions

> (like hearing a sharp sound or seeing a bright light), it constantly provides us with a substratum of knowledge of the body's position and posture, as well as knowledge of the direction of the movement of our limbs. Without any difficulty, we know where the body is, and where it is going, at any moment with eyes shut. (p. 48)

The kinesthetic sense combines with the exterior senses and the interior activities of the brain to convert sensation into information regarding feeling (Abramson, 1986). Gardner (1983) explains that the kinesthetic sense monitors muscular activity and allows us to judge the timing, force, and extent of our movements and to make necessary adjustments as we receive this information. These authors imply that it is through the visceral experience that the symbolic comes to be. We relate to the world we live in through the medium of our bodies, the core of all creative endeavor.

Some research supports a multisensory approach involving the visual, kinesthetic, and auditory, claiming that through many senses one can lead students to new insights and enrich their learning (Lewis, 1989). On the other hand, other research has found that mode of instruction has little effect (Taebel, 1974). Whether any one perceptual modality is more effective than the other in musical instruction with children cannot be determined with the research data available (Amos, 1987; Persellin & Pierce, 1988; Shehan, 1987; Zikmund, 1989). There is, however, a general belief among educators that instruction for young children should include a variety and combination of sensory modalities. By including movement-based instruction, the music teacher is reinforcing content in a kinesthetic mode thereby enhancing learning opportunities for all children.

The kinesthetic mode is essentially nonverbal. This aspect has proven to be advantageous in working with young children. Past research, formal or informal, with

young children has been problematic for a variety of reasons. For example, reading and writing tasks are difficult for very young children, as are fine motor skills and a knowledge of music vocabulary (Atterbury, 1991). It is often difficult to obtain accurate measures from children due to their difficulty in communicating what they know verbally (Flowers, 1984; Hair, 1987; Zimmerman, 1986). In response to these problems, some researchers prefer techniques based on nonverbal modes (Hair, 1981; Petzold, 1966).

One of the advantages of movement-based instruction is its nonverbal and manipulative nature, which is particularly appropriate for teaching young children. In a discussion of a study by Van Zee, Scott-Kassner (1992) stated that children's preference for physical responses over verbalizing "appears to lend credence to theories of the existence of verbal/tactile substructures that may help children mediate their musical experiences" (p. 636). According to Sims (1986), movement can be used as a viable response mode because, "it allows children to respond directly to the music itself, rather than questions about the music" (p. 3). If a system of observation is incorporated, then movement responses to music provide a nonverbal medium in which to seek information about children's musical awareness (Sims, 1988).

Need

A review of the research literature revealed several studies investigating movement-based instruction; however, many of these studies were limited in their scope (Hedden & Woods, 1992) and yielded contradictory results. For example, some studies have reported that movement instruction made a difference in achievement or aptitude (Blesedell, 1992; Moore, 1984; Schmidt & Lewis, 1987), while others found there was no effect due to the movement instruction provided or otherwise proved inconclusive (Cernohorsky, 1991; Crumpler, 1982; Joseph, 1983; Lewis, 1988). There is a need for further research on the

effectiveness of various teaching strategies involving movement instruction and the relationship with musical aptitude.

While this body of research has expanded our knowledge base, it can be faulted for a variety of reasons. One of the limitations found in the studies (Petzold, 1966; Sims, 1988) is the focus on isolated elements or structural properties rather than on holistic, contextual musical examples. Music education researchers investigating movement and music need to explore different research areas and practices. Cuddy and Upitis (1992) have stated, "A historical tradition in auditory research has been to reduce musical materials to their simplest components" (p. 335). Music educators and researchers may think that the musical elements or structural concepts form the core of music perception since the "elemental" approach has formed the music curricula for several decades (Cutietta, 1993). According to Haack (1992) there is a need for research that "explores listening phenomena in a more holistic, contextual manner . . . particularly by those concerned with more direct applications of findings to teaching/learning processes" (p. 458). Other researchers have concurred (Krumhansl, 1983; Cuddy & Upitis, 1992) and point out that specific aspects of musical perception emerge only in the contextual setting.

Many movement-based studies have focused on beat synchronization and rhythmic capabilities. Some of these research studies have employed variables based on movement tasks that were as atomistic as the isolated structural components to which they were responding. A few studies involved simplistic tasks, such as tapping or clapping to the beat (Beteljeski, 1987; Frega, 1979; Rainbow, 1981). The results of those studies have informed the profession about certain beat-keeping tasks; what is needed now is research investigating holistic, full-bodied movement responses to contextual musical excerpts.

Other studies have examined gender differences in coordination tasks such as

stepping to the beat (Gilbert, 1979; Schleuter & Schleuter, 1985), while some provided evidence that rhythmic tasks such as beat synchronization improved with age (Groves, 1969; Sims, 1985). It may be that gender differences decrease with age. The related literature in this area, gender differences in kinesthetic responses to music, has yielded conflicting results. There is a need for further research investigating the effects of gender upon movement tasks.

Another limitation in previous movement-based research is the use of aural discrimination tests in a paper and pencil format (Apfelstadt, 1984; Cheek, 1979; Lewis, 1988) as a dependent measure. It may be that there is little correlation between rhythmic discrimination described in a written task and that realized in rhythmic movement. Asking children to respond to performance-based measures might be more appropriate.

A weakness apparent in some studies is the use of disjunct and seemingly haphazard movement instruction. Many studies lacked movement training based on sound theory or simply included such an array of movement activities (Cheek, 1979; Lewis, 1988; Moore, 1984; Sins, 1976) that the reader was not sure which of the variables had an effect. For example, the array of psychomotor responses elicited within one research study included Orff-based movement, conducting, eurhythmics, tracing of melodic contour, and creative movement. The weakness in this treatment may be too much instruction with too little depth. Instead, children should be provided with movement instruction that focuses on one theoretical approach that develops their body technique and vocabulary of movement patterns to call upon when responding to music. Given this movement instruction, children can learn to apply the movement vocabulary in their performances as they listen to music.

Some researchers (Lewis, 1989; Metz, 1989) have recommended that movement

experiences be child-centered rather than be arbitrarily designed by the adult teacher. A creative movement component as discussed by Lewis (1991) is suggested to music teachers who are not satisfied with the exclusive use of mechanical movement. The creative movement approach allows students many opportunities to make up their own movements. Teachers using movement instruction based on this "discovery approach" model would coordinate the activities with music listening and would ideally encourage children to experiment on their own. Two studies conducted by O'Hagin (1994, 1995) used holistic musical stimuli and encouraged creative interpretive movement responses.

Another problem with both current methodology and movement-based research lies in the lack of sequential movement instruction coordinated with the listening component of the elementary music curriculum. Movement instruction should relate to specific musical stimuli and not to unrelated sounds or tasks. An examination of previous research indicates a need for more studies that will provide information about how the development of body awareness and technique relates to the development of musical cognition and perception. The music education profession needs to better understand how children's movement responses are reflective of musical perception in order to inform our practice.

Therefore, this study addressed the problems and issues found in the research literature by: (a) using musical examples that were holistic and contextual in nature; (b) presenting movement training that encouraged full-bodied, reflective responses; (c) using movement instruction with a theoretical basis and a single approach, the discovery approach; (d) developing and evaluating sequential movement instruction related to listening activities; and (e) investigating gender differences. The interventions and strategies music educators employ should lead to meaningful experiences that in turn lead to enhanced musical sensitivity.

Purpose of the Study

The purpose of this study was to investigate the effects of a discovery approach to movement instruction on the musicality and level of movement responses on young children. A secondary purpose was to explore these effects as they relate to gender and aural perception ability. Additionally, this study sought to determine which musical styles or prominent elemental changes elicited the strongest musicality responses and level of movement responses. Further, qualitative differences in movement were described by judges who examined the movements of children who scored high and low in musicality.

Research Questions

The following research questions were addressed in this study:

1. Do the discovery approach to movement instruction, gender, and aural perception ability affect children's gain scores for musicality?

2. Do the discovery approach to movement instruction, gender, and aural perception ability affect children's gain scores for level of movement responses?

3a. Which of the excerpts' musical styles and prominent elemental changes elicit the highest musicality responses?

3b. Which of the excerpts' musical styles and prominent elemental changes elicit the highest level of movement responses?

4. What are the qualitative differences in judges' descriptions of the movement between children scoring high and low in musicality?

Null Hypotheses

To answer the first question, the following hypothesis was tested:

All significance levels were set at .05.

Ho1 There is no difference in gain scores for musicality by group, gender, and aural

perception ability.

Ho2 There is no difference in gain scores for level of movement responses by group, gender, and aural perception ability.

Ho3a There is no difference in musicality posttest scores for specific excerpts among the eight excerpts used.

Ho3b There is no difference in level of movement responses posttest scores for specific excerpts among the eight excerpts used.

Definitions

Aesthetic criteria. Standards on which to make judgments about the artistic merit of a work of art are known as aesthetic criteria. In this study, rubrics, outlining various level descriptors, and rating scales provided the standards for the independent judges (Consortium of National Arts Education Associations, 1994).

Aural perception ability. Aural perception ability as an independent variable in this study was determined by scores in the tonal and rhythmic tests of the PMMA.

Body technique. Body technique is the ability to use physical movements effectively in response to music. Dance technique for children is based on primary, fundamental, elemental uses of the body, rather than training for any specific form of dance. The teacher's instructional goal is to teach the child to move safely and efficiently (Joyce, 1984).

Discovery approach to movement instruction. In a discovery approach to movement instruction, the teacher guides the children in a heuristic fashion, encouraging them to find their own solutions or answers to stated movement problems. The child proceeds along empirical lines in an exploration of movement. In this study, the training included creative movement instruction of an improvisatory and reflective nature.

Gain scores. Gain scores are the results of subtracting pretest scores from posttest scores.

Improvisation. Movement which is created spontaneously, ranging from free form to highly structured environments, but always with an element of chance, is improvisational in nature. Improvisation provides the dancer with the opportunity to bring together elements quickly, and requires focus and concentration (Consortium of National Arts Education Associations, 1994).

Interpretive dance. This type of dance is a form of physical modeling that requires a wide spectrum of qualitative movement and expressiveness (Tait, 1992).

Level of movement responses scores. The independent judges' perceptions of children's movement responses to prominent elemental changes in the musical stimuli were recorded on a rating scale devised by the researcher. The rating scale identified the various levels of movement responses. Movement response scores were recorded on the Level of Movement Responses Form (LOMRF) constructed by the researcher.

Music-related movement. In judges' descriptions of children's observable responses, music-related movements are those responses that reflect specific musical elements or reflect the musical whole (style) of recorded musical examples (Metz, 1989).

Nonmusic-related movement. In judges' descriptions of observable children's responses, nonmusic-related movements are those responses that do not appear to reflect specific musical elements or the musical style of recorded musical examples (Metz, 1989).

Movement patterns. Combinations of movements form a consistent or characteristic arrangement that can be identified as a pattern.

Musical aptitude. Musical aptitude was defined by two scores, the rhythmic score and tonal score, on the Primary Measures of Music Audiation (Gordon, 1986).

Musical expression. The result of connecting sequential sounds in a meaningful way is known as musical expression. Expression can be developed through the nuances of dynamics, accentuation, tempo, phrasing, style, articulation, and the natural flow of energy (Mead, 1994).

Musicality scores. The independent judges' perceptions of music-related movement or nonmusic-related movement were recorded on a rating scale that identifed various levels of movement responses. Movement response scores were recorded on the Musicality in Movement Responses Form (MMRF) constructed by the researcher. These scores are referred to in the text as musicality scores.

Problem-solving in dance. In a problem-solving orientation, the teacher suggests that the child move a part of the body or the entire body and gives directions about what action to perform. The teacher's suggestions are stated as open-ended questions. The child explores the many movement possibilities in an improvisatory framework.

Style. A dance style is a distinctive manner of moving in response to specific musical stimuli. The characteristic movements identify a particular period or mode.

Treatment. The discovery approach to movement instruction is the treatment variable. See the Discovery approach to movement instruction.

Assumption

An increase in a movement response determined to be expressive and reflective of the music is the result of increased musical perception. An expressive and reflective movement response is a valid indicator of musical perception.

Chapter II

Review of Related Literature

Studies related to the present inquiry were explored through a review of literature. This selected literature focused on pertinent studies organized into four categories: (a) related studies exploring reflective, holistic, and creative movement responses to music; (b) related studies investigating Dalcroze-, Laban-, Orff-, or Weikart-based movement training; (c) related studies examining rhythmic capabilities; and (d) related experimental and philosophical studies examining musical perception or movement. This review of literature did not investigate the following types of studies: studies based on isolated movement tasks, studies based on developmental conservation tasks, studies investigating aural discrimination, and studies examining fine motor skill development in playing instruments. The reader can refer to these two sources for an extensive review of literature investigating these topics and other various types of movement-based instruction: Lewis, 1989 and Scott-Kassner, 1992.

Reflective, Creative Movement Studies

The well known studies by Moorhead and Pond (1978) began in 1937 at the Pillsbury Foundation School at Santa Barbara. The aim of the studies was to investigate the young child's spontaneous music making. Children, ranging from 1.5- to 8.5-years-old, were provided with a rich musical environment and were free to move and to explore their own brand of improvisatory movement.

The researchers found that much of the spontaneous music making occurred with physical activity in response to music that was steadily rhythmical. Walking would often accompany a softly sung song or a rhythmic chant. Running often accompanied high, clear calling out sounds. Other motions seemed to match the ensuing activity, such as dancing,

drumming of feet, marching, patting clay, and using tools. The musical manifestation would appear first, followed by the appropriate physical activity. Emotions and thoughts would evoke any type of musical expression. The researchers also found that children made a distinction between dramatic play, a reproduction of life experience, and drama for show. The drama would often have a stylized quality about it, accompanied with a deliberate musical effort. Chants, songs, and dances would become stylized for dramatic effect.

Music sometimes would stimulate the movement, but just as often, the children would move first and then request music. Strong, lucid rhythmic music seemed to be the most suitable, but did not result in unison movement according to its tempo. It seemed, to the observers, that children would move not at random, but that they would move contrapuntally with the music. At times the children would coincidently move at the same tempo as the music, or they would adjust their tempo. Common steps were light runs, catch steps, patterned steps, stamping steps, and alternating steps. Children tended to arrange steps into patterns from time to time, so that some movement patterns became habitual and distinctive.

The observers rarely saw any attempts at unison performance, "It seems rather that the two forms of expression exist simultaneously, and for a simultaneous purpose, but, as it were, in different continuums, their relationship being deeper than that between dance and mere accompaniment, expressible only in terms of the underbeat to which they conform mutually" (Moorhead & Pond, 1978, p. 38). The children seemed to recognize that music and movement are different media and that a subservient role of either by the other was not an artistically viable process.

There have been several investigations that have used toddlers and preschoolers as

subjects. Although the subjects in the present study were older, a brief overview of these related studies is warranted. It is important to note the developmental levels found at the preschool level, in order to better understand the musical behaviors of elementary-aged children.

In one study based on naturalistic inquiry (Miller, 1983), the musical behaviors which 3-, 4-, and 5-year-old children demonstrated naturally were described, as were the interactions with their peers. Ninety-five children from eight preschools and kindergartens were observed in their everyday setting. The musical development of the children was examined in terms of conservation, vocal, melodic, rhythmic, and motor skills acquisition. The discussion included the roles of parents and teachers, the critical period of development, and the effects of environment on the developing child. The research findings showed that young children were capable of creating music without the assistance of the teacher, and that race or environment did not make a difference. Age and gender, however, did make a difference. Girls demonstrated more movement than did boys, and boys asked for records to be played and played the drums more than did girls. The observation analysis showed that 3-year-olds were more involved in solitary play and symbolic play than older children. In contrast, 4- and 5-year-olds had higher skill levels and imitated each other more than the younger children.

Musical perception may be increased by the selection of musical objectives based on kinesthetic responses a child displays naturally, instead of an arbitrarily selected musical element (Metz, 1986). In a naturalistic research mode, Metz observed movement as a musical response in preschool children, 2-, 3-, and 4-year-olds, in a free-choice participation setting. Noting that controlled testing situations and the use of adult norms were the tendencies in most movement-based research, Metz purposively designed her

study to occur in a natural learning setting following naturalistic procedures. Observations of the children for a period of 3 weeks were followed by 5 weeks of instruction. The researcher acted as teacher and observer. Videotapes of the sessions were analyzed and the behaviors were organized into theoretical categories. Based on the analysis, a substantive theory of children's movement responses emerged in regard to examining relationships among the categories. Three theoretical core categories emerged: conditions, interactions, and outcomes. The traits of the first category are dispositions, developmental stage, and mode of representation. The traits of the second category are modeling, describing, and suggesting, and correspond to the teacher's and child's behavior. The traits of the third category are music-related movement responses and nonmusic-related movement responses. In addition, Metz put forth seven propositions for early childhood education and movement responses to music.

Metz (1989) reported that body technique was important in achieving music-related responses. The movement training in the present study concentrated on instruction in body technique to enhance the natural response. Metz also suggested careful selection for music used in the study. She found that the preschool children were able to respond to musical excerpts emphasizing a single characteristic quality. The musical excerpts in the present study were selected for their general appeal to children, tempo characteristics, and stylistic mode.

Sims has often used movement as a response mode for the very reason that it is another manifestation of a nonverbal mode. A systematic observation of movement responses to music "is one of the nonverbal methods used to obtain information about children's musical awareness and responsiveness" (Sims, 1988, p. 110). In an investigation of children's creative movement responses to music, Sims (1985) gathered

information about the categories of movement used, the rhythmic characteristics of the movement performed, and the children's reactions to changes occurring in the stimulus music. There were 22 children, ages 3-5, who completed the creative movement-to-music task. Sims observed and codified children's creative movement responses by using videotape, time sampling, and observer grid sheets. The results indicated the percentages per category were fairly evenly spread between locomotor, axial, small motor, and no movement. Older children seemed to employ more locomotor movements than younger ones. Boys used more locomotor movements than girls, but were observed to have more no movement intervals. Girls were found to move more rhythmically than boys, and the percent of rhythmic movement increased with age. The data showed that boys responded quicker to musical changes as compared to girls, and that younger children reacted sooner than older children. The children in the study were not instructed to listen or respond to changes in the music. Sims stated that perhaps some of the gender differences reflected developmental differences.

Hicks (1993) recorded the responses made by young children to music stimuli during acculturation so that the practical application of music learning theory for young children would be enhanced. The eight children in the study were exposed to a variety of tonalities and meters in twenty 30-minute lessons throughout one academic year. The children's responses to familiar and unfamiliar songs with text or no text were videotaped over a series of classes and then were viewed by independent observers. The results of her study revealed that children anticipate music as they are continuously acculturated to music, with some children responding to songs minus text without being asked to respond. Hicks found that young children begin to make purposeful movement responses to music before they make purposeful vocal responses to music. According to Hicks, these movement

responses are developmental in nature and are dependent upon physical and audiation maturation.

The sensitivity of preschool children to unidimensional changes in a musical whole using movement and props was examined. Morris (1993) asked children to represent in movement the changes in dynamics, timbre, tempi, pitch (register), texture, and articulation. The movement responses of 33 children, 3- and 4-year-olds, were evaluated and organized into a developmental profile. The profile revealed that the children responded correctly most frequently to changes in tempi, and then timbre. Both age-groups responded more accurately to changes when using a prop than when responding solely with body movement. The researcher recommended that future studies look into the ways children respond to whole pieces of music and changes in discrete patterns with the use of movement.

A study by Mueller (1993) determined the effect of movement-based instruction on third grade children's ability to perceive certain properties of the concept of melody. She looked at the dependent variables of register (high, low), direction (upward, downward, same), and progression (steps, leaps, repeated tones). The children in the treatment group received two 30-minute lessons per week for 9 weeks. The movement training consisted mainly of teacher-oriented movement, teacher-guided exploratory movement in response to certain properties contained in the music, and body percussion at different levels. The gestures used in the movement-based instruction were related to register, direction, and progression in the given melody. A melodic perception test was administered as pre- and posttest. There were no significant differences between groups on the register or direction subtests. There was a significant difference between groups on the progression subtest in favor of the treatment group. Mean gain scores for pre- and posttests for both groups

increased. It was concluded that movement-based instruction aided students' conceptual development of melodic progression.

Another study using preschoolers as subjects gathered information on music and movement stimuli in relation to free-flowing and pulsating movement responses from children (Reynolds, 1995). It was found that children and caregivers responded with slightly more movement responses to a duple meter chant. Reynolds found that young children vary their stages of movement and perform the responses modeled by teachers and caregivers. Traditional chants tend to elicit immediate movement responses that decrease over time, while more complex rhythmic patterns are related to an increase of movement responses.

Moog (1979) devised a study with three groups of children (physically disabled with normal intelligence, low intelligence, and nondisabled) and found that physically disabled children had limitations in their rhythmic perception tasks similar to children with low intelligence. He attributed the poorer rhythmic perception to limited movement experiences.

A few studies investigating creative movement and music have found that movement instruction is valuable. Cheek (1979) reported that instructional activities including movement made a significant difference. Her study looked at one group of fourth graders that received instruction in creative movement, body rhythms, and hand gestures. The second group studied the same music but did not have any movement training. Cheek found that instructional strategies that include movement are beneficial, particularly when taught consistently.

Two research studies were conducted by O'Hagin (1994, 1995) related to the current investigation. The purpose of the first study was to investigate the nature and type

of children's movement responses elicited by distinct musical excerpts. Specifically, the study sought to answer the following questions: (1) Are children's movements influenced by musical style and the traditional musical elements of beat, melody, rhythm, and timbre? If so, which ones? If not, what is the nature of the response? (2) Are children's movement responses reflective of a musical understanding? and (3) Do movement responses improve over a period of 7 weeks without any instruction?

One hundred and ten first and second graders were videotaped as they moved to selected musical stimuli. The subjects were randomly assigned to either an experimental group or control group. Using a minimal, nonintrusive approach, the children were asked to listen for a brief period and then to move to the music. The stimulus tape consisted of 24 one-minute excerpts reflecting a broad range of style and elemental characteristics. The elements were kept constant while the musical style was varied. Results of this study revealed that while the musical elements appeared to be the dominant influence, movements were largely unaffected by the musical stimuli. There were no significant main effects nor interactions. The recommendations emerging from this first study led to a second study investigating movement responses.

The second study was similar in design, yet distinct from the first study due to the following changes. The children were allowed to listen to the musical excerpts twice before being asked to move. The taped musical excerpts were longer and represented 4 styles, rather than 11 styles. Musical excerpts illustrating single elemental traits were not included in the stimulus tape. The independent judges used a Laban-based movement-descriptor chart to assist them in identifying the body technique observed and to label movement patterns. Training for judges included reviewing a rubric that defined levels for reflective music-related movement responses. Videotaped examples and verbal descriptors

provided exemplars for high, medium, and low levels of reflective movement responses. The results showed no signficant main effects nor interactions.

Movement-based instruction was not a variable in either of the two O'Hagin studies. Several judges commented that children needed training before being asked to move reflectively to music as they listened. In both studies, most children chose to freely participate when asked to dance and did not hesitate at all. According to the judges, mere exposure to the music did not provide for meaningful responses. The recommendation that emerged was to include sequential movement instruction in future studies. It was thought that movement instruction which related to music listening would make a difference in the reflective nature of children's movement responses. This aspect, movement instruction, was integral to the research design of the present study.

Dalcroze-, Laban-, Orff-, and Weikart-based Instruction

There are few research studies that have investigated the effectiveness of specific methodologies and approaches that incorporate movement as a major component. Problems related to these studies include comparisons with "apples and oranges" (Froelich, 1988), teacher effect, and weak design (Hedden & Woods, 1992; Scott-Kassner, 1992). Crumpler (1982) and Joseph (1983) investigated the effectiveness of the Dalcroze method. Even though these studies have been faulted for weaknesses, they have been included here because they are often referred to in the literature.

Crumpler (1982) designed a study to determine if first grade students receiving eurhythmic instruction would score higher on a measure of pitch discrimination than students in a control group. Using intact groups of first grade classes, one group received Dalcroze eurhythmics instruction for six weeks in addition to their regular musical experiences, while the other class received their regular instruction. Crumpler administered

a pitch discrimination test and found a significant effect for treatment.

The purpose of the study by Joseph (1983) was to clarify the role of the Dalcroze approach to a kindergarten music program. Joseph compared three groups of kindergarten children with each group receiving a different type of musical instruction. The three types were informal instruction, Dalcroze with improvisation activities, and Dalcroze without improvisation activities. The study took place for one school year and included 44 music lessons. Joseph examined the rhythmic movement and improvisation achievement of 10 randomly selected subjects from each group. The measure tested subjects on their ability to recognize and respond to familiar rhythm patterns in unfamiliar music and use of patterns while improvising on a set of bells. According to Joseph, the results provided support for the inclusion of Dalcroze eurhythmics in early childhood music education.

In a study by Moore (1984), second and third grade children received movement instruction based on Orff, Weikart, and Gordon's sequence of rhythmic exercises. Moore's experiment sought to determine the effect of instruction in rhythm and movement on the musical aptitude of children as measured by Gordon's Primary Measures of Music Audiation (PMMA). The children in the experimental group received 20 half-hour lessons designed by the researcher, and a control group received traditional, song-based music instruction for the same period. The results indicated improvement in rhythmic aptitude for both second and third graders. According to Moore, the significant increase in the experimental group's rhythm aptitude supports the theory that aptitude can be influenced by instruction. It is difficult to determine which aspects of the treatment had an effect since the researcher did not employ a pure Schulwerk approach and teacher effect was not controlled.

The present study is based on one approach, the discovery approach to movement,

taught in three phases: introduction of a concept through visual analogy, teacher modeling and teacher-facilitated movement explorations, followed by children's own movement improvisations to selected musical stimuli. In the present study, the music lessons designed for the control group were carefully crafted and based on conceptual learning as well as a singing-based approach. Both teachers in the study, the movement instructor and the traditional music instructor, received considerable training and preparation. An attempt was made to make both types of instruction equally attractive to the students.

Movement instruction based on the theories of Rudolf von Laban was provided for children in kindergarten and grade two in an investigation of the effects of instruction upon rhythm performance and developmental rhythm aptitude (Cernohorsky, 1991). The rhythm subtest of the Primary Measures of Music Audiation (PMMA) was administered to 30 kindergarten children and to 33 second grade children. There were no significant main effects or interactions for grade or aptitude level regarding the rhythm performance data. There was no significant interaction found for aptitude gain scores regarding rhythm aptitude data. There was a significant main effect for level of musical aptitude, but not for grade level. Cernohorsky concluded the treatment instruction had no effect on children's rhythm performance. It did, however, have an effect upon the developmental rhythm aptitude of children who had scored low on (rhythmic) aptitude.

Another study (Blesedell, 1990) examined the effects of Dalcroze-based movement instruction and Laban-based movement instruction on the rhythmic achievement and rhythmic aptitude of 3- and 4-year-old children. Based on MANOVA results, no significant interactions were found. Both experimental and control groups showed a significant main effect for movement instruction. Blesedell suggested that either approach to movement instruction is beneficial for the musical development of preschool children.

Measurement of Rhythmic Capabilities

Earlier research studies examining movement and music have concentrated on isolated musical elements and simplistic movement tasks such as clapping or tapping. The area of rhythmic perception and production has received much research attention. Petzold (1966) administered a rhythm test containing 30 examples in three meters: 2/4, 3/4, and 6/8, and asked children to respond to the melodic rhythm by tapping or singing. He found that children could respond in a rhythmic manner by second grade, slower tempos were difficult for all children, and gender did not make a difference in either task. Petzold found that the most significant differences occurred between first- and second-grade and suggested that music instruction be provided.

In a longitudinal study, Rainbow (1981) investigated the rhythmic abilities of children from ages 3 to 4. He found that marching and simultaneous clapping were the most difficult task, followed by clapping or tapping sticks. The 4-year-olds performed better than the 3-year-olds, providing more of a basis for the effects of maturation. In a parallel study, Frega (1979) used the tasks devised by Rainbow in an examination of which rhythmic tasks children could successfully complete. Children could respond to the rhythm echoing by using their hands, speech patterns, singing patterns, feet, or an instrument. In the rhythmic task with a drum providing a steady beat, 3-year-old children responded best by clapping the beat or keeping the beat on another part of the body. Rhythmic echoing for 3-year-olds was best achieved through a vocal response; echoing with hands or feet proved more difficult. An older group of 4-year-olds responded equally well to all the single rhythm tasks, but was less successful with the more complex task of stepping and clapping with the beat. In the rhythmic echoing task, 4-year-olds did much better than the 3-year-olds, but echoing the pattern by using the feet was still difficult. It was found that rhythmic

memory greatly improved with age. Both groups found slower tempos to be more difficult. Five-year-olds demonstrated gains in all the tasks for both rhythmic tasks and echoing, including maintaining a steady beat with a slower tempo and echoing with the feet.

In a study determining the relationship of grade level and sex differences in rhythmic responses (Schleuter & Schleuter, 1985), children in kindergarten through third grade were required to respond to tape-recorded items by clapping, chanting, and stepping. Kindergartners found it easiest to chant, first and second graders did their best with chanting and clapping, and third graders found clapping to be the easiest. First through third grade girls scored higher than the boys. The researchers reported that all responses improved with age and that stepping was the most difficult for all children. A later study (Schleuter & Schleuter, 1989) investigating the effect of school music training reported similar results and found that girls benefitted more from instruction than boys, that training had a positive effect on chanting, and that all three responses were affected by training.

In another study (Schmidt & Lewis, 1987), subjects received instruction in tempo, meter, and rhythm, reinforced with activities that involved a psychomotor response. The fourth grade students were classified as field dependent or field independent. The data of this study suggest that movement instruction significantly improved fourth graders' perception of tempo. Field dependent students seemed to benefit more from the movement-based instruction. The researchers suggested this may be a means to teaching aural skills to this population.

High (1988) investigated the effects of Weikart's beat experiences versus traditional bodily movement to rhythmic phrase patterns on the development of beat performance skills of kindergarten children. The results of the study were found to be significant.

Weikart's Rhythmic Competency Analysis Test (RCAT, 1982) was administered as both pre- and posttest. The results of the study determined that males improved more than females, patting was slightly easier than walking for the experimental group, and the effect on beat performance skills was significant. It was determined that the effects of gender, motor task alteration, and interactions among variables were not significant.

Another study examined the effects of training and the variables of home musical background, motor ability, gender, and personal social adjustment upon children's rhythmic ability (Groves, 1969). The results showed that training was not a significant factor in the child's ability to synchronize body movements with rhythmic stimuli. Gender, personal social adjustment, and home musical background were found to have no predictive value in the study. A child's motor ability and age/grade level were significant factors. A follow-up test administered 18 months later provided further evidence that age and maturation were more significant to rhythmic-synchronization ability than was instruction.

An investigation of personal tempo and the ability of children to synchronize movement with music was the purpose of a study by Walters (1983). Ninety-six subjects, K-3, were measured for personal tempo with a series of two-handed lap pats. Subjects were administered Froseth's Primary Measure of Kinesthetic Response to Tempo in Music, a 14-item synchronization test. The children performed best when the test item was nearest to their personal tempo. Scores tended to decrease as items diverged from personal tempo. Slower tempos resulted in lower scores. Children with consistent personal tempo scores tended to score higher than children with inconsistent personal tempo scores. Walters did not find gender to be significant.

Another study examining the personal tempo of children as it relates to beat-keeping

ability reported different results. An investigation with first graders (Nelson, 1991) determined each subject's personal tempo and its relationship to beat synchronization. Synchronization was measured using Froseth's Primary Measures of Kinesthetic Response (PMKR). The results indicated that personal tempo did not affect the ability to synchronize movement with different tempos. In the third phase of the study, in which instruction was included, results suggested that students can synchronize movement to music at a variety of tempos by practicing at a single tempo.

Using a revised Test of Nonlocomotor Rhythmic Movement, Jordan (1994) examined the five levels of beat coordination proposed by Weikart. Jordan found that lower body movements were more difficult than upper body movements and that movements with music were more difficult than movements without music. She reported that scores improved with age and that girls at age 7 were more successful than boys. Several observations were made concerning factors that increased the difficulty in movement patterns. These factors included the adding of motions, using bilateral rather than one-sided movements, employing asymmetrical as opposed to symmetrical motions, adding music, eliminating endpoints, and using the lower body instead of the upper body. This was an interesting finding since it is common in teacher-oriented movement instruction to ask children to move the lower body, as in stepping to the beat.

Experimental and Philosophical Studies Examining Musical Perception and Movement

Project Zero, sponsored by Harvard University, examined the process of artistic creation in 20 children at age levels ranging from 6 though 19 years (Gardner, 1971). In this study, children's sensitivity to style was examined. The task involved children's ability to determine whether two excerpts of music came from the same composition. It was found that all age levels showed some sensitivity. Younger children demonstrated a

significant tendency to focus on a dominant figure and had strict criteria for categorizing the various styles. Gardner posited that children's verbal reactions to music can be attributed to their greater imaginativeness and not to a heightened musical awareness.

In an extensive study with subjects that included 5-, 6-, 8-, 10-, and 11-year-old children and adults, Serafine (1988) investigated aural discrimination and cognition. In addressing the nonelemental level of cognitive processing, she made a distinction between style-specific and generic cognitive processes. Serafine refers to higher-level, pan-stylistic cognitive processes with the term "generic" and describes them as "temporal processes (succession and simultaneity) and nontemporal processes (closure, transformation, abstraction, and hierarchic levels)" (p. 223-224). Serafine found that these processes did exist and are generally in place by the time a child is 10- or 11-years old. According to Serafine, there was not much evidence of these processes with 5-year-olds, and they were not dependent on formal training. The younger children were not able to identify successive or simultaneous combinations of motives or combinations of timbres. They did not discriminate well between repeating and alternating patterns and did very poorly when asked to determine how many parts there were in a particular texture. In considering developmental trends, a rapid period of growth was indicated between the ages of 8 and 10 or 11 years. Also, she found that "temporal processes appear to develop *after* rather than before nontemporal ones" (p. 224). In the present study, the subjects were 6- and 7-year-old children. Serafine did report that young children show signs of an emerging understanding of the successive and simultaneous dimensions and nontemporal processes.

Lewis (1988) investigated the effects of movement-based instruction on first and third graders' music listening skills, specifically on tasks involving melodic direction, meter, rhythm, patterns, dynamics, and tempo. The movement instruction was varied and

included unaccompanied movement to illustrate concepts, conducting gestures, body ostinati, eurhythmics, and dance. According to Lewis, instruction only proved to be effective in listening skills involving dynamics. Lewis suggested that there is little correlation between rhythmic discrimination described in a written task and rhythmic movement.

Some studies have been undertaken to examine children's nonverbal responses to musical stimuli. In a study investigating children's responses to the perception of pitch motion (Hair, 1977), it was found that children were more accurate in demonstrating understanding through use of nonverbal response modes. Hair asked a group of first graders to respond through written response, by performing on bells, or by verbal response. She noted that 66% of the children used spontaneous gestural responses. A study by Van Zee (1976) reported that children often used spontaneous gestures to demonstrate musical perception.

An examination of relationships among the perceptual elements of learning style, music aptitude, and attitude toward music used third grade students as subjects (Falkner, 1994). The results of a two-way ANOVA showed an interaction effect between the level of musical aptitude and perceptual modality strength to be significant. The results showed that students scoring highest in musical aptitude were primarily kinesthetic and visual learners. The researcher concluded that conceptual skills in music are better served in an active approach that engages all perceptual modalities in the music-making process. The results of Falkner's study are relevant to the present study, in that the discovery approach to movement instruction is a highly interactive approach involving children in the process of constructing music-meaning. In addition, the movement instruction in the present study included the use of visual analogy and metaphor related to selected musical stimuli.

A related study by Dunn (1994) highlights the important role perceptual modality plays especially when children's responses are examined. Dunn examined third graders' retrospective verbal reports after six repeated-listening experiences. These listening experiences were presented in each of three perceptual modality combinations: auditory only, auditory reinforced with visual stimuli, and auditory reinforced with kinesthetic stimuli. Individual perceptual modality preferences were determined by the administration of the Swassing-Barbe Modality Index (SBMI), self-evaluation, and information from parents, classroom teachers, and the music teacher. The following patterns emerged: students processed in all three modalities to varying degrees as they listened to music, students' perceptions often varied dependent upon the perceptual modality stimuli they were given, and some students appeared confused by the addition of certain stimuli. The training offered in the present study made use of all three modalities, visual, auditory, and kinesthetic, and initially presented each modality by itself without any combining of modes.

Wis (1993) developed a theoretical foundation for movement-based activities in choral pedagogy. The purpose of her study was to investigate how gesture and movement in the choral rehearsal function as physical metaphor to facilitate learning and to enhance musical experience. This relates to the present study, where the movement instruction for children is specifically designed as a series of visual and physical metaphors. Wis noted that recent investigations into the nature of cognition (e.g., Lakoff & Johnson, 1980) have examined the role the body plays in cognition. Lakoff and Johnson have proposed that cognition is not only inseparable from, but also dependent upon bodily experience, and that metaphor provides a link between the concrete, bodily domain and the abstract, conceptual domain. Wis found that movement activities assisted in the natural inclination toward bodily-based learning, encouraged more active participation, and were less subject to

misinterpretation than words. Further studies that investigate theory-based movement instruction related to music training are needed. The present study aims to establish a theoretical basis for sequential movement instruction.

In a rare study culminating in a philosophical synthesis, Ball (1982) drew upon four domains of knowledge-music, movement, learning theories, and the affective domain-to establish a theory of qualitative movement in sensory learning. Ball argued that such a theory would serve as an effective avenue through which young children would perceive the expressive qualities of music. Ball stated:

> Music is characterized as an expressive art-form embodying qualities related to movement. The aesthetic properties of sound-movement are derived from basic, primary qualities of movement found in life, in which physiological movement embodies psychological dimensions of sentience (affect). This physiological-psychological phenomenon is innate to human experience because all events enter consciousness on both, conceptual and perceptual level [sic]. (p. 1870)

Young children are perceptually oriented; the type of mentation centers on qualities of sound, movement, and feeling. Ball introduced the term "metaphoric-motor-imagery" to describe the internalization of sound-movement. He further discussed three aspects of energy familiar to all forms of movement-force, frequency, and speed-which can be related to bipolar qualities of light/heavy, even/uneven, and active/still. This vocabulary is related to the properties in dance: time, space, and force. The present study, experimental and descriptive in nature, has attempted to establish a similar model by proposing perception-based, movement-based, metaphoric and bipolar models for instruction.

In a thought-provoking paper, Callen (1985) asks how movement to music could play an important role since there seems to be no appropriate movement to make while

listening to a particular work of music. He notes that people respond with a great variety of movements and sometimes with little or no movement at all to the same music. Callen establishes an argument that moving to music is one way to significantly enhance our appreciation of a performance of a music work. He believes that through moving to music it is possible to construct a type of selective modeling of human expression that can then be appropriately applied to the music itself. One of the main ideas emphasized is that moving to music is a rough schematizing of such behavior that shows or exemplifies the salient energies and continuities of expression.

An important part of Callen's (1985) philosophical paper is the commentary on the type of movement-based instruction found in current music education curricula. Callen finds that movement called for in Dalcroze-inspired, Orff, or Kodály music pedagogies is severely truncated compared to the schema he envisions. The type of movement encouraged in these methodologies is primarily used to recognize and respond to patterns of tension, suspense, and relaxation that characterize the musical structures. He finds these systems lacking because they "fail to draw the connections between movement and human expression that would enable students to come to appreciate the human dimension in the music" (p. 47). Instead, Callen advocates moving to music in a way that engages full emotional and dramatic response to the music. The initial resonance response to the rhythms and energies in the music gives way to a modeling of expressive behavior and then is "transformed into a way of sympathetically identifying with the emotions in the music" (p. 48). This is one way we can respond to music through movement. The movement instruction used in the present study allows for the children to respond in a free, creative manner to music that hopefully will lead to expressive, reflective music-related movement.

Implications for this Study

The review of literature discussed in this chapter examined related studies in four categories: (a) related studies exploring reflective, holistic, and creative movement responses to music; (b) related studies investigating Dalcroze-, Laban-, Orff-, or Weikart-based movement training; (c) related studies examining rhythmic capabilities; and (d) related experimental and philosophical studies examining musical perception or movement. Based on this review, a practical and theoretical framework emerged from which the present study was designed. Although movement has long been an important component of elementary music curricula, the current research literature is sparse and yields conflicting results. Therefore, further investigations in this area are warranted.

There have been few studies exploring reflective, holistic, and creative movement responses to music with children in the early primary grades; most of the existing studies have examined preschool children's responses. Some studies have included creative movement instruction as only one component in the complete instructional plan. This study addressed the need for examining children's holistic reflective responses to musical stimuli by focusing solely on that aspect. Movement instruction through the discovery approach included the teaching of musical concepts through visual analogy, listening to music, developing body technique and vocabulary, teacher-modeling and teacher-facilitated movements, and children's own reflective responses to selected musical stimuli. The movement instruction was an integral part of the research design. Researchers have found that students require structured exploratory experiences to obtain higher planes of creativity and need skill development in their creative activities (DeLorenzo, 1989; Czikszentmihalyi, 1990). The present study built upon research by Metz (1986), which reported observations on music-related and nonmusic-related movers, and Sims' (1985) study that investigated

creative movement responses to obvious musical changes. This study was similar to Sims' in that children were not directed to listen for particular changes in the musical stimuli. It was anticipated that children would be able to transfer their learning to a new situation, the posttest.

Earlier studies investigating the effects of various instructional approaches to the teaching of movement and music reported conflicting results. This study included treatment based on accepted movement theory and sequential movement instruction. Much of the related literature has examined the rhythmic capabilities of children. Several existing studies have focused on minimal beat-synchronization tasks. There is a need for studies examining the complex nature of holistic, creative movement responses to music listening. This study also addressed gaps found in the literature by investigating creative movement responses through qualitative measures of a descriptive nature.

The present study addressed the need for holistic, contextual musical examples by using excerpts taken from longer sections of whole pieces of music. The musical excerpts were selected by a panel of trained musicians who based their selections on the following criteria: general appeal to children, consideration of tempo, and style categorization. A panel of trained musicians determined when prominent elemental changes occurred and which of the musical elements were altered. Several studies have focused on children's ability to hear discrete changes in the music and have recommended further research in this area. It was anticipated that children in kindergarten and first-grade would perceive and categorize musical events in a holistic manner (Serafine, 1988). The present study addressed this need by asking children in kindergarten and first grade to listen to excerpts taken from whole pieces of music and to respond in movement to changes in discrete patterns. The children's movements were observed and analyzed regarding the level of

musicality and level of response to the prominent elemental changes. Furthermore, because excerpts were taken from whole pieces of music, children were given opportunities to make decisions about musical style and to respond to a synthesis of musical elements.

A few studies have investigated the relationship between musical aptitude and children's movement responses. To date, there is little evidence of the effects of aural perception ability upon kinesthetic responses. There is a need for more information on this topic.

Some studies have found that gender is an important variable, while other studies have reported that gender is not a factor. Since developmental concerns are paramount in teaching music to children in primary grades, further research is warranted in order to learn more about gender differences in this area. Music teachers need to provide developmentally appropriate activities for boys and girls at various stages. This study addressed the need for more information regarding gender and movement responses.

A review of the existing literature reveals a need for investigations in reflective, creative movement responses to music listening. After the instructional period, the children in the present study were asked to respond in movement to musical compositions they had not previously listened to during the treatment period. This provided the children an opportunity to transfer their knowledge and reflect on the characteristics and style of the music as they moved.

Chapter III

Methodology

Restatement of Purpose

The purpose of this study was to investigate the effects of a discovery approach to movement instruction on the musicality and level of movement responses on young children. A secondary purpose was to explore these effects as they relate to gender and aural perception ability. Additionally, this study sought to determine which musical styles or prominent elemental changes elicited the strongest musicality responses and level of movement responses. Further, qualitative differences in movement were described by judges who examined the movements of children who scored high and low in musicality.

Subjects

Ninety-eight kindergarten and first grade children comprised the original sample at the beginning of the experiment. The children attended a 3-week summer session in general music organized by the researcher, which was held at a local university. The children were randomly assigned to the experimental group or the control group. These two groups were further subdivided by randomly assigning subjects to one of three classes. The subgroups were necessary to provide instruction in a 20:1 student to teacher ratio. Sixty-one children from seven public and private school districts in southwest Arizona finished the study. Thus, the final sample population consisted of: $\underline{n} = 42$ for kindergarten; $\underline{n} = 19$ for first-grade; $\underline{n} = 35$ for females; $\underline{n} = 26$ for males; $\underline{n} = 30$ for experimental group; and $\underline{n} = 31$ for control group.

Judges. There were three panels of independent judges with five judges in each panel, for a total of fifteen judges. One panel rated children's musicality, a second panel rated children's level of movement responses, and a third panel determined qualitative

differences between children who scored high and low in musicality. Each of the independent judges held a master's degree or the equivalent in music education or dance and had at least four years of teaching experience. Judges understood the role of movement education for young children in a musical environment. Training for the judges included the viewing of several exemplars on videotape and reviewing a set of rubrics, the aesthetic criteria, for each level in the rating scale. The judges had an opportunity to discuss procedures and terminology before any of the observations began.

Musical Stimulus Tapes. All subjects moved to the same eight musical excerpts. Several excerpts were selected from the CDs accompanying the textbook, The Listening Experience (O'Brien, 1995). There were two panels of independent judges who helped to prepare the musical stimulus tapes. Each panel consisted of five judges who held master of music degrees. One panel of judges assisted in the selection of excerpts from a pool of 64 musical compositions compiled by the researcher. The criteria for selection included music the judges thought young children would find appealing, and music that was representative of the genre in question. The musical excerpts represented four distinct musical styles: American folk music, Western art music, jazz and jazz-related music, and popular music in the rock idiom. Tempo was a consideration, with each of the four musical styles represented in both fast and slow tempos (See Appendix A for a complete description).

Each excerpt was approximately 2 minutes long. An attempt was made to record excerpts that retained their musical integrity with respect to the time limit. Three randomly ordered musical stimulus tapes were created for each of the three classes.

The second panel of judges timed and identified the prominent elemental changes in each of the eight musical excerpts used in the pre- and posttest stimulus tape. The excerpts were selected because, according to the trained musicians, they exhibited specific and

clearly executed changes in some aspect of the musical performance. The changes were identified as the elements of rhythm, dynamics, form, tempo, and timbre. In the opinion of the judges, pitch as an isolated element was not as easily detectable as other prominent elemental changes. All identified changes occurred within the first minute of playing time. These identified elemental changes for each excerpt comprised the segments for the videotaped viewing in this measure.

Dependent Variables

The three dependent variables in this study were: (a) musicality scores, (b) level of movement response scores, and (c) movement pattern descriptions.

Musicality Scores. The musicality score was a number from 1 to 5 assigned by independent judges as they viewed a videotape of each subject's movement responses. For all scores, a higher score (5) was intended to reflect a higher degree of musicality as perceived in the movements. All five judges observed and rated one group, group six, to obtain an interjudge reliability score. The interjudge reliability score was .75. After all five judges rated group six, each judge was assigned to one of the remaining groups, one through five. The judges observed the pre- and posttest videotaped sessions consisting of at least 10 children responding to eight different musical excerpts. The eight musical excerpts were in both fast and slow tempos and represented four distinct styles: American folk music, Western art music, jazz and jazz-related music, and popular music in the rock idiom. The judges were not told which session they were viewing, pre- or posttest. Judges viewed the videotapes and assigned a score to each subject's movement responses to eight musical excerpts. The judges' scores for each subject were averaged to obtain a pretest score and a posttest score (See Appendix B).

Level of Movement Responses Scores. The level of movement responses score was a number from 1 to 3 assigned by independent judges as they viewed a videotape of each subject's movement responses. For all scores, a higher score (3) was intended to reflect a higher level of movement response to prominent elemental changes in selected musical stimuli. The level of movement response scores were assigned to the subjects by the second panel of five independent judges. The same procedure as before was used to obtain interjudge reliability. The interjudge reliability score was .71. After all five judges rated group six, each judge was assigned to one of the remaining groups, one through five. The judges observed and rated individual subjects as they moved to the eight musical excerpts in the musical stimulus tape. The judges were not given information about which videotape they were viewing, the pre- or posttest. All subjects were observed and rated. Each subject's score for each of the eight excerpts was averaged to obtain a pretest score and a posttest score (See Appendix C).

The panel of judges was instructed to observe a subject's movement responses approximately 20 seconds before the change was heard and 20 seconds after the change occurred. In this manner, judges were able to gain a sense of how the child was moving before and after the change. During the viewing, an assistant to the researcher called out the time in seconds. The use of the timer on the TV-VCR screen was another method employed. Judges were allowed to replay the videotape as often as necessary. The judges rated each child's level of movement responses in reaction to prominent elemental changes.

Movement Pattern Descriptions. The third panel of independent judges viewed videotapes of the posttest and was instructed to focus on specific children. These children had been previously identified as high or low on musicality based on their musicality scores. Judges were not given this information and were not told if the child was in the

experimental or control group. The judges viewed the movement responses of eight children, four high in musicality and four low in musicality. Each child was observed moving to four different musical excerpts, one in each of the style categories. Judges were to describe observable body movements in a narrative script. The judges were given a list of Laban-based movement descriptors and a writing tablet for the narrative script. The Laban-based list was reviewed and presented as a tool for generating possible descriptive language. Judges were encouraged to use their own terminology to describe each child's movements (See Appendix D).

The narrative script of each judge was hand-coded by the researcher in an effort to form theoretical categories, identify the critical properties of each category, and explain the relationships among the categories. This information formed the basis of the differentiation of movement patterns between subjects identified as high in musicality (music-related movers) and low in musicality (nonmusic-related movers).

Test validity was pursued by interviewing 10 children as they viewed a videotape of their own performance three days after the posttest was administered. The children were randomly selected. This procedure was used to determine if the children's answers correlated with the judges' observations. The interviews were administered individually by the researcher while the child's parents sat at the back of the room. The researcher engaged the child in conversation before beginning the interview. Examples of the interview questions are:

1. Do your movements match the music?
2. What were you thinking or feeling when you were moving to the music?
3. What was the music doing that made your body move that way?
4. What kind of music is this?

The reliability of the independent judges' observations was determined by comparing recorded observations with a percentage of agreement among observers. Independent judges received training in the procedures used for observing and recording observations. The judges had an opportunity to participate in a dry-run phase for the procedures used in the study. They and the subjects participated in a double blind study.

Independent Variables

The three independent variables for questions one and two in this study were: (a) treatment (e.g., the discovery approach to movement instruction); (b) gender; and (c) aural perception ability (measured by the PMMA, tonal and rhythmic subtests).

Treatment (The Discovery Approach to Movement Instruction). The first independent variable, treatment, was determined by random assignment to the experimental group or the control group (See Appendix E for a complete description of the movement instruction). The movement instruction was based on the discovery approach to movement in which the professional dance teacher guided the children to find their own solutions to stated movement problems. After the children became familiar with the music, they proceeded along empirical lines creating movements of an improvisatory and reflective nature. The following statements are examples of movement problems posed by the teacher:

1. Let's explore the use of weight in our movements. You can move your body in a heavy way (or in a light way). Discover a way to move your entire body that shows a heavy weight. Use your entire body to create the movement. Now try to move only your legs in a heavy way, now your arms, and now your head.
2. We can move our bodies in many ways. Can you move your body in a low space? A middle space? How many different ways can you find to show

movement in a high space?

Intentional use of musical terminology during the lessons was avoided. The dance and music teachers gave instructions to the children from a script prepared by the researcher. Each lesson was completely scripted. The dance teacher took great care not to instruct the children about which movements were more appropriate than others. The dance teacher was given instructions not to offer verbal reinforcement and to avoid asking the children to model or mimic her movements exactly.

The music specialist included a variety of informal movement-based instruction in her teaching presentations. Such movement-based instruction would normally include rhythmic activities, simple folk dances, and movement games with songs. No attempt was made to remove these typical and commonly used movement activities from the music lessons. Both groups would meet again at the end of each lesson to sing songs and review music activities (See Appendix F for a complete description of the music instruction).

The experimental group received movement instruction for 10 days in a 3-week session. The daily movement instruction was approximately 20 minutes in length for each session. The movement was led by a trained dance instructor experienced in working with children of this age group. Movement instruction was based on the discovery approach, an improvisatory approach to learning about the dance elements of time, space, energy (weight), and form. The movement instruction consisted of three main components: movement warmups, basic body technique, and movement instruction related to a music listening activity. After the music listening activity was presented, the children had opportunities to engage in movement improvisations to given musical stimuli. All subjects moved to the same 24 musical excerpts during the instructional periods. These musical excerpts were selected using the same procedures as described for the musical stimulus

tape.

These three components, movement warmups, body technique, and movement related to a listening activity, formed the core of the instruction and were taught in five steps. The first step was the concept presentation through visual analogy achieved mainly with the use of props and modeling by the dance teacher. The musical stimulus tape was not used in this first step. The dance teacher would present the concept and demonstrate in movement three possible interpretations. She would then invite the children to join her in exploring the concept without any music to accompany the movement.

The second step involved the dance teacher's further modeling and demonstration to a specific musical excerpt. Each excerpt highlighted prominent elemental changes. The dance teacher would play an excerpt and move to it in three different ways. She would then ask the children which of her three movement sequences they felt best matched the music they heard. Children were allowed repeated listening opportunities to express various opinions. The dance teacher would then relate her movements to the various concepts used in the visual analogy. For example, the concept of viscosity was illustrated by dropping objects in various liquids. The motion and flow of the objects were then correlated to the flow in music. The concept of velocity was demonstrated by using hair dryers and colorful silk scarves. After her demonstration and discussion that followed, the dancer teacher would always allow for the children to participate freely in movement.

The third step included further teacher modeling. The dance teacher would check to see whether the children held the same opinion or had changed their minds after she repeated the movement sequence. The teacher took care not to criticize the children's answers. The dance teacher told the children they would now have an opportunity to move to the music on their own. She facilitated the problem-solving by describing and modeling

the body movements they created and which best reflected the music being played. The dance teacher continued to describe and model as the children moved to the music.

The fourth step included modeling with the discovery approach. In this process the dance teacher played the second musical example again. She allowed the children to listen to the musical selection for approximately one minute. She then asked the children to find their own dance space and asked the children to think about the movements she had demonstrated earlier. The dance teacher challenged them to find their own way to move reflectively to the music. The children heard the music again and they began to move. The teacher would call out the parts of the body they were moving and the quality of movement involved such as bending of knees, shaking of hands, or jumping after one hop. Without verbalizing, the dance teacher also modeled appropriate reflective movements.

The fifth step in the process focused solely on the discovery approach. The dance teacher played the third musical example. She asked the children to close their eyes and concentrate on the sounds they heard. She asked them to imagine themselves moving to the music: "How would they match their movements to the music?" When the music ended, she instructed them to open their eyes and to spread out in the space. She played the piece again and instructed them to move to the music with statements such as "Move to the music. Match your movements to the music you hear." At this point in the lesson, the teacher did not attempt to describe, model, or coach any of the movements the children created on their own. The children had learned for transfer and were now applying what they had previously learned to new musical settings.

This was the format for all of the lesson plans. Each lesson included three musical excerpts that highlighted one of the musical elements: rhythm, dynamics, form, texture, timbre, and tempo. The musicality pretest was administered one day before the treatment

period, and the posttest was administered after the treatment period ended. The test asked subjects to respond in movement to excerpts from the musical stimulus tape. In addressing all three major research questions, both pre- and posttests were videotaped for observation and rating by three panels of independent judges. Children in the study wore number tags for easier and anonymous identification.

Gender. The second independent variable was gender. Scores were examined and compared by gender in musicality and level of movement responses.

Aural Perception Ability. The third independent variable, aural perception ability, was determined by scores of tonal and rhythmic aptitude from Gordon's Primary Measures of Music Audiation test. Subjects in both the experimental group and the control group completed both parts of the PMMA before the treatment.

Design

The design used was a pretest-posttest equivalent-groups design. In this design, the aptitude test was administered to all groups before the treatment. The rhythmic aptitude test was given on the second day of the study, with the tonal aptitude test given the third day. The experimental group received the treatment in 10 lessons spread over a 3-week period. The control group did not receive the discovery approach to movement instruction but did receive music training. The music training included normal movement to music activities. The musicality and level of movement responses pretest was administered one day before the treatment and the posttest was administered one day after the treatment. The study took place during a summer session.

Procedure

The children met daily for a 45-minute music lesson over a 3-week period. The children in the experimental and control groups met together for the first part of the

daily music lesson taught by the music specialist. This first part of the lesson lasted approximately 10 minutes and included rhythmic activities and singing. After this 10-minute period, the groups were divided. The experimental group received a 20-minute period of movement instruction from the dance teacher, while the control group remained with the music specialist to continue with the music lesson. The instruction the control group received was based on conceptual learning and a singing-based approach. Both teachers in the study, the movement instructor and the music instructor, received considerable training and preparation. An attempt was made to make both types of instruction equally attractive to the students.

Internal Validity

Random assignment of subjects controlled for maturation, testing, statistical regression, selection bias, mortality, and interaction of selection and maturation. To help control for history, the study was held during the summer. This time of the year is most typically free of interruptions, with no major holidays to distract students. However, mortality was a factor for two possible reasons. First, the administration of the musical aptitude test seemed stressful for many children unaccustomed to this experience. Second, unexpected family events and summer camp enrollments had an effect on attendance.

Care was taken to properly train the independent judges in all rating and review procedures. Before using the rating scales, standards and exemplars forming the criteria of judgment were fully defined and explained. Viewing of videotapes was spaced accordingly to avoid fatigue by the independent judges. Experimenter bias was controlled by using outside observers who rated the subjects without any knowledge of their status. Experimenter bias was also controlled by hiring a professional music teacher and dance teacher to teach the students for the summer sessions. Students and parents were not told

of their assignment to control or experimental group. Further, the researcher developed music lessons for the control group that were carefully constructed, were appealing, and included typical singing games.

Chapter IV

Results and Data Analyses

This chapter will present the analyses of data collected for this study. SYSTAT was used to analyze the data for the first two research questions (1, 2). Three-way (group x gender x aural perception ability) ANOVAs were performed on gain scores for musicality and level of movement responses to answer research questions one and two. For all statistical tests, an alpha level of .05 was set. A ranking of posttest means for musicality and level of movement responses was performed to answer the third (3a and 3b) research question. The fourth research question was answered through qualitative methods: (a) judges observed videotapes of individual children previously identified as high and low in musicality, (b) the observations by a panel of five independent judges were coded and categorized and critical properties of each category identified, and (c) the relationships among the stated categories were summarized.

Data Analyses

Null Hypothesis 1: There is no difference in gain scores for musicality by treatment, gender, and aural perception ability.

Research question number one asked if the discovery approach to movement instruction, gender, and aural perception ability affected children's gain scores for musicality. A gain score was calculated for each subject by subtracting pretest from posttest. Table 2 shows the mean gain scores for musicality by group (experimental, $\underline{n}$ = 30; control, $\underline{n}$ = 31), gender (girls, $\underline{n}$ = 35; boys, $\underline{n}$ = 26) and aural perception ability (high, $\underline{n}$ = 37; low, $\underline{n}$ = 24).

Table 2

Mean Gain Scores for Musicality by Group, Gender, and Aural Perception Ability

Group		Gender		Aural Perception Ability	
Experimental	.28 (.58)	Female	.53 (.57)	High	.38 (.67)
Control	.36 (.73)	Male	.03 (.66)	Low	.23 (.64)

Table 3 summarizes the results of the three-way ANOVA. In a three-way (group x gender x aural perception ability) ANOVA performed on gain scores for musicality, gender was shown to be a significant main effect, $F(1, 53) = 8.80$, $p<.01$. That is, girls showed more development on musicality than boys. On the basis of this result, null hypothesis number one was rejected.

Table 3

Three-Way (Group x Gender x Aural Perception Ability) ANOVA on Gain Scores for Musicality

Source	SS	df	MS	F	p
Group	.001	1	.001	.003	.95
Gender	3.55	1	3.55	8.80	.005
PMMA	.38	1	.38	.93	.34
Group x Gender	.04	1	.04	.10	.75
Group x PMMA	.20	1	.20	.49	.49
Gender x PMMA	.10	1	.10	.25	.62
Group x Gender x PMMA	.05	1	.05	.11	.74
Error	21.41	53	.40		

Null Hypothesis 2: There is no difference in gain scores for level of movement responses by group, gender, and aural perception ability.

Research question number two asked if group, gender, and aural perception ability affected children's gain scores for level of movement responses. Table 4 shows the mean gain scores for level of movement responses by group (experimental, $n = 30$; control, $n = 31$), gender (girls, $n = 35$; boys, $n = 26$) and aural perception ability (high, $n = 37$; low, $n = 24$).

Table 4

Mean Gain Scores for Level of Movement Responses by Group, Gender, and Aural Perception Ability

Group		Gender		Aural Perception Ability	
Experimental	.18 (.52)	Female	.29 (.48)	High	.27 (.50)
Control	.27 (.41)	Male	.13 (.44)	Low	.17 (.42)

Table 5 summarizes the results of a three-way (group x gender x aural perception ability) ANOVA performed on gain scores for level of movement responses. The ANOVA revealed no significant main effects or interactions for group, gender, and aural perception ability for level of movement responses. That is, neither group, nor gender, nor aural perception ability affected the level of movement responses gain. On the basis of this result, null hypothesis number two failed to be rejected.

Table 5

Three-Way (Group x Gender x Aural Perception Ability) ANOVA on Level of Movement Responses Gain Scores

Source	SS	df	MS	F	p
Group	.03	1	.03	.14	.71 (n.s.)
Gender	.68	1	.68	3.49	.07 (n.s.)
PMMA	.18	1	.17	.90	.35 (n.s.)
Group x Gender	.61	1	.61	3.14	.08 (n.s.)
Group x PMMA	.004	1	.004	.02	.89 (n.s.)
Gender x PMMA	.62	1	.62	3.17	.08 (n.s.)
Group x Gender x PMMA	.35	1	.35	1.79	.19 (n.s.)
Error	10.36	53	.20		

Null Hypothesis 3a: There is no difference in musicality posttest scores for specific excerpts among the eight excerpts used.

Table 6 lists the musical excerpts and a panel of trained musical judges' evaluations of the excerpts' prominent style and prominent elemental changes.

Table 6

Judges' Evaluations of Prominent Style and Prominent Elemental Changes of Excerpts

Ex.	Style	Tempo	Prominent Elemental *Changes	Composer/ Performer
1	Jazz-related	Fast	rhythm	S. Joplin
2	American folk	Fast	timbre, rhythm	S. Foster
3	Pop (easy listening)	Slow	rhythm	M. Carey & Boyz II Men
4	Western art	Fast	timbre, dynamics	W. A. Mozart
5	American folk	Slow	timbre, form	Traditional
6	Western art	Slow	timbre, dynamics	B. Britten
7	Jazz-related	Slow	form, dynamics	W. Marsalis
8	Pop (hip-hop)	Fast	timbre	Technotronic

Note. * Predetermined by a panel of trained musicians

To answer the question of whether mean musicality responses differed across the excerpts, the musicality means for each musical excerpt were computed. The means for musicality posttest scores for the eight excerpts are shown ranked from highest to lowest in Table 7. Based on the judges' evaluations of the highest ranked excerpt, children had the greatest response to: (a) a musical style in a popular vein (hip-hop dance music), (b) prominent changes in timbre, and (c) a fast tempo. This excerpt, titled Raw, was performed by the group Technotronic. On the basis of these results, null hypothesis 3a was rejected.

Table 7

Means for Posttests on Musicality Scores by Excerpt

Ex.	Posttest Mean	Style	Prominent Elemental Change	Tempo
8	2.85	Pop (hip-hop)	Timbre	Fast
2	2.55	American folk	Timbre, Rhythm	Fast
1	2.41	Jazz-related	Rhythm	Fast
3	2.28	Pop (easy listening)	Rhythm	Slow
4	2.28	Western art	Timbre, Dynamics	Fast
6	2.13	Western art	Timbre, Dynamics	Slow
5	2.10	American folk	Timbre, Form	Slow
7	2.00	Jazz-related	Form, Dynamics	Slow

Null Hypothesis 3b: There is no difference in level of movement posttest scores for specific excerpts among the eight excerpts used.

To answer the question of whether mean level of movement responses differed across the excerpts, the level of movement means for each musical excerpt were computed. The means for level of movement responses posttest scores for the eight excerpts are shown ranked from highest to lowest in Table 8. Based on the judges' evaluations of the highest ranked excerpt, children had the greatest response to: (a) music in a Western art musical style (symphonic music from the Classical period), (b) prominent changes in timbre and dynamics, and (c) a fast tempo. This excerpt was from the first movement of Symphony No. 40, by Wolfgang Amadeus Mozart. On the basis of these results, null hypothesis 3b was rejected.

Table 8

Means for Posttests on Level of Movement Scores by Excerpt

Ex.	Posttest Mean	Style	Prominent Elemental Change	Tempo
4	1.93	Western art	Timbre, Dynamics	Fast
3	1.88	Pop (easy listening	Rhythm	Slow
8	1.63	Pop (hip-hop)	Timbre	Fast
1	1.63	Jazz-related	Rhythm	Fast
2	1.55	American folk	Timbre, Rhythm	Fast
6	1.48	Western art	Timbre, Dynamics	Slow
7	1.47	Jazz-related	Form, Dynamics	Slow
5	1.40	American folk	Timbre, Form	Slow

Descriptive Analysis

The fourth research question asked what were the qualitative differences in judges' descriptions of the movement between children scoring high and low in musicality. To answer this question, the researcher selected four children from the highest scorers (subjects: #6, 14, 28, and 33) and four children from the lowest scorers (subjects: #17, 18, 30, 39) as identified by the group of independent judges who rated the children for musicality. Children who scored high were identified as high musicality children and those who scored low were identified as low musicality children. The researcher made a decision to bypass the four lowest scorers due to their lack of any quantifiable movement. One subject, for example, sat inexpressively for the posttest. Another subject tied his shoes throughout the posttest, while two other subjects walked in the same manner for all musical examples and did nothing else. Instead of using the lowest scorers, this researcher selected four subjects from the lower end of the rating scale who demonstrated some type of measurable movement and an above minimum level of involvement. One of the lower scorers, subject #17, approached the mid-range among musicality scores. This subject received most of the judge's comments in the nonmusic-related category. Three of the four low scorers were in the treatment group. All four high scorers were girls and three of the low scorers were boys. All eight children were referred to in this analysis by their subject number. Table 9 lists the means for PMMA scores, pretests, posttests, and gain scores for musicality.

Table 9

Means for High and Low Musicality Groups

	PMMA		Musicality		
	Tonal	Rhythm	Pre	Post	Gain
High	35.75 (2.9)	32.50 (2.4)	3.29 (1.0)	3.82 (.5)	.53 (.56)
Low	30.80 (6.5)	27.80 (3.7)	1.72 (.54)	1.99 (.92)	.27 (.84)

A third panel of five independent judges viewed the videotape excerpts of this selected group of eight children, four high scorers and four low scorers. These five judges were graduate students in a university dance department, and all had extensive dance training and experience in teaching movement to young children. The judges were not told if the children were high or low scorers, or if they belonged to the experimental or control group. The judges viewed the movement responses of the selected group of eight children as they moved to four different musical excerpts representing four musical styles: American folk, Western art music, pop and jazz. The pop and jazz style excerpts were fast in tempo and the other two, the American folk and Western art excerpts, were slow in tempo.

The narrative script of each judge was transcribed, and then all judges' comments were analyzed and organized into categories. The emergent categorical headings were drawn from the judges' original narrative scripts. Table 10 reports these categorical headings. Each of the main categories, musical response, body patterns and body vocabulary, and style and creativity will be discussed in this section.

Table 10

Categorical Headings based on Narrative Scripts

Musical Response
Rhythm/Tempo
Flow/Phrasing
Mood/Emotion
Dynamics/Energy
Body Patterns and Body Vocabulary
Upper Body/Arms/Head
Lower Body: Locomotor
Whole Body
Space: Direction, Shape
Focus
Energy
Style and Creativity
Independence
Interactions/Relationships
Concentration
Reflective/Self-Awareness
Personal Style

Table 11 shows movement characteristics of the four children who scored high in musicality. The list is compiled from comments in the narrative scripts made by any one of the five judges, since any of their expert observations are relevant and meaningful. The researcher categorized their comments. This summarization of judges' comments will be used in the ensuing discussion section (See Appendix G for a complete summary of judges' comments).

Table 11

Summary of Movement Characteristics for Children with High Musicality

Musical Responses	Body Patterns and Vocabulary	Style/Creativity
rhythmical	circular locomotor activity	high affect
aware of syncopation	variety of locomotor activity	reflective of music
responsive to beat	holistic body movements	independent of group
reactive to silence	variety of vertical levels	awareness of theme
synchronized with tempo	generous spatial use	concentration
aware of phrase structure	directional changes	flexible, spontaneous
reactive to changes	assymetrical shapes	personal style
	eye focus and facial expressions	dramatic
	high energy	

Table 12 shows movement characteristics of the four children who scored low in musicality. The summary found in Table 12 is based on all of the judges' comments from the narrative scripts.

Table 12

Summary of Movement Characteristics for Children with Low Musicality

Musical Responses	Body Patterns and Vocabulary	Style/Creativity
arhythmic	random activity	low affect
not responsive to beat, tempo	stiff torso	dependent on group
not reflective of elements	few upper body movements, arms	lacked concentration
	unilevel	distracted or off-task
	lower body movements	not responsive to style
	gymnastics not associated with music	
	lack of personal space	
	symmetrical shapes	
	sporadic, erratic movements	
	repetitiveness	

In general, the judges were able to garner far more information from the high musicality children than the low musicality children as they observed the posttest videotapes. The mean represents the total number of judges' comments made for each body part and the elements of space and energy. In the area of body patterns and body vocabulary, for example, the high musicality children had a mean of 64.75 compared to a mean of 26.5 for low musicality children, including subject #17 approaching a mid-range score. In regard to the observations, this researcher counted the number of comments made by the judges in each subcategory of body patterns and body vocabulary. Based on these numbers, it appears that high musicality children used holistic body movements in this order: lower body/locomotor (18/60), arms (32), whole body (21), upper body (17), and head (13). In contrast, the low musicality children used less of the body and moved fewer times: lower body/locomotor (1/21), arms (10), whole body (10), and upper body (5). The judges also commented frequently on the use of the dance elements demonstrated by the high musicality children: space (34), direction (23), shape (20), focus (4), and energy (17). In comparison, the low musicality children did not receive as many comments in this same category: space (20), direction (20), shape (11), focus (3), and energy (7). Table 13 and Table 14 provide a comparison of the number and variety of body vocabulary for children in high and low musicality groups.

Table 13

Number and Variety of Body Vocabulary for High Musicality Children

	Subject #				No. of Judges'
	6	14	28	33	Comments
Upper Body	3	0	5	9	17
Arms	9	7	12	4	32
Head	9	1	3	0	13
Lower Body	4	3	5	6	18
-Locomotor	17	18	15	10	60
Whole Body	9	6	6	0	21
Space	6	8	15	5	34
-Direction	7	1	11	4	23
-Shape	12	1	6	1	20
Focus	3	0	1	0	4
Energy	8	1	5	3	17
Totals =	87	46	84	42	
$\underline{M}$ = 64.75					

Table 14

Number and Variety of Body Vocabulary for Low Musicality Children

	Subject #				No. of Judges'
	18	30	39	17	Comments
Upper Body	0	1	-3	1	5
Arms	0	3	-2	7	12, -2
Head	0	0	0	-1	-1
Lower Body	0	1	0	0	1
-Locomotor	3	8	16, -3	5	24, -3
Whole Body	3	4	0	3	10
Space	1	8	2, -1	9	21, -1
-Direction	0	6	7, -2	4, -1	20, -3
-Shape	0	6	1	4	11
Focus	0	3	0	0	3
Energy	1	3	2	1	7
Totals =	8	43	22	33	
M = 26.5					

Note. A minus sign (-) represents a negative comment by one of the judges indicating a lack of movement.

The means reported in Tables 13 and 14 are merely an indicator of the amount of activity that was commented upon and do not refer to the quality of movement. Based on the judges' comments, the high musicality children physically responded to musical styles in this order: American folk (67 comments; slow tempo), Western art (67 comments; slow tempo), pop (63 comments; fast tempo) and jazz-related (59 comments; fast tempo). Judges commented that low musicality children physically responded to musical styles in this order: American folk (36 comments; slow tempo), Western art (27 comments; slow tempo), jazz-related (24 comments; fast tempo), and pop (23 comments; fast tempo). As the numbers show, the high musicality children received almost twice as many comments as did the low musicality children. It is interesting to note that a pop-style musical excerpt with a fast tempo did not necessarily prove to be the most accessible for the low musicality group. Both groups received the most comments when moving to the American folk or Western art musical excerpts, both in a slow tempo.

Categorical Headings Based on Narrative Scripts

According to the judges, the high musicality children had a wide range of varied movements, provided evidence of theme development, and seemed to be more independent of the group. They responded to the musical excerpts with holistic body movements and often coordinated body parts in a highly sophisticated manner such as synchronizing upper body and lower body movement patterns. This section of the chapter will discuss the performance of the high musicality children and the low musicality children in relation to the main categories of musical response, body patterns and body vocabulary, and style and creativity.

Musical Response. High musicality children were seemingly aware of the music and were responsive to rhythm, tempo, flow and phrasing, mood, and dynamics. On the

other hand, low musicality children received very few comments in the musical response category. For example, the high scorer, #6, received a total of 30 descriptive comments in the musical response category, while the low scorer, #18, received nine negative comments in the same category. This was the typical pattern for high and low scorers in the category of musical response. Table 15 lists the number and variety of musical responses for both groups. Typical judges' comments for this high scorer were:

> Moves with the tempo of the music and then progresses with the music simultaneously; steps reflect the phrasing of the music; strong, emotional, and conscious reactions to changes in the music; and moves in a dramatic manner, seems to really feel the music . . .

As mentioned previously, the low scorer received nine negative comments for the same musical excerpts. The judges wrote:

> Felt rhythm finally for a moment; seems oblivious to the music; and moves randomly but does not respond to the music . . .

Table 15

Number and Variety of Musical Responses for High and Low Musicality Children

High Musicality Children		Low Musicality Children	
	No. Comments		No. Comments
Subject #		Subject #	
6	30	18	-9
14	25	30	-5, 2
28	-1, 25	39	-6
33	-1, 13	17	-1, 6
Total = -2, 93		Total = -21, 8	
M = 23		M = 2	

Note. A minus sign (-) represents a negative comment by one of the judges indicating a lack of movement.

Overall, the high musicality children were fairly reflective of the music being played. They displayed an awareness of musical elements and reacted to both prominent elemental changes and nuances in the music. The judges noted their responsiveness to changing rhythms and tempos, awareness of syncopation patterns, and underlying pulse and beat subdivisions. Noteworthy was a comment that these children often would react to silences and pauses in the music. Based on these comments, it appears that this group of high scorers was highly rhythmical. The high musicality children were able to move with the tempo of the music and then would progress with the flow of the music simultaneously. They created steps that reflected the phrasing of the music. In the area of dynamics, the children displayed keen awareness and demonstrated crescendos in the music with body level changes. A strong emotional response to the mood of the music was often demonstrated. This type of music-related movement is one of the characteristics that distinguishes high musicality children from low musicality children.

In contrast, low musicality children elicited very few statements from the judges. In many instances, the musical category was left blank. Judges made approximately 29 comments about the movement responses of the four lower scorers as they moved to four musical excerpts. Twenty-one of those comments were negative in nature. One of the subjects (# 17) received nine negative comments. The judges' statements included comments about off-task behavior, the lack of any musical awareness or reflective qualities, the random nature of the movement pattern, the observation that the pace of the movement did not match the tempo of the music, and the lack of consistency in movement patterns or tempos. It can be surmised that the low musicality children were generally nonreflective and musically unaware. According to the judges, their movements often seemed to have no connection to the music being played.

Body Patterns and Body Vocabulary. In the category of body movement patterns, judges often commented on the frequency and range of high musicality children using whole body movement, particularly the coordination of upper and lower body movements, either contrasting or complementary in nature. Several judges remarked that this was an advanced movement skill for children of this age-group. Another comment frequently mentioned was the wide variety of locomotor activity displayed, from walks, to runs, to leaps, including a variety of locomotor combinations. The use of the space was often described as generous. Several judges commented on the spatial awareness demonstrated by the young movers: the use of wide and big space; the formation of asymmetrical shapes; the changing of levels to high, middle, and low; the changing of direction; and the covering of a large area of space. One judge commented that the subject seemed to "Take up the space." While some of the high scorers tended to use a circular directional pattern used by low scorers as well, their circular locomotor patterns were subject to free and sudden changes in response to the changes in the music. Key words in the narrative scripts describing high scorers' movement patterns were flexibility, variety, spontaneity, and reflectiveness. Eye focus, use of facial expressions, and high energy levels were also important aspects of the high scorers' body vocabulary.

In contrast, the body movement patterns and body vocabulary of the low musicality children remained at a minimum level, with randomness being the key word. A common remark was that these children seemed to be oblivious to the music and that they did not respond in an appropriate manner. Basic locomotor movements appeared, such as jumping, skipping, and running, but often with no relationship to the music. Low musicality children often engaged in stunts such as headstands or somersaults without any connection to the music. Interestingly enough, the lower body movements dominated

because of the random locomotor movements. Most of the low scorers did not use many arm or hand gestures. Arms often remained at the sides with the torso being maintained in an upright position. The low musicality children rarely used any whole body movement, and seemed unaccustomed to holistic body movement.

In the area of spatial awareness, these children demonstrated a lack of both personal and general space. The low musicality children did not use level changes such as high, middle, and low, and rarely made use of directional changes. Other comments included observations of symmetrical patterns and shapes, the exclusive uses of circular patterns around the room, and the repetition of one type of movement. These comments point to very stable, pedestrian, and repetitive movements. The children would sometimes display a quick burst of energy, only to lose control or fade out in an erratic, sporadic fashion. Low musicality children had a tendency to focus on one type of movement and repeat it over and over again. This tendency led one of the judges to comment that the children seemed bound to their movement.

Style and Creativity. In the area of style and creativity, the high musicality children excelled. This area elicited the most comments from the judges, especially in regard to personal style. It seems that all four of the high scorers were able to quickly establish a sense of personal style. Some of the children were able to respond to a musical example in a dramatic fashion after only one hearing. It was as if they had been working on a choreographic theme, and for some, the working out of the theme was developed in time with the musical flow. A telling comment from one of the judges develops this idea: "It was as if the music was internalized within her." In another instance, a child combined a creative tap dancing style with patty-cake hand motions to a composition by Joplin. She and her partner responded to the style of the piece as a duo and are described further in the

next section. Pantomiming of musical instruments and everyday gestures was also common. Most often, pantomiming sequences involved locomotor patterns as well, such as galloping and pantomiming the playing of the violin combined. Other judges' comments in this area focus on dramatic portrayals and interpretations such as "Moves in a very dramatic manner, seems to really feel the music." One judge noted that one child (#33) did not respond as well to stylistic changes yet felt that most of the children were able to differentiate between the various musical styles and seemed to enjoy their performance.

Several judges stated that some of the high musicality children were fairly independent in regard to group activity. According to the judges, the high musicality children were able to maintain a level of creativity and concentration and did not seem distracted by others. One of the high scorers drew the attention of the entire group and seemed to enjoy the spotlight. Another child appeared to be driven by the music and maintained an intense inward focus for the duration of the musical example.

Even as they maintained their independence from the group and as individuals, some high musicality children engaged in interesting interactions. This usually involved one other child in the group. This partnering work was spontaneous yet carefully crafted in the short period available. One girl engaged in a complex pattern involving hand jive, foot patterned steps, and locomotor steps with another girl as a partner. This playful interaction lasted for the full duration of the musical excerpt, a fast rhythmic piece. This unique partner work occurred only once and, as successful as it seemed, did not reappear during any of the subsequent excerpts. All of the judges commented on a very powerful interaction that involved the entire group. In this case, the child created a dance-drama that occurred "center stage." The young dancer dramatically collapsed to the floor and laid very still until the end of the musical excerpt. She was able to draw in the energy and focus of

the rest of the group and made them react to her. She did this without any break in her concentration or her own focus.

In summary, the high musicality children did exceedingly well in developing a sense of personal style and seemed to do so with a flair for creativity as noted by the judges. They were generally reflective of the music and were able to concentrate on their movements.

The low musicality children did not receive as many positive comments from the judges in the style category. As noted before, the low musicality children were weak in many areas. As a result, the children were not seen to be independent or highly motivated. These children seldom engaged in any meaningful relationships, although off-task behavior often occurred in conjunction with at least one other person. The judges noted a lack of concentration and a lack of reflective self-awareness for all four of the low scorers. One of the subjects (#30) came close to establishing a personal style, but not at the level of the high scoring group. Only one of the low scorers, #17, seemed to warrant any strong commentary. According to one of the judges, this child moved in a creative manner and was the only child to make use of impromptu props. Some of the judges felt he was driven by a dramatic expression more than a musical expression. He was quite comical with his movement and seemed to be influenced by a theatrical urge rather than being musically inclined. It seemed to some of the judges that in his creativity he lost the musical focus.

The low musicality children did not receive many comments concerning style or creativity in relation to music. The lack of a personal style was due to certain factors commented upon by the judges: there was very little creative interaction, there was little evidence of concentration, the movements were not in response to the music, the gymnastic movements often were more important than reflective responses, and there was no direction

or purpose in movement patterns. One judge remarked that "This could be any music playing or no music at all," and felt that the actions would have stayed the same with or without music. The low musicality children did not seem to differentiate between the various musical styles and were often oblivious to the music being played.

In this study, there was some evidence of personal style among the high musicality children. Some of the judges thought that a few of the children established a personal style across all of the musical styles. For example, one child was identified as a lyrical dancer with light, flowing movements. Two judges thought this particular subject responded best to the more lyrical musical examples, even though the subject changed her body vocabulary to sharp, strong movements to match a more rhythmical, angular style when the music changed. Observations to this effect included "The music is not as lyrical, so it seems that the movement suffers in the aspect of using the whole body," and "In the first two examples she never stopped moving since that music was much more lyrical." A child in the low musicality group seemed to be highly driven by a personal tempo regardless of the tempo of the music. It appeared that his own momentum was much more a factor than responding appropriately to the music. One of the judges stated that "His movement was much faster than the music's tempo," and a second judge noted that "He is synchronized with the fast tempo (this time) yet it seems that he is a fast mover regardless of the musical example." It seems that a personal movement style plays an important part in the holistic response when children are allowed to respond freely in an improvisational manner.

Summary of Descriptive Analysis

In conclusion, based on the judges' narrative scripts, it was determined that there was a difference in the movement patterns between high and low musicality children. It seems that children with high musicality were able to make sense of the music, organizing,

categorizing and developing new ideas. These children were seen as being reflective of the music and were able to develop a sense of personal style. Children with low musicality seemed to lack in concentration and did not reflect their perceptions in their movements. They also did not seem to differentiate between musical styles.

One last comment needs to be added to the summary of this section of the chapter. The above comments are a synthesis of several judges' scripts. There were variations throughout in that not all of the high scorers performed at a high level in all categories for all of the musical examples, nor did all low scorers move poorly in all instances. This is probably due to individual interests, abilities, and differences. With this synthesis I have tried to provide a balance among the five narrative scripts and develop a movement profile for high musicality children and low musicality children.

Summary

This chapter presented the results and analyses of data collected for this study. The results showed that the main effect of gender was related to gain scores in musicality. That is, girls showed a greater gain than boys on musicality.

The results indicated that there were differences in musicality posttest means. Children in this study had the greatest response to hip-hop dance music, music with prominent elemental changes in timbre, and a fast tempo. Differences were found in level of movement posttest means as well. It was found that children in this study had the greatest response to Western art music, music with prominent elemental changes in timbre and dynamics, and a fast tempo.

There was a difference in movement between children who scored high and low in musicality. High musicality children seemed focused, appeared to be responsive to the musical elements, and tended to use whole body movements that were combined with an

expressive and reflective personal style. Low musicality children seemed to lack in concentration, were generally nonreflective of the music, and were limited in the use of their body vocabulary.

Chapter V

Discussion, Conclusions, and Implications

Purpose of the Study

The purpose of this study was to investigate the effects of a discovery approach to movement instruction on the musicality and level of movement responses on young children. A secondary purpose was to explore these effects as they relate to gender and aural perception ability. Additionally, this study sought to determine which musical styles or prominent elemental changes elicited the strongest musicality responses and level of movement responses. Further, qualitative differences in movement were described by judges who examined the movements of children who scored high and low in musicality.

The first two research questions addressed the effect of treatment, gender, and aural perception ability on the degree of gain in musicality and level of movement responses, children's kinesthetic responses to musical stimuli. All children received movement instruction. The experimental group received the discovery approach to movement instruction and the control group received a traditional singing approach with informal movement instruction. The treatment, a discovery approach to movement instruction, did not affect children's gain for musicality or level of movement. This supports the findings of Taebel (1974). Lewis (1989) noted that at least half of studies relating movement and music listening report nonsignificant findings. Young children may need a longer period of training with this mode of instruction to develop physically and cognitively. After all, Lewis (1989) found that longer treatment periods resulted in higher levels of skill acquisition, and that the effects of short-term instruction were not as significant. Future research needs to lengthen the amount of time allowed for treatment.

The main effect of gender on musicality gain scores was significant. Girls

outperformed boys in the area of musicality. This supports previous research that suggested that girls tend to develop sooner than boys in the area of rhythmic motor skills (Jordan, 1994; Sims, 1985), that girls benefit more from instruction than boys (Schleuter & Schleuter, 1985), and that girls do better than boys in movement to music tasks (Miller, 1983). Societal expectations, cultural and gender stereotypes, and biological and physiological characteristics may play a role in gender differences with regard to expressive, reflective movement responses. In many cultural and family circles boys are discouraged from dancing. Biological and physiological attributes of girls and boys may favor girls. Research shows differences in the developmental levels between girls and boys, particularly in physical coordination tasks to music.

Gender did not seem to affect gain scores for level of movement responses. In this measure, independent judges rated children's movement responses to prominent elemental changes in the music. It is possible that the emphasis on aural discrimination decreased gender differences for this particular task.

The musicality measure did not ask the panel of independent judges to rate children's responses to prominent elemental changes in the music. Instead, it asked if children were moving reflectively to the music, a concern more attuned to the perception of musical style. In a comparison of posttest means for musicality across all excerpts, the highest ranked mean, the popular style (hip-hop dance music), elicited the most musical response.

In a second comparison of posttest means for level of movement across all excerpts, the highest ranked mean, the classical style with prominent elemental changes in dynamics and timbre, elicited the most movement responses. These results support Hedden's findings (1981), who observed that, with respect to sequential listening skills development,

an awareness of dynamics is followed by the ability to discriminate differences in timbre.

Judges found differences in the movement patterns for high musicality children compared to low musicality children. Three main categories emerged from the descriptive analysis of the five judges' narrative scripts: musical response, body patterns and body vocabulary, and style and creativity. In contrast to the low musicality children, the high musicality children were found to be musically sensitive and reflective, demonstrated body vocabulary that was highly varied and developed, and established a personal style that was unique and creative. In the category of body patterns, judges commented on the frequency of whole body movement, particularly the coordination of upper and lower body movements, either contrasting or complementary in nature. Several judges remarked that this was an advanced movement skill for children of this age group. Another comment frequently mentioned was the wide variety of locomotor activity displayed, from walks, to runs, to leaps, including a variety of locomotor combinations. High scorers reacted to silence and pauses in the music. Other studies have found that, given the opportunity, children are able to form a personal style when moving to music (Moorhead and Pond, 1978).

In contrast, the body movement patterns and body vocabulary of the low musicality children remained at a minimum level with random movements. Basic locomotor movements appeared, such as jumping, skipping, and running, but with no obvious relationship to the music. Low musicality children often engaged in stunts such as headstands or somersaults without any connection to the music. Interestingly enough, the lower body movements dominated. This seems unusual to the researcher since it is common for children and adults with little movement experience to focus on moving their arms and hands, typically without any connection to the center of the body.

The contrasts between high and low musicality children may derive from differences in musical aptitude scores between the high and low groups. The researcher found that all four of the high scorers were in the 90th percentile: 92, 92, 96, and 99. The percentile rankings for the low scorers were: 90, 74, 71, and 56. This may explain the qualitative differences found. There needs to be further research to examine correlations between aural perception ability and the quality of movement responses.

The judges that described the movements of high musicality children commented frequently on the presence of personal style in their movements. Perhaps a further understanding of the role of personal movement style will help us to understand how people perceive and respond to music in different and unique ways. Music education researchers need to study the kinesthetic process as it interacts with aural perception ability and the dramatic, theatrical experience.

High musicality children's movements appeared purposeful and internally motivated. In writing about motivation and affect, Ormrod (1995) asserted that more motivated people achieve success at higher levels, increase their energy levels and activity levels, become goal-oriented; and participate in cognitive engagement.

Based on the judges' evaluations and descriptions, it was determined that there were qualitative differences in the movement patterns between children high and low in musicality. These differences were related to high aural perception scores and could be categorized as high in musical responses, body patterns and vocabulary, and style and creativity. Children who move musically make sense of the music; that is, they develop and organize their responses in association with the character of the music, its style and prominent elemental dimensions. Children who do not move musically seem to lack body control, be disinterested, or be bored. Further research may investigate if this lack of a

reflective response is developmental or due to lack of comfort in the kinesthetic mode. As the criteria for evidence of bodily-kinesthetic intelligence are delineated, research may focus on the study of its development over time and in various settings, to gain more knowledge about the relationship between bodily-kinesthetic intelligence and aural perception of musical sound.

Summary

This study sought to determine the effects of a discovery approach to movement instruction, gender, and aural perception ability on children's movement responses to musical stimuli. The study was designed to investigate a child-oriented approach to movement instruction and to compare its effect with a traditional singing-based approach. Both approaches employed music instruction and some type of movement.

To this end, the researcher designed a study that examined the following:

1. The effects of treatment, gender, and aural perception ability on gain scores in musicality.

2. The effects of treatment, gender, and aural perception ability on gain scores in level of movement responses.

3. The type of music (style and prominent elemental dimension) that evoked the highest response in musicality and level of movement responses.

4. The nature of the movement responses for high musicality children compared to low musicality children.

Conclusions of the Study

Based on the results of this study, it can be concluded that:

1. K-1 girls showed more development of musicality than K-1 boys after 3 weeks.

2. Neither treatment nor gender nor aural perception ability affected gains on level

of movement after 3 weeks.

3. The means for all groups showed a positive gain after 3 weeks.

4. Music characterized as popular in style with prominent timbre changes and a fast tempo evoked the highest responses in musicality.

5. Music characterized as classical in style with prominent timbre and dynamic changes and a fast tempo evoked the highest responses in level of movement.

6. Children with high musicality were sensitive to musical events, kinesthetically sophisticated in their movement responses, and able to establish a sense of personal style, as compared to low musicality children.

Implications for Future Research

Possibilities and directions for new research are numerous. Although the effects of treatment were not significant, the researcher believes that long-term instruction of this type may prove more beneficial (Lewis, 1989; Sims, 1985). Future investigations studying any of these areas are warranted. These studies could be qualitative or quantitative in nature or a combination of both, as is this particular investigation.

The descriptive analysis closely examined the movement responses of eight subjects. It was determined that high musicality children performed in a more reflective and musically sensitive manner than low musicality children. It may be useful in the future to replicate this study with a larger sample to further determine the role movement plays in musical understanding. This valuable information would positively influence the ways we teach music to young children and would assist researchers in constructing a theory of bodily-kinesthetic intelligence as it relates to musical learning.

A problem that surfaced during the viewing of videotapes was the difficulty the judges had in following the movements of a particular student for the full length of the

musical example. In the level of movement test, judges were required to view a student's movement responses to an obvious musical change within a 40-second span of time. This time span included 20 seconds before and after the obvious musical change. Some judges remarked that this was a difficult task for them. The recommendation that emerges is to use multiple cameras and develop new videotaping strategies.

Although the children in this study were not verbalizing, the movement responses gave clues as to their ability to categorize the style of the music. The related literature reveals that nonverbal means of instruction for young children are needed. A validity measure used in this study found that most of the children could not verbally express what they heard in the music or how their movements matched the music. A need exists for studies that examine the interactions between style categorizations, the elemental dimensions, and movement responses. Investigations of this nature will help us to understand how children learn music. Some of the questions that need to be asked are:

1. What are the social, societal, and cultural influences that predispose young girls to more musical bodily-kinesthetic responses?

2. What is the relationship between bodily-kinesthetic intelligence and musical intelligence?

3. Which practices lead to bodily-kinesthetic intelligence?

4. Why do popular styles, timbre and dynamic changes, and fast tempos evoke higher responses in young children?

Serafine (1988) has hypothesized that children under the age of eight may process music differently from older children and adults. She recommends that we take special care with task construction and design a variety of tasks accessible to children. Children need to be afforded ample opportunities to define their own parameters. We need to focus on

children's development by providing age-appropriate activities, while defining criteria for evidence of bodily-kinesthetic intelligence.

One of the meaningful results of this study was the effect of gender. The research literature tells us that there are definite gender differences with different types of music tasks. It also indicates that some of these differences decrease with age. Perhaps future studies may address what influences predispose girls to kinesthetic intelligence. Would earlier interventions affect boys' attitudes and abilities?

There is a body of literature proposing theories of the interconnectedness of mind and body, that is, the idea that humans learn much of what they know through the kinesthetic sense. This is especially true for how young children learn. According to the related literature, there is a need to develop and improve movement instruction used in preschool and elementary general music curricula. Some researchers have suggested that one way to reach this goal would be to provide enriching opportunities for young children to move to music in expressive, meaningful, and reflective ways. Music educators and researchers may want to learn as much as they can about bodily-kinesthetic intelligence and its relationship to musical learning and musical perception, societal and school influences, and teaching approaches.

APPENDIX A:

Musical Stimulus Tapes: A Description of Treatment and Pre- and Posttest Stimulus Tapes

Musical Stimulus Tape

Listening Judge #____
Name_____

Category of Music:_____

Ex. #	Prominent Elemental Change	Time	Genre Y/N	Appeal to Children Y/N	Tempo F/S
1	Pitch Form Timbre Rhythm Dynamics Tempo				
2	Pitch Form Timbre Rhythm Dynamics Tempo				
3	Pitch Form Timbre Rhythm Dynamics Tempo				
4	Pitch Form Timbre Rhythm Dynamics Tempo				
5	Pitch Form Timbre Rhythm Dynamics Tempo				
6	Pitch Form Timbre Rhythm Dynamics Tempo				
7	Pitch Form Timbre Rhythm Dynamics Tempo				
8	Pitch Form Timbre Rhythm Dynamics Tempo				

Musical Stimulus Tape-Final Selections
Category of Music Pop-Rock

Ex. #	Title	Source/ Composer	*Elemental Change	Time in Secs.	Genre Y/N	Appeal Y/N	Tempo F/S
1	Raw	Technotronic	Timbre- 2:3	9, 24, 39	Y-2:3	Y-2:3	F-3:3
2	Ade-Catherine Wheel	David Byrne	Timbre- 2:3	20, 36	Y- 2:3	Y- 2:3	F- 2:3
3	All That Glitters	Cover Girls	Timbre- 2:3 Form- 3:3	12, 29, 45	Y- 3:3	Y- 2:3	F- 3:3
4	Let's Get Funkee	C&C Music Factory	Timbre or Texture- 2:3 Form- 3:3	12, 26	Y- 3:3	Y- 3:3	F- 3:3
5	Funeral for a Friend	Elton John	Rhythm- 3:3	20, 75	Y- 3:3	Y- 2:3	S- 3;3 (S-F)
6	Thank You	Boyz II Men	Texture- 2:3 Form- 2:3	21, 31	Y- 3:3	Y- 3:3	S- 2:3
7	All I Really Want	Alanis Morrisette	Pitch 2:3 Form 2:3	25	Y-2:3	Y-2:3	F- 3:3
8	Always Be My Baby	Mariah Carey	Rhythm- 3:3	22, 47	Y- 3:3	Y- 3:3	S- 3:3

*3:3 = Three of three judges agree; 2:3 = Two of three judges agree

Musical Stimulus Tape-Final Selections
Category of Music Folk

Ex. #	Title	Source/ Composer	*Elemental Change	Time in Secs.	Genre Y/N	Appeal Y/N	Tempo F/S
1	Ring, Ring Banjo	Stephen Foster	Timbre- 2:3 Rhythm- 2:3	10, 31, 62	Y- 3:3	Y- 3:3	F- 3:3
2	New Kid on Bayou	Queen Ida	Timbre- 3:3	14	Y- 3:3	Y- 2:3	F- 3:3
3	This Land is Your Land	Lee Greenwood	Timbre- 3:3 Form- 2:3	54, 115	Y- 3:3	Y- 3:3	F- 3:3
4	Foggy Mountain Breakdown	Lester Flatt & Earl Scruggs	Timbre- 2:3	22, 26, 50	Y- 3:3	Y- 2:3	F- 3:3
5	Battle Hymn of Republic	Matt Glaser & J. Schwab	Timbre- 3:3 Form- 2:3	21, 47	Y- 2:3	Y- 2:3	S- 3:3
6	Puff the Magic Dragon	Peter, Paul & Mary	Timbre-3:3 Form-2:3		Y- 3:3	Y- 3:3	S- 2:3
7	Blues a bebé	Beausoleil	Timbre- 2:3	7, 42	Y- 2:3	Y- 2:3	S- 2:3
8	I'm going to leave Old Texas Now	Riding in the Sky	Texture- 3:3	16-18	Y- 3:3	Y- 3:3	S- 2:3

*3:3 = Three of three judges agree; 2:3 = Two of three judges agree

Musical Stimulus Tape-Final Selection
Category of Music Western Art Music

Ex. #	Title	Source/ Composer	*Elemental Change	Time in Secs.	Genre Y/N	Appeal Y/N	Tempo F/S
1	Symphony No. 40, I	Mozart	Timbre- 2:3 Dynamics- 2:3	20 , 30	Y- 3:3	Y- 3:3	F- 2:3
2	Rondo alla Turca	Mozart	Form- 3:3 Form & Timbre- 2:3	12, 24, 35	Y- 3:3	Y- 3:3	F- 2:3
3	Buckaroo Holiday, Rodeo	Copland	Rhythm or Timbre- 2:3 Timbre- 3:3	14, 30, 53	Y- 3:3	Y- 3:3	F- 3:3
4	Tanz, Carmina Burana	Orff	Dynamics or Rhythm- 2:3 Dynamics or Timbre- 2:3	20, 40, 70	Y- 3:3	Y- 3:3	F- 2:3
5	Hall of the Mountain King, Peer Gynt Suite	Grieg	Tempo- 3:3 Timbre- 2:3	60	Y- 3:3	Y- 3:3	S/F- 3:3
6	Allegro, La Primavera Le Quattro Stagioni	Vivaldi	Dynamics or Timbre- 2:3	6, 16, 28, 60	Y- 3:3	Y- 3:3	S- 3:3
7	Greensleeves	Vaughan Williams	Timbre- 3:3	23, 60	Y- 3:3	Y- 3:3	S- 3:3
8	Young Person's Guide to the Orchestra	Britten	Dynamics- 2:3 Timbre- 3:3	23, 40, 60	Y- 3:3	Y- 2:3	S- 3:3

*3:3 = Three of three judges agree; 2:3 = Two of three judges agree

Musical Stimulus Tape-Final Selections
Category of Music Jazz and Jazz-Related

Ex. #	Title	Source/ Composer	*Elemental Change	Time in Secs.	Genre Y/N	Appeal Y/N	Tempo F/S
1	Opus One	DMD Big Band	Timbre- 3:3	24, 37	Y- 3:3	Y- 3:3	F- 3:3
2	Potato Head Blues	Louis Armstrong	Timbre- 3:3	38, 60	Y- 3:3	Y- 2:3	F- 2:3
3	Honky Tonk	Scott Joplin	Rhythm- 2:3		Y- 3:3	Y- 3:3	F- 3:3
4	Albert's Alley	Robert Cray	Timbre- 3:3	13, 34	Y- 3:3	Y- 3:3	F- 3:3
5	Body n' Soul	Coleman Hawkins & His Orchestra	Timbre- 2:3	(23) 40, 64	Y- 3:3	Y- 2:3	S- 3:3
6	When it's Sleepytime down South	Wynton Marsalis	Dynamics- 2:3 Form- 3:3	29, 42	Y- 3:3	Y- 3:3	S- 3:3
7	Strange Meadowlark	Dave Brubeck	Form- 2:3 or Timbre- 2:3	33	Y- 3:3	Y- 3:3	S- 3:3
8	Doing Things Together	Sweet Honey in the Rock	Timbre- 3:3	12, 26	Y- 3:3	Y- 3:3	S- 3:3

*3:3 = Three of three judges agree; 2:3 = Two of three judges agree

Stimulus Tape
Musical Excerpts for Treatment
Movement Lessons

Lesson #1-Form/Texture-Fabric
1. Thank You - both thin & thick
2. Blues a bebe - both thin & thick
*3. Allegro, La Primavera, Le Quattro Stagioni - both thin & thick

Lesson #2-Dynamics/Energy
1. Puff the Magic Dragon - weak
2. All I Really Want - strong
*3. Hall of the Mountain King, Peer Gynt Suite - both weak & strong

Lesson #3-Timbre/Color
1. Albert's Alley - bright
2. Doing Things Together - dark
*3. Rondo Alla Turca, Piano Sonata in A Major - both bright & dark

Lesson #4-Rhythm/Motion
1. Let's Get Funkee - driving
2. Foggy Mountain Breakdown - driving
*3. Greensleeves - both still & confined

Lesson #5-Form/Texture
1. I'm Going to Leave Old Texas - both thin & thick
2. This Land is Your Land - both thin & thick
*3. Tanz, Carmina Burana - mostly thick

Lesson #6-Dynamics/Energy
1. Body n' Soul - weak
2. Strange Meadowlark - weak
*3. Buckaroo Holiday, Rodeo - strong

Lesson #7-Timbre/Color
1. Ade, Catherine Wheel - dark
2. All That Glitters - bright
*3. New Kid on the Bayou - bright

Lesson #8-Rhythm/Flow
1. Potato Head Blues - free
2. Opus One - free
*3. Funeral for a Friend both confined & free

* = MUSICAL EXCERPTS TO BE USED FOR REVIEW PURPOSES.

Musical Stimulus Tape
Pre/Posttest Musical Excerpts

Instructions for Teachers:

I have made three stimulus tapes, one for each of the three classes. There are eight excerpts per tape, with each tape having a different random order.

Tape	#1	#2	#3
	2	3	8
	6	5	7
	3	8	4
	5	7	1
	8	4	2
	7	1	6
	4	2	3
	1	6	5

Each excerpt has been recorded twice. This is so the children can listen the first time without any movement. The second time the excerpt is heard, the children are asked to move. There are 5 blank seconds between each excerpt.

Musical Excerpts:

Title	Composer/Artist	Style	Tempo
1. Raw	Technotronic	Pop/Rock	Fast
2. Honky Tonk	S. Joplin	Jazz/Jazz-related	Fast
3. Always Be My Baby	M. Carey	Pop/Rock	Slow
4. When It's Sleepytime	W. Marsalis	Jazz/Jazz-related	Slow
5. Symphony No. 40, I	W. Mozart	Western Art Music	Fast
6. Ring, Ring, Banjo	S. Foster	Folk	Fast
7. Young Person's Guide	B. Britten	Western Art Music	Slow
8. Battle Hymn of the Republic	Traditional	Folk	Slow

APPENDIX B:

Musicality in Movement Responses Test and Scoring Rubric

Musicality in Movement Responses Form (MMRF)
Rubrics for the Rating Scale to be used with Musicality Scores

Level Descriptors - Musicality in Movement Responses

Level	Overall Descriptor for Musicality in Movement
1	The movement response shows no evidence of music-related achievement, and reveals that the subject may be unaware of any style or elemental characteristics and is failing to respond.
2	The movement response shows little evidence of music-related achievement and reveals that the subject has little awareness of any style or elemental characteristics.
3	The movement response shows some evidence of expressive achievement or reveals that the subject is attending to some of the music-related elements occasionally in performance.
4	The movement response shows fairly consistent evidence of music-related achievement. The performance is accurate and expressive elements are addressed in the subject's performance.
5	The movement response shows exemplary evidence of achievement in expressive aspects that are music-related throughout the subject's performance.

Musicality in Movement Responses Form (MMRF)
Musicality Scores

Judge #___ Name___________

Please rate each child from 1 to 5 as to the judged level of musicality in the *movement response. Please refer to the rubrics and video exemplars provided.

Pre ___ Post ___

Subject: Musical Excerpts:

#	Ex. 1	Ex. 2	Ex. 3	Ex. 4	Ex. 5	Ex. 6	Ex. 7	Ex. 8	Total
	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	
	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	
	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	
	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	
	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	
	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	
	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	
	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	
	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	
	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	
	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	
	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	
	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	
	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	
	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	

*Each subject will be viewed eight times. Each of the eight viewings will be approximately two minutes in length.

APPENDIX C:

Level of Movement Responses Test and Scoring Rubric

Level of Movement Responses Form (LMRF)
Rubrics for the Rating Scale to be used with Level of Movement Scores

Level of Movement Responses - Level Descriptors
Movement Responses to Prominent Elemental Changes

Rate each child from a scale from 1 to 3, with 3 representing the highest score possible.

The timing of the prominent elemental change for each musical excerpt is indicated in the judge's rating sheet (The timing and the predetermined musical element for each musical excerpt were identified by a panel of trained musicians.).

Level	Overall Descriptor for Level of Movement Responses
1	The movement response shows little evidence of a music-related achievement that corresponds to the prominent elemental change indicated.
2	The movement response shows some evidence of a music-related achievement that corresponds to the prominent elemental change indicated.
3	The movement response shows exemplary evidence of a music-related achievement that corresponds to the prominent elemental change indicated.

Level of Movement Responses Form (LMRF) (Random order #1)
Judge # ___ Name _____ Group ____

A prominent elemental change in each musical excerpt will occur as timed. Indicate to what level the subject responds when the change occurs.

Level of response: 1 2 3
Refer to the rubric sheet for descriptions of each level of response.

Subject:

#	Ex. #	Timing	Level of Response	Element(s)	Total Score	#	Ex. #	Timing	Level of Response	Element(s)	Total Score
	1	50 s.	1 2 3	Rhythm			1	50 s.	1 2 3	Rhythm	
	2	62 s.	1 2 3	Rhythm			2	62 s.	1 2 3	Rhythm	
	3	22 s.	1 2 3	Rhythm			3	22 s.	1 2 3	Rhythm	
	4	28 s.	1 2 3	Dynam. (Timbre)			4	28 s.	1 2 3	Dynamics (Timbre)	
	5	21 s.	1 2 3	Form (Timbre)			5	21 s.	1 2 3	Form (Timbre)	
	6	40 s.	1 2 3	Timbre (Dynan.)			6	40 s.	1 2 3	Timbre (Dynam.)	
	7	42 s.	1 2 3	Form (Dynam.)			7	42 s.	1 2 3	Form (Dynam.)	
	8	28 s.	1 2 3	Timbre			8	28 s.	1 2 3	Timbre	
	1	50 s.	1 2 3	Rhythm			1	50 s.	1 2 3	Rhythm	
	2	62 s.	1 2 3	Rhythm			2	62 s.	1 2 3	Rhythm	
	3	22 s.	1 2 3	Rhythm			3	22 s.	1 2 3	Rhythm	
	4	28 s.	1 2 3	Dynan. (Timbre)			4	28 s.	1 2 3	Dynamics (Timbre)	
	5	21 s.	1 2 3	Form (Timbre)			5	21 s.	1 2 3	Form (Timbre)	
	6	40 s.	1 2 3	Timbre (Dynam.)			6	40 s.	1 2 3	Timbre (Dynam.)	
	7	42 s.	1 2 3	Form (Dynam.)			7	42 s.	1 2 3	Form (Dynam.)	
	8	28 s.	1 2 3	Timbre			8	28 s.	1 2 3	Timbre	

Level of Movement Responses Form (LMRF) (Random order #2)
Judge # ___ Name _____ Group _____

A prominent elemental change in each musical excerpt will occur as timed. Indicate to what level the subject responds when the change occurs.

Level of response: 1 2 3
Refer to the rubric sheet for descriptions of each level of response

Subject:

#	Ex. #	Timing	Level of Response	Element(s)	Total Score	#	Ex. #	Timing	Level of Response	Element(s)	Total Score
	1	22 s.	1 2 3	Rhythm			1	22 s.	1 2 3	Rhythm	
	2	28 s.	1 2 3	Dynamics (Timbre)			2	28 s.	1 2 3	Dynamics (Timbre)	
	3	21 s.	1 2 3	Form (Timbre)			3	21 s.	1 2 3	Form (Timbre)	
	4	40 s.	1 2 3	Timbre (Dynam.)			4	40 s.	1 2 3	Timbre (Dynam.)	
	5	42 s.	1 2 3	Form (Dynam.)			5	42 s.	1 2 3	Form (Dynam.)	
	6	28 s.	1 2 3	Timbre			6	28 s.	1 2 3	Timbre	
	7	50 s.	1 2 3	Rhythm			7	50 s.	1 2 3	Rhythm	
	8	62 s.	1 2 3	Rhythm			8	62 s.	1 2 3	Rhythm	
	1	22 s.	1 2 3	Rhythm			1	22 s.	1 2 3	Rhythm	
	2	28 s.	1 2 3	Dynam. (Timbre)			2	28 s.	1 2 3	Dynamics (Timbre)	
	3	21 s.	1 2 3	Form (Timbre)			3	21 s.	1 2 3	Form (Timbre)	
	4	40 s.	1 2 3	Timbre (Dynam.)			4	40 s.	1 2 3	Timbre (Dynam.)	
	5	42 s.	1 2 3	Form (Dynam.)			5	42 s.	1 2 3	Form (Dynam.)	
	6	28 s.	1 2 3	Timbre			6	28 s.	1 2 3	Timbre	
	7	50 s.	1 2 3	Rhythm			7	50 s.	1 2 3	Rhythm	
	8	62 s.	1 2 3	Rhythm			8	62 s.	1 2 3	Rhythm	

Level of Movement Responses Form (LMRF) (Random order #3)
Judge # ___ Name _____ Group ____

A prominent elemental change in each musical excerpt will occur as timed. Indicate to what level the subject responds when the change occurs.

Level of response: 1 2 3
Refer to the rubric sheet for descriptions of each level of response
Subject:

#	Ex. #	Timing	Level of Response	Element(s)	Total Score	#	Ex. #	Timing	Level of Response	Element(s)	Total Score
	1	21 s.	1 2 3	Form (Timbre)			1	21 s.	1 2 3	Form (Timbre)	
	2	40 s.	1 2 3	Timbre (Dynam.)			2	40 s.	1 2 3	Timbre (Dynam.)	
	3	42 s.	1 2 3	Form (Dynam.)			3	42 s.	1 2 3	Form (Dynam.)	
	4	28 s.	1 2 3	Timbre			4	28 s.	1 2 3	Timbre	
	5	50 s.	1 2 3	Rhythm			5	50 s.	1 2 3	Rhythm	
	6	62 s.	1 2 3	Rhythm			6	62 s.	1 2 3	Rhythm	
	7	22 s.	1 2 3	Rhythm			7	22 s.	1 2 3	Rhythm	
	8	28 s.	1 2 3	Dynamics (Timbre)			8	28 s.	1 2 3	Dynamics (Timbre)	
	1	21 s.	1 2 3	Form (Timbre)			1	21 s.	1 2 3	Form (Timbre)	
	2	40 s.	1 2 3	Timbre (Dynam.)			2	40 s.	1 2 3	Timbre (Dynam.)	
	3	42 s.	1 2 3	Form (Dynam.)			3	42 s.	1 2 3	Form (Dynam.)	
	4	28 s.	1 2 3	Timbre			4	28 s.	1 2 3	Timbre	
	5	50 s.	1 2 3	Rhythm			5	50 s.	1 2 3	Rhythm	
	6	62 s.	1 2 3	Rhythm			6	62 s.	1 2 3	Rhythm	
	7	22 s.	1 2 3	Rhythm			7	22 s.	1 2 3	Rhythm	
	8	28 s.	1 2 3	Dynamics (Timbre)			8	28 s.	1 2 3	Dynamics (Timbre)	

APPENDIX D:

Laban-Based Movement Descriptors List

Laban-Based Movement Descriptors List

Summary of Movement Concepts

BODY - WHAT

Basic Activities

1. Gesture
2. Stepping
3. Locomotion
4. Jumping
5. Turning
6. Stillness

Body Parts:

Used

Emphasized

Leading

Body Shape:

Wide

Narrow

Twisted

Round

Symmetrical

Asymmetrical

Body Zones:

Upper half

Lower half

Right Side

Left Side

Front half

Back half

Body Base:

Standing

Sitting

Kneeling

Lying

Body Flow:

Simultaneous

Successive

Laban-Based Movement Descriptors List

Summary of Movement Concepts, cont'd.

SPACE - WHERE

General: Everywhere

Personal: Located

Extensions: Large

Small

Levels: High

Medium

Low

Directions: Forward

Backwards

Space Terms: Over, under, around

Near, far, toward

Away, from, onto, into

Above, below

Floor Patterns: Straight

Angular

Closed Curve

Open Curves

Laban-Based Movement Descriptors List

Summary of Movement Concepts, cont'd.

RELATIONSHIP - WITH WHOM

Partner, Trios, Groups

Matching

Mirroring

Contrasting

Meeting and Parting

Passing

Interacting

Action and response

Assisting movement or balance

Complementing shape

Advancing and retreating

Spatial relationships

(under, over, around

through, on, linked)

Canon movement

Sculpting into shape

Formations

(linear, solid, and irregular)

Leaping and following

Dramatic relations (Dance dramas)

APPENDIX E:

Teaching Method: Movement Lesson Plans

May 23, 1996

Dear Parents/Guardians:

Hello and welcome to the Summer Arts Fun Program! Please note that the three-week session in music and movement instruction is scheduled for June 3-21. The session promises to be lots of fun for everyone. Children will wear name tags the first day and will wear number tags the rest of the session. Please read the important information below prior to our first class on Monday, June 3rd. Thank you very much!

Cheerfully yours,

Isabel Barbara O'Hagin

INFORMATION:

Dates: Three-week session from June 3-21

Location: University of Arizona, School of Music, room 121 (see U of A map)
Located in the Fine Arts Complex, 3rd bldg from the southeast corner of Speedway and Park Avenue (by the pedestrian underpass)

Times: There are three classes. Classes are 45 minutes each.
*****Your child has been assigned to the following class:**
Class #1 - 4:30 pm ___
Class #2 - 5:15 pm ___
Class #3 - 6:00 pm ___

Parking: There is a visitors' parking garage on the northeast corner of Speedway and Park Avenue. The parking fee is $1.00 per hour. There is also parking along residential areas behind the parking garage and by Carl's Jr. restaurant.

Emergencies: You will be asked to fill out a form on whom to contact in case of an emergency.

PROCEDURES:

Absences: It is important that children be in attendance everyday. This program is offered as part of my doctoral research study. Please call me if your child cannot attend that day.
*Please remember: Call if you will not be able to attend.

Promptness: Please arrive on time for your appointed class.

Behavior: Children will be asked to stay on task and to be respectful of others.

Parent Viewing: I am asking parents to wait outside the room until the class session has ended.

Map: You will find a map of the campus attached to this sheet.

Lesson 1

I. Warmup:

A. Finding your own space, Respond to drum signal, "Zero" position

B. Start and Stop, Freeze like a statue

C. Match the drum beat

D. Jumping: toe-ball-heel landing and knees over toes

II. Body Technique:

A. Body alignment: elongation of the back

B. Feeling the breath in your body: popcorn popping, toast popping

C. Rag doll position

D. Walk on toes, on heels, walk through: mud, cotton candy, clouds

III. Movement to Music Instruction:

A. Concept Presentation: **Form/Texture (Fabric) Thin - to - Thick**

1. Presentation of the Visual Analogy

Demonstrate the concept with three different fluids of various viscosity (thick, medium, thin) contained in three tall beakers. Drop a rock into each beaker and ask the children to observe. Demonstrate in movement the motion of each rock as it is released in the fluid. Repeat the experiment using different items such as marbles or beads and have a child assist you with the movement.

2. Teacher Demonstration

Musical Excerpt #1: **Thank You - Boyz II Men**

Play musical excerpt #1 and move to it in three different ways, from one end of the continuum to the other (bipolar qualities). Ask the children which of the three movement sequences best matches the music played. Play the music again and ask the children to listen with this in mind. Demonstrate the movement sequence(s) the class chose. Relate the movement to the concept presented in the visual analogy demonstration.

3. Discussion and Problem-Solving:

After your two modeling sequences, check to see if the children have the same opinion as before (The teacher should take care not to criticize the children's answers.). Tell the children they will have an opportunity to move to another musical example using movements they create themselves. Assist them by describing and modeling the body movements they create that best reflect the music being played.

B. Teacher Modeling through the Discovery Approach (Teacher's script)

Musical Excerpt #2: **Blues a bebé - Beausoleil**

Play musical excerpt #2. Allow the children to listen to the musical selection for approximately one minute. Direct the children to find their own space to move. Ask the children to think about the movements you demonstrated earlier. Can they find their own way to reflect in movement what they are hearing? "Match your movements to the music you hear." Play the music again and encourage the children to move to the music. Call out the parts of the body they are moving and comment on the quality of movement involved: bending--of knees, shaking--of hands, twisting--the torso, two jumps--followed by two hops, etc. Without

verbalizing, model appropriate reflective movements to the music.

C. The Discovery Approach (Teacher's script)

Musical Excerpt #3: **Allegro, La Primavera, - A. Vivaldi**

Play all of musical excerpt #3. Ask the children to close their eyes and concentrate on the sounds they hear. Tell them to "Imagine yourself moving to the music." "How will you match your movements to the music?" When the music is over, instruct them to open their eyes and to spread out in the space. Play the piece again and instruct them to move to the music. "Move to the music. Match your movements to the music you hear." At this point in the lesson do not describe, model, or coach any of the movements the children are creating on their own. You should not engage in any verbal reinforcement, i.e., verbal praise.

Lesson 2

I. Warmup: [repeat exercises from Lesson 1]

A. Dodging- moving about without touching anyone else

B. Match the drum beat: walk, march, stamp, tiptoe steps

C. Move across space with lots of energy, then with very little energy

II. Body Technique:

A. Body alignment exercises with breath: Sit with soles of feet together

B. Contraction and stretch

C. Spanking runs and prances

D. Keeping the scarf on: Run with a scarf in front of the body, run in a circle, then put the scarf away and remember the feeling

E. Body Isolations-using the movement boxes: Glue movement-like photos to a cardboard box. Children select a photo and imitate the movement

III. Movement to Music Instruction:

A. Concept Presentation: **Dynamics (Energy): Weak - to - Strong**

1. Presentation of the Visual Analogy

Demonstrate with a hair dryer that has three speeds: high, medium, and low. Aim the hair dryer at one object such as a chiffon scarf and ask the children to observe the differences in movement as you vary the energy settings. "What happens when the high energy setting is used? When the low energy setting is used?"

Demonstrate the various movements of the scarf with your own body movements.

"Watch as I move the way the scarf moves. Can someone help me? Can you move your body in these different ways to match the movement of the scarf?" Repeat the experiment having a child assist you. You may also repeat the experiment using different objects such as soap bubbles or feathers. This presentation can be done with a personal air conditioner instead.

2. Teacher Demonstration

Musical Excerpt #1: **Puff the Magic Dragon - Peter, Paul, and Mary**

Play musical excerpt #1 and move to it in three different ways, from one end of the continuum to the other (bipolar qualities). Ask the children which of the three movement sequences best matches the music played. Play the music again and ask the children to listen with this in mind. Demonstrate the movement sequence(s) they selected as a class. Relate the movement to the concept presented in the visual analogy demonstration.

3. Discussion and Problem-Solving:

After your two modeling sequences, check to see if the children have the same opinion as before (The teacher should take care not to criticize the children's answers.). Tell the children they will have an opportunity to move to another musical example using movements they create themselves. Assist them by describing and modeling the body movements they create that best reflect the music being played.

B. Teacher Modeling through the Discovery Approach (Teacher's script)

Musical Excerpt #2: **All I Really Want - Alanis Morrisette**

Play musical excerpt #2. Allow the children to listen to the musical selection for

approximately one minute. Direct the children to find their own space to move. Ask the children to think about the movements you demonstrated earlier. Can they find their own way to reflect in movement what they are hearing? "Match your movements to the music you hear." Play the music again and encourage the children to move to the music. Call out the parts of the body they are moving and comment on the quality of movement involved: bending--of knees, shaking--of hands, twisting--the torso, two jumps--followed by two hops, etc. Without verbalizing, model appropriate reflective movements to the music.

C. The Discovery Approach (Teacher's script)

Musical Excerpt #3: **Hall of the Mountain King, Peer Gynt - E. Grieg**

Play all of musical excerpt #3. Ask the children to close their eyes and concentrate on the sounds they hear. Tell them to "Imagine yourself moving to the music." "How will you match your movements to the music?" When the music is over, instruct them to open their eyes and to spread out in the space. Play the piece once more and instruct them to move to the music. "Move to the music. Match your movements to the music you hear." At this point in the lesson do not describe, model, or coach any of the movements the children are creating on their own. You should not engage in any verbal reinforcement, i.e., verbal praise.

Lesson 3

I. Warmup: (Repeat warmups from previous lessons)

A. Word improvisation using imagery to suggest dark to bright continuum:

Moving through a dark blue lagoon, a moon beam

B. Respond to sound cue--Move in various ways to a specific timbre being played

1. Use a variety of instruments

II. Body Technique:

A. Nonlocomotor movements: bending and straightening, twisting and turning, swinging and rocking, and curling and stretching

B. Locomotor movements: leap over a puddle, earth and sky leaps

C. Moving from the center: moving tummies, belly dance

III. Movement to Music Instruction:

A. Concept Presentation: **Timbre (Color) Dark - Bright**

1. Presentation of the Visual Analogy

Demonstrate with a color spectrum chart. Have the children identify the colors on the chart as you point from dark to bright within the color spectrum. You should then demonstrate three different movements that might be related to dark-to-bright colors. Ask students to identify where on the color spectrum chart the movements might be located. Use a visual chart that the children can point to. Do this for each of the three movements.

2. Teacher Demonstration

Musical Excerpt #1: **Albert's Alley - Robert Cray**

Play musical excerpt #1 and move to it in three different ways, from one end of the continuum to the other (bipolar qualities). Ask the children which of the three movement sequences best matches the music played. Play the music again and ask the children to listen with this in mind. Demonstrate the movement sequence(s) they selected as a class. Relate the movement to the concept presented in the visual analogy demonstration.

3. Discussion and Problem-Solving:

After your two modeling sequences, check to see if the children have the same opinion as before (The teacher should take care not to criticize the children's answers.). Tell the children they will have an opportunity to move to another musical example using movements they create themselves. Assist them by describing and modeling the body movements they create that best reflect the music being played.

B. Teacher Modeling through the Discovery Approach (Teacher's script)

Musical Excerpt #2: **Doing Things Together - Sweet Honey in the Rock**

Play musical excerpt #2. Allow the children to listen to the musical selection for approximately one minute. Direct the children to find their own space to move. Ask the children to think about the movements you demonstrated earlier. Can they find their own way to reflect in movement what they are hearing? "Match your movements to the music you hear." Play the music again and encourage the children to move to the music. Call out the parts of the body they are moving and

comment on the quality of movement involved: bending--of knees, shaking--of hands, twisting--the torso, two jumps--followed by two hops, etc. Without verbalizing, model appropriate reflective movements to the music.

C. The Discovery Approach (Teacher's script)

Musical Excerpt #3: **Rondo Alla Turca - W. A. Mozart**

Play all of musical excerpt #3. Ask the children to close their eyes and concentrate on the sounds they hear. Tell them to "Imagine yourself moving to the music." "How will you match your movements to the music?" When the music is over, instruct them to open their eyes and to spread out in the space. Play the piece once more and instruct them to move to the music. "Move to the music. Match your movements to the music you hear." At this point in the lesson do not describe, model, or coach any of the movements the children are creating on their own. You should not engage in any verbal reinforcement, i.e., verbal praise.

Lesson 4

I. Warmup: [repeat yesterday's exercises]

A. Moving to the heartbeat, use a drum

B. Repeat the heartbeat exercise, using the entire body in space

C. Personal space and large, general space

D. Review "Stop and Go" activity, Play the "Red Light, Green Light" game

II. Body Technique:

A. Movement qualities: sustained and vibratory, sustained and pendular, use vibratory and pendular qualities with locomotor movements

B. Locomotor steps: step-hop and high gallops

III. Movement to Music Instruction:

A. Concept Presentation: **Rhythm (Motion) Still - to - Driving**

1. Presentation of the Visual Analogy

*Demonstrate with a wind-up (or battery-operated) car toy. Ask the children to identify the various levels of motion as you imitate the movements of the toy. The car toy can sometimes stand still, begin to move slowly, or move at high, energetic speeds. Ask the children to describe traffic situations where the car would have to idle, move slowly, or drive continuously forward in space. The dance teacher may demonstrate and involve children in similar movement activities. For example, have the children make pretend they are cars waiting for the red light to change to a green light, or cars moving slowly through a yellow light.

2. Teacher Demonstration

Musical Excerpt #1: **Let's Get Funkee - C & C Music Factory**

Play musical excerpt #1 and move to it in three different ways, from one end of the continuum to the other (bipolar qualities). Ask the children which of the three movement sequences best matches the music played. Play the music again and ask the children to listen with this in mind. Demonstrate the movement sequence(s) they selected as a class. Relate the movement to the concept presented in the visual analogy demonstration.

3. Discussion and Problem-Solving:

After your two modeling sequences, check to see if the children have the same opinion as before (The teacher should take care not to criticize the children's answers.). Tell the children they will have an opportunity to move to another musical example using movements they create themselves. Assist them by describing and modeling the body movements they create that best reflect the music being played.

B. Teacher Modeling through the Discovery Approach (Teacher's script)

Musical Excerpt #2: **Foggy Mountain Breakdown**

Play musical excerpt #2. Allow the children to listen to the musical selection for approximately one minute. Direct the children to find their own space to move. Ask the children to think about the movements you demonstrated earlier. Can they find their own way to reflect in movement what they are hearing? "Match your movements to the music you hear." Play the music again and encourage the children to move to the music. Call out the parts of the body they are moving and

comment on the quality of movement involved: bending--of knees, shaking--of hands, twisting--the torso, two jumps--followed by two hops, etc. Without verbalizing, model appropriate reflective movements to the music.

C. The Discovery Approach (Teacher's script)

Musical Excerpt #3: **Greensleeves - R. Vaughn Williams**

Play all of musical excerpt #3. Ask the children to close their eyes and concentrate on the sounds they hear. Tell them to "Imagine yourself moving to the music." "How will you match your movements to the music?" When the music is over, instruct them to open their eyes and to spread out in the space. Play the piece once more and instruct them to move to the music. "Move to the music. Match your movements to the music you hear." At this point in the lesson do not describe, model, or coach any of the movements the children are creating on their own. You should not engage in any verbal reinforcement, i.e., verbal praise.

Lesson 5

I. Warmup:

A. Body stretches .

B. Move through various "environments," use charts

C. Work through nonlocomotor movements

II. Body Technique:

A. Locomotor step combinations: step-hop and high gallops

B. Review movement qualities: sustained and vibratory, sustained and pendular

III. Movement to Music Instruction:

A. Concept Presentation: **Form/Texture (Fabric) Thin - to - Thick**

1. Presentation of the Visual Analogy

Review the first lesson on viscosity (Lesson #1.) Demonstrate with three different materials contained in a large bowl. Each bowl should have its own large spoon for stirring various fluids of thin, medium, or thick viscosity. Ask a few children to stir the contents of each bowl as the rest of the children watch. Ask these same children to describe how it felt to stir each of the bowls. Ask a few children to move as you stir each of the bowls (or vice versa). Discuss the three different textures: thin, medium, thick.

2. Teacher Demonstration

Musical Excerpt #1: **I'm Going to Leave Old Texas - Riding in the Sky**

Play musical excerpt #1 and move to it in three different ways, from one end of the

continuum to the other. Ask the children which of the three movement sequences best matches the music played. Play the music again and ask the children to listen with this in mind. Demonstrate the movement sequence(s) they selected as a class. Relate the movement to the concept presented in the visual analogy demonstration.

3. Discussion and Problem-Solving:

After your two modeling sequences, check to see if the children have the same opinion as before. (The teacher should take care not to criticize the children's answers.) Tell the children they will have an opportunity to move to another musical example using movements they create themselves. Assist them by describing and modeling the body movements they create that best reflect the music being played.

B. Teacher Modeling through the Discovery Approach (Teacher's script)

Musical Excerpt #2: **This Land is Your Land - Lee Greenwood**

Play musical excerpt #2. Allow the children to listen to the musical selection for approximately one minute. Direct the children to find their own space to move. Ask the children to think about the movements you demonstrated earlier. Can they find their own way to reflect in movement what they are hearing? "Match your movements to the music you hear." Play the music again and encourage the children to move to the music. Call out the parts of the body they are moving and comment on the quality of movement involved: bending--of knees, shaking--of hands, twisting--the torso, two jumps--followed by two hops, etc. Without verbalizing, model appropriate reflective movements to the music.

C. The Discovery Approach (Teacher's script)

Musical Excerpt #3: **Tanz, Carmina Burana - C. Orff**

Play all of musical excerpt #3. Ask the children to close their eyes and concentrate on the sounds they hear. Tell them to "Imagine yourself moving to the music." "How will you match your movements to the music?" When the music is over, instruct them to open their eyes and to spread out in the space. Play the piece once more and instruct them to move to the music. "Move to the music. Match your movements to the music you hear." At this point in the lesson do not describe, model, or coach any of the movements the children are creating on their own. You should not engage in any positive reinforcement, i.e., verbal praise.

Lesson 6

I. Warmup:

A. Walking with imagery: move like balloons, sand bags on feet, etc

B. Body stretches

C. Match the drum beat: walk, march, stamp, tiptoe steps

D. Move across space with lots of energy, then with very little energy

II. Body Technique:

A. Locomotor steps: slides, prances

B. Combinations: run, run, leap

III. Movement to Music Instruction

A. Concept Presentation: **Dynamics (Energy) Weak - to - Strong**

A. Presentation of the Visual Analogy

Demonstrate as before (Lesson #2) using new objects in front of the hair dryer's/ personal air conditioner airstream. Use new objects such as a balloon, feather, or ball. Discuss what happens to each object with the various settings on the hair dryer. Ask students to imagine they are a particular object as they are "blown" about by the airstream. Discuss the different energy levels. Relate this concept to a sound source.

2. Teacher Demonstration

Musical Excerpt #1: **Body 'n Soul - Coleman Hawkins and his Orchesta**

Play musical excerpt #1 and move to it in three different ways, from one end of the

continuum to the other. Ask the children which of the three movement sequences best matches the music played. Play the music again and ask the children to listen with this in mind. Demonstrate the movement sequence(s) they selected as a class. Relate the movement to the concept presented in the visual analogy demonstration.

3. Discussion and Problem-Solving:

After your two modeling sequences, check to see if the children have the same opinion as before. (The teacher should take care not to criticize the children's answers.) Tell the children they will have an opportunity to move to another musical example using movements they create themselves. Assist them by describing and modeling the body movements they create that best reflect the music being played.

B. Teacher Modeling through the Discovery Approach (Teacher's script)

Musical Excerpt #2: **Strange Meadowlark - D. Brubeck**

Play musical excerpt #2. Allow the children to listen to the musical selection for approximately one minute. Direct the children to find their own space to move. Ask the children to think about the movements you demonstrated earlier. Can they find their own way to reflect in movement what they are hearing? "Match your movements to the music you hear." Play the music again and encourage the children to move to the music. Call out the parts of the body they are moving and comment on the quality of movement involved: bending--of knees, shaking--of hands, twisting--the torso, two jumps--followed by two hops, etc. Without verbalizing, model appropriate reflective movements to the music.

C. The Discovery Approach (Teacher's script)

Musical Excerpt #3: **Buckaroo Holiday, Rodeo - Aaron Copland**

Play all of musical excerpt #3. Ask the children to close their eyes and concentrate on the sounds they hear. Tell them to "Imagine yourself moving to the music." "How will you match your movements to the music?" When the music is over, instruct them to open their eyes and to spread out in the space. Play the piece once more and instruct them to move to the music. "Move to the music. Match your movements to the music you hear." At this point in the lesson do not describe, model, or coach any of the movements the children are creating on their own. You should not engage in any positive reinforcement, i.e., verbal praise.

Lesson 7

Review Lesson

I. Warmup:

A. Review: Body alignment, stretches

II. Body Technique:

A. Review: Nonlocomotor movements and locomotor movements: walk, run, gallop, skip, jump, hop, leap

B. Movement qualities: sustained and vibratory, sustained and pendular

III. Movement to Music Instruction

A. Concept Presentation: Review

Select one musical excerpt from each of the lessons 1-6:

Form/Texture

Dynamics/Energy

Timbre/Color

Rhythm/Motion

Briefly review each of the visual analogies that was coordinated with the musical excerpts for that particular lesson. Engage the children in recall and discuss the musical concept at hand. Play each musical excerpt twice. Begin by reviewing the modeling/describing process and then have the children move on their own through the Discovery Approach. Close the session with one movement exercise that unifies the class.

Lesson 8

I. Warmup: (Repeat warmups from previous lessons)

A. Word improvisation using imagery to suggest dark to bright continuum:

Moving through a dark blue lagoon, a moon beam

B. Respond to sound cue--Move in various ways to a specific timbre being played

1. Use a variety of instruments

II. Body Technique:

A. Nonlocomotor movements: bending and straightening, twisting and turning, swinging and rocking, and curling and stretching

B. Locomotor movements: leap over a puddle, earth and sky leaps

C. Moving from the center: moving tummies, belly dance

III. Movement to Music Instruction:

A. Concept Presentation: **Timbre (Color) Dark - Bright**

1. Presentation of the Visual Analogy

Demonstrate with a color spectrum chart. Have the children identify the colors on the chart as you point from dark to bright within the color spectrum. You should then demonstrate three different movements that might be related to dark-to-bright colors. Ask students to identify where on the color spectrum chart the movements might be located. Use a visual chart that the children can point to. Do this for each of the three movements.

2. Teacher Demonstration

Musical Excerpt #1: **Ade, Catherine Wheel - D. Byrne**

Play musical excerpt #1 and move to it in three different ways, from one end of the continuum to the other. Ask the children which of the three movement sequences best matches the music played. Play the music again and ask the children to listen with this in mind. Demonstrate the movement sequence(s) they selected as a class. Relate the movement to the concept presented in the visual analogy demonstration.

3. Discussion and Problem-Solving:

After your two modeling sequences, check to see if the children have the same opinion as before. (The teacher should take care not to criticize the children's answers.) Tell the children they will have an opportunity to move to another musical example using movements they create themselves. Assist them by describing and modeling the body movements they create that best reflect the music being played.

B. Teacher Modeling through the Discovery Approach (Teacher's script)

Musical Excerpt #2: **All that Glitters - Cover Girls**

Play musical excerpt #2. Allow the children to listen to the musical selection for approximately one minute. Direct the children to find their own space to move. Ask the children to think about the movements you demonstrated earlier. Can they find their own way to reflect in movement what they are hearing? "Match your movements to the music you hear." Play the music again and encourage the children to move to the music. Call out the parts of the body they are moving and comment on the quality of movement involved: bending--of knees, shaking--of

hands, twisting--the torso, two jumps--followed by two hops, etc. Without verbalizing, model appropriate reflective movements to the music.

C. The Discovery Approach (Teacher's script)

Musical Excerpt #3: **New Kid on the Bayou - Queen Ida**

Play all of musical excerpt #3. Ask the children to close their eyes and concentrate on the sounds they hear. Tell them to "Imagine yourself moving to the music." "How will you match your movements to the music?" When the music is over, instruct them to open their eyes and to spread out in the space. Play the piece once more and instruct them to move to the music. "Move to the music. Match your movements to the music you hear." At this point in the lesson do not describe, model, or coach any of the movements the children are creating on their own. You should not engage in any positive reinforcement, i.e., verbal praise.

Lesson 9

I. Warmup:

A. Contrast structured, bound movement with sequential, smooth movements

B. Body stretches: contraction and expansion

II. Body Technique:

A. Create a circle: send a smooth wave with arms

B. Respond to a movement story: "A Hike through the Mountains"

III. Movement to Music Instruction:

A. Concept Presentation: **Rhythm (Flow) Confined - Free**

1. Presentation of the visual analogy

Demonstrate this concept with flashlights. Demonstrate a confined spatial relationship by pointing a flashlight against a wall within defined parameters (tape on wall). Follow with contrasting free movement that is not bound. The dance teacher demonstrates the movement possibilities. Pass out flashlights to each child and allow them to practice moving through confined space as opposed to free space. Relate this concept to sound. Demonstrate vocally. Allow children to use flashlights when moving to musical example #2.

2. Teacher Demonstration

Musical Excerpt #1: **Potato Head Blues - L. Armstrong**

Play musical excerpt #1 and move to it in three different ways, from one end of the continuum to the other. Ask the children which of the three movement sequences

best matches the music played. Play the music again and ask the children to listen with this in mind. Demonstrate the movement sequence(s) they selected as a class. Relate the movement to the concept presented in the visual analogy demonstration.

3. Discussion and Problem-Solving:

After your two modeling sequences, check to see if the children have the same opinion as before. (The teacher should take care not to criticize the children's answers.) Tell the children they will have an opportunity to move to another musical example using movements they create themselves. Assist them by describing and modeling the body movements they create that best reflect the music being played.

B. Teacher Modeling through the Discovery Approach (Teacher's script)

Musical Excerpt #2: **Opus One - DMD Big Band**

Play musical excerpt #2. Allow the children to listen to the musical selection for approximately one minute. Direct the children to find their own space to move. Ask the children to think about the movements you demonstrated earlier. Can they find their own way to reflect in movement what they are hearing? "Match your movements to the music you hear." Play the music again and encourage the children to move to the music. Call out the parts of the body they are moving and comment on the quality of movement involved: bending--of knees, shaking--of hands, twisting--the torso, two jumps--followed by two hops, etc. Without verbalizing, model appropriate reflective movements to the music.

C. The Discovery Approach (Teacher's script)

Musical Excerpt #3: **Funeral for a Friend - E. John**

Play all of musical excerpt #3. Ask the children to close their eyes and concentrate on the sounds they hear. Tell them to "Imagine yourself moving to the music." "How will you match your movements to the music?" When the music is over, instruct them to open their eyes and to spread out in the space. Play the piece once more and instruct them to move to the music. "Move to the music. Match your movements to the music you hear." At this point in the lesson do not describe, model, or coach any of the movements the children are creating on their own. You should not engage in any positive reinforcement, i.e., verbal praise.

Lesson 10-Review

Review

I. Warmup:

A. Contrast structured, bound movement with sequential, smooth movements

B. Body stretches: contraction and expansion

II. Body Technique:

A. Develop movement phrase and contrast by moving in a confined/free manner

B. Review: Locomotor step combinations

III. Movement to Music Instruction: Visual Presentation-Analogy

Review two musical example from lessons 7-8 and two others from lessons 1-6.

Form/Texture

Dynamics/Energy

Timbre/Color

Rhythm/Motion/Flow

Briefly review each of the visual presentations that was coordinated with the musical excerpt to be played. Engage the children in recall and discussion. Play each musical excerpt twice. The first time it is played the teacher should repeat the modeling/describing process. The second time it is played have the children move on their own, through the discovery approach. Close the session with one movement exercise that unifies the class (For example: run and leap over the puddle, run and jump to strike to tambourine).

Final Lesson

Fun Day/Parent Day

Both groups, E and C, are together for this last lesson.

1. Sing the "Hello Song"
2. Chant and play rhythm sticks to "Let's Play Copycat"
3. Review favorite songs and games and movement activities
4. Develop movement and music ideas for the book-of-the-day:

   The Maestro Plays by Bill Martin, Jr. and Vladimir Radunsky

   a. Read the story

   b. Encourage children and parents to move and add sound
5. Final movement activities using ribbons and streamers

APPENDIX F:

Teaching Method: Music Lesson Plans

Lesson 1

Teacher Instructions: Please give a starting pitch for all songs. I have a tuning fork that you may use. Select a developmentally-appropriate pitch suitable for K-1 children for each song and demonstrate good voice quality and good intonation. Sing each song in its entirety to begin with, then by phrases, if necessary.

Day 1 - Opening Day and PMMA test

E and C groups Together

10 mins

1. Name Tags, registration
2. Hello Song-sit in a circle
3. Name Game
4. Echo Sing/Question-Answer with Miss ElsieMae (puppet)
5. Eensy Weensy Spider song, use big book and wind-up spider, spider puppet

25 mins

1. Administer PMMA-Tonal (Music Teacher)

   Have writing pads and pencils available

5 mins

1. Ram Sam Sam - song
2. Goodbye Song

Lesson 2

E and C groups Together

10 mins

1. Name Tags, registration
2. Hello Song-sit in a circle
3. Name Game
4. Echo Sing/Question-Answer with Miss ElsieMae (puppet)
5. Eensy Weensy Spider song, use big book and wind-up spider, spider puppet
   a. Add instrumental accompaniment (see handout)

25 mins

1. Administer PMMA-Rhythm (Music Teacher)

5 mins

1. Circle Round the Zero song-with game
2. Goodbye Song

Lesson 3

Movement Pretest

E and C groups Together

5 mins	1. Pass out number tags (Do this every day of the study)
	2. Hello Song-sit in circle
	3. I'm So Glad You're Here-song and body percussion
16 mins	1. Administer Movement Pretest, Pt. I: 4 musical examples (Movement Teacher)
3 mins	2. Transition-Ram Sam Sam song
16 mins	1. Administer Movement Pretest, Pt . II: 4 musical examples (Movement Teacher)
	2. Goodbye Song-Closure

Lesson 4

E and C groups Together for first 10 minutes and last 10 minutes

10 mins

1. Hello Song-sit in circle-use tone ladder and bells
2. Name Game
3. Echo Sing-w/ Miss ElsieMae puppet
4. Aikendrum song-use pictures
5. Down in the Valley song-use prepared music cassette

C group only-Lesson 1

20 mins

1. BEAT lesson using Bee, Bee Bumblebee chant
   use heartbeat magnets to show beat
2. Beats can move faster or slower-clap pointing to hearts
3. Book-of-the-Day: Old MacDonald
   a. Read the book and sing the song
   b. Listen to tape recording of Raffi-OMD had a Band
   c. Pantomime the playing of each instrument as it is called out
   d. Allow children to create their own version of the song using simple rhythm instruments
4. This Old Man song-use recording by Steve & Greg

E and C groups together

10 mins

1. Goodbye Song with new body percussion
2. Aikendrum song-optional

Lesson 5

E and C groups Together for first 10 minutes and last 10 minutes

10 mins

1. Hello Song with drum beat and body percussion
2. Name Game with bells-use tone ladder
3. Heartbeat rhythmic activity using piano
4. What'll we Do with Baby-O? song with scarf and game

C group only-Lesson 2

20 mins

1. Book-of-the-Day: Chicka, Chicka Boom Boom
    a. Read book and play cassette tape-1st and 2nd versions
2. Ida Red, Ida Blue song with pictures
    a. Discuss which words have their own heartbeat:
        musicians call this a "TA"
3. Repeat This Old Man Song-Steve & Greg
    a. Pass out worksheets and crayons

E and C groups together

10 mins

1. Review Baby-O song
2. Good-bye Song

Lesson 6

E and C groups Together for first 10 minutes and last 10 minutes

10 mins

1. Hello Song-new body percussion
2. Name Game with ostinato on xylophones, body percussion
3. Echo Sing with Miss ElsieMae
4. Heartbeat activity using piano
5. Repeat: Baby-O song with game
6. Little Johny Brown song with blanket and game

C group only-Lesson 3

20 mins

1. Book-of-the-Day: Root-a-Toot
    a. Read book to children
    b. Children add vocal sounds
    c. Children decide which instrument to substitute for animal sounds
2. Learn about s-m, which note is higher?
    a. show with body movements
    b. Lemonade song
    c. Show hand signals

E and C groups together

10 mins

1. Review one song from this week: their choice
2. Good-Bye Song with instrument ostinato

Lesson 7

E and C groups Together for first 10 minutes and last 10 minutes

10 mins

1. Hello Song-with rhythm sticks
2. Grizzly Bear song with stuffed toy & game
3. Teddy Bear song with puppet
4. Heartbeat activity using piano

C group only-Lesson 4

20 mins

1. Review s-m and Lemonade song
2. Cobbler, Cobbler song-use for s-m reinforcement
3. Introduce La; s-m-l , use Snail, Snail; Bounce High songs
4. Book-of-the-day: First Song Ever Sung
    a. Discuss with children--creating your own song!
        Use Orff instruments as ostinatos, for improvisation
    b. What would be the situation for the first song they had sung?
        Possibly use synthesizer to explore a few sounds together

Reinforcement songs:

Lucy Locket, I See the Moon

E and C groups together

10 mins

1. Review Little Johny Brown song or any others
2. Good-bye Song with instruments

Lesson 8

E and C groups Together for first 10 minutes and last 10 minutes

10 mins

1. New Hello Song
2. Clap Your Hands song-change body rhythms with words
3. Rhythmic Activity using paper plates, play music on cassette player
4. Punchinello song with game

C group only-Lesson *5*

25 mins

1. Book-of-the-Day: Listen to the Rain and It's Raining
    a. Read the first book and have children create a rainstorm with vocal sounds and body percussion, repeat
2. Read the second book and sing the chant, It's Raining.
    (use hand signals: s-m-l, optional)
    a. Add Orff instruments on ostinato, D pentatonic
    b. Add the musical form to the Book reading on the repeat
3. Review hand signals for s-m-l with songs from Day 6
    a. use circle magnets to show s-m-l on a tone ladder

E and C groups together

10 mins

1. Punchinello song with game
2. Good-bye Song

Lesson 9

E and C groups Together for first 10 minutes and last 5 minutes

10 mins

1. Hello Song
2. Rhythmic Activity using paper plates, use prepared music on cassette tape
3. Repeat Clap Your Hands song
4. This-a-way, That-a-way song with movement
    a. two lines, face partners, hold hands and go back and forth with arms

C group only-Lesson 6

20 mins

1. Review Rain Books from Day 7
    a. continue with sound discovery from Day 7 activities
    b. develop instrument ostinatos, D pentatonic, and add rhythm instruments
2. Review hand signals for s-m-l and show them on the tone ladder
    a. Show how s-m-l can be put on the staff (two-line staff)

E and C groups together

10 mins

1. Review This-a-way, That-a-way song
2. Good-bye Song

Reinforcement Songs for s-m-l: Bounce High, See Saw, Star Light

Use two-lined staff.

Lesson 10

E and C groups Together for first 10 minutes and last 10 minutes

10 mins

1. Hello Song with new puppet
2. Echo-Question-Answer with puppet
3. Let's Play Copycat game with body percussion
4. Button You Must Wander song-with game (use yarn and button)

C group only-Lesson 7

20 mins

1. Review heartbeat magnets, Clap the TA beat
2. Discover the Ti-Ti rhythm with Bounce High song
3. Book-of-the-Day: Over in the Meadow
    a. Read the first part of the book, teach the song
    b. Continue with the rest of the book singing all the verses
    c. Add simple rhythmic accompaniment to the song verses

E and C groups together

10 mins

1. Review Let's Play Copycat game
2. Goody-bye Song

Lesson 11

E and C groups Together for first 10 minutes and last 10 minutes

10 mins

1. Hello Song
2. Let's Play Copycat game with rhythm sticks
3. Peanut Butter chant and Peanut Butter song
4. Button You Must Wander song with game

C group only-Lesson 8

20 mins

1. Continue with discovering the Ti-Ti rhythm
   a. Review Bounce High song with heartbeat magnets
   b. Find the Ti-Ti rhythm with Bought Me a Cat/Good Night songs
   c. Show how to write the Ti-Ti rhythm--tie the two together
      (use rhythm sticks to illustrate)
2. Continue development of Over in the Meadow book and songs
   a. Use felt board to illustrate the meadow, the pond, and animals
   b. Have one child stick one felt-shaped animal onto to the felt board
      as the group sings the corresponding verse
   c. Do this for all the animals in the song
   d. Provide crayons/paper for children to draw their own meadow

E and C groups together

10 mins

1. Rhythm activity with paper cups, use prepared music on
   cassette tape
2. Good-bye Song

Lesson 12

E and C groups Together for first 10 minutes and last 10 minutes

10 mins

1. Hello Song with puppet
2. Review Peanut Butter Chant and song
3. Rhythm stick activity with chant and walking to the beat--

   I Love Hot Dogs chant

C group only-Lesson 9

20 mins

1. Book-of-the-Day: Coyote Dreams
   a. Practice coyote howls and night sounds
   b. Show picture books
2. Learn a Navaho Dance to Jo'ashila song
3. Review s-m-l and Ta, Ti-Ti

E and C groups together

10 mins

1. Let's Play Copycat game with body percussion
2. Good-bye Song

Lesson 13

E and C groups Together for first 10 minutes and last 5 minutes

10 mins

1. Hello Song
2. Rhythm stick activity with movement and chant
3. Let's Play Copycat with rhythm sticks
4. Review Day: Allow children to choose from their favorite songs and games

C group only-Lesson 10

20 mins

1. Book-of-the-Day: Coyote Tales
    a. Read story and dramatize it as a group
2. Repeat the Navaho Dance from Day 11
3. Learn songs from In the Shade of the Saguaro book, use cassette tape
    a. use gila monster toy
    b. drawing activity
4. Recognize rhythm patterns from stick notation, use fruit magnets

E and C groups together

10 mins

1. Listen to Yippee Yi Yo song on prepared cassette tape
2. Good-Bye Song with instrumental accompaniment
3. Use the Clap Your Hands song for collecting instruments

Lesson 14

Movement Posttest

E and C groups Together

5 mins	1. Hello Song
	2. Review favorite songs (a few)
16 mins	1. Administer Movement Posttest, Pt. I: 4 musical examples
3 mins	1. Transition songs
16 mins	1. Administer Movement Posttest, Pt. II: 4 musical examples
5 mins	1. Closure
	2. Good-bye Song

Final Lesson

E and C groups Together

40 mins

1. Hello Song
2. Let's Play Copycat
3. Review favorite songs and games
4. Develop movement and music ideas for the book-of-the-day:

   The Maestro Plays
5. Final movement activities using ribbons and streamers

APPENDIX G:

Summary of Judges' Comments for High and Low Musicality Children

Summary of Judges' Comments for High Musicality Children

According to the judges, high musicality children:

Musical Response

1. were highly rhythmical as witnessed by their: responsiveness to changing rhythms, awareness of syncopated rhythms, responses to underlying pulse and beat subdivisions, and reactions to silences and pauses in the music,
2. moved with the tempo of the music and then progressed with the music simultaneously,
3. created steps that reflected the phrasing of the music,
4. displayed an awareness of musical elements and reacted to both obvious changes and nuances in the music,

Body Patterns and Body Vocabulary

1. demonstrated a wide variety of locomotor activity from walks, to runs, to leaps, and locomotor combinations,
2. used circular locomotor patterns that were subject to free and sudden changes in response to the changes in the music,
3. possessed a wide range of varied movements,
4. responded with holistic body movements and often coordinated upper body and lower body movement patterns,
5. displayed the changing of levels: high, middle, and low,
6. demonstrated spatial awareness: the use of wide and generous space and the covering of a large area of space,
7. changed the line of direction,
8. created asymmetrical shapes,
9. made use of eye focus and facial expressions,

Summary of Judges' Comments for High Musicality Children

Continued

10. used high energy levels in their body vocabulary,

Style and Creativity

1. seemed to feel the music and were fairly reflective of the music being played,
2. were fairly independent of the rest of their group, and
3. demonstrated evidence of theme development in a choreographic sense,
4. were able to maintain a level of creativity and concentration and did not seem distracted by others,
5. revealed flexibility, variety, spontaneity, and reflectiveness in their movement patterns,
6. were able to establish a sense of personal style, and
7. moved in a dramatic manner: demonstrated with strong, emotional, and conscious reactions to changes in the music.

Summary of Judges' Comments for Low Musicality Children

According to the judges, low musicality children:

Musical Response

1. did not always match up with the tempo of the music,
2. seemed to be oblivious to the music and did not respond in an appropriate manner,
3. were perceived to lack musical awareness or reflective qualities,

Body Patterns and Body Vocabulary

1. appeared to have random movement patterns,
2. lacked upper body movement and maintained the torso in an upright position,
3. used very few arm or hand gestures,
4. tended to use lower body movements,
5. demonstrated basic locomotor movements such as jumping, skipping, and running, but often with no relationship to the music,
6. rarely used any whole body movement, and seemed unaccustomed to holistic body movement,
7. often engaged in gymnastic stunts such as headstands or somersaults without any connection to the music,
8. demonstrated the lack of personal space or general space,
9. did not make use of level changes and directional changes,
10. tended to use a circular pattern around the room,
11. used symmetrical patterns and shapes,
12. would sometimes display a quick burst of energy, only to lose control or fade out in an erratic, sporadic fashion,

Summary of Judges' Comments for Low Musicality Children

Continued

13. had a tendency to focus on the repetition of one type of movement and seemed bound by it,

Style and Creativity

1. did not appear to be independent or highly motivated,
2. often demonstrated off-task behavior,
3. seldom engaged in any meaningful relationships, although off-task behavior often occurred in conjunction with at least one other person,
4. were perceived to lack concentration and self-awareness,
5. were not seen as being creative in relation to the music,
6. did not seem to differentiate between the various musical styles, and
7. did not receive many positive comments concerning personal style.

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