A COMPARISON
OF TEACHING PAIRED BEAT PATTERNS
IN A RHYTHM CONTENT LEARNING SEQUENCE
WITH A TRADITIONAL APPROACH
IN BEGINNING INSTRUMENTAL MUSIC CLASSES

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Chapter One

Introduction, Purpose, and Problems

Introduction

Zuckerkandl theorized that humans respond to rhythm in paired beats.[1] The findings of Coppock, DeYarman, Dittemore, and Moorhead and Pond, cited by Gordon,[2] provide objective evidence in support of the subjective opinion that humans organize tempo beats, or what Gordon calls macro beats,[3] into pairs. Gordon has also suggested that temporal consistency is fundamental to precision in audiation,[4] and to the performance of meter and melodic rhythm.

Authors of traditional beginning instrumental methods suggest procedures, techniques, and instructional materials that emphasize tone production, the memorization of fingerings, and the reading of whole notes, half notes and their corresponding rests in four-quarter measures. Students are drilled

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[1] Victor Zuckerkandl, Sound and Symbol (Princeton: Princeton University Press, 1956), Chapter 4.

[2] Edwin E. Gordon, The Psychology of Music Teaching (Englewood Cliffs, N. J.: Prentice-Hall, 1971), p. 68.

[3] Edwin E. Gordon, Learning Sequences in Music: Skill, Content, and Patterns, A Music Learning Theory (Chicago: G. I. A. Publications, 1984), pp. 101-03. Steady and consistent beats that determine the tempo of music are called macro beats. Macro beats equally divided into two or into three parts are called micro beats. Micro beats define the meter as duple or triple. Subdivisions and elongations of macro and micro beats combined with macro beat and micro beat patterns create melodic rhythm.

[4] Audiation is the ability to hear music whether or not the sound is physically present. Gordon, Learning Sequences, p. 11.

in those skills before they learn to perform steady and consistent macro beat and micro beat patterns in duple or triple meter.[5] Students are instructed to count before they have either practical or musical understanding of what the counting represents in relation to macro beats.

Logical rhythm content learning sequence has been neglected in most class instrumental materials published over the past 25 years. As stated, most instrumental lesson books begin with the reading and playing of notes that are longer than one macro beat. Students must develop the ability to maintain a steady beat and a consistent tempo in order to perform elongations accurately. When a student performs macro and micro beat patterns, he learns the meaning of tempo and meter. Audiation of melodic rhythm frequently becomes distorted unless students perform macro beat and micro beat patterns before they perform sustained notes. Because audiation of melodic rhythm is distorted, students frequently fail to develop the executive skills that are needed for accurate articulation and correct tongue placement.

Traditional procedures emphasize the memorization of pitch names and fingerings necessary to name and play the major scale in different keys. Knowledge of fingerings evolves as a mechanical procedure. If, however, fingerings were introduced to enable the student to reproduce previously learned tonal patterns, the results might be more musical. In many published instrumental methods, the predominant instructional material is in major tonality through the beginning and intermediate stages of instruction. There is little, if any, instructional material in minor, dorian, phrygian, lydian, and

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[5] Gordon, Learning Sequences, p. 101 ff.

mixolydian tonalities.[6] When a student audiates and performs only major tonal patterns, it is unlikely that he will develop the discrimination skills that are necessary to perform with correct intonation in other tonalities.[7]

For many students, playing an instrument becomes a mechanical exercise that involves eye and hand coordination. Moreover, the audiation and performance of rhythm patterns and tonal patterns in a content sequence based upon difficulty levels has seldom been taught systematically. Frequently, as a result of traditional instruction, performances are not musical, because the students have not developed adequate audiation skills.

The complex skills of performance are rarely separated into audiation skills (the ability to discriminate rhythm and tonal patterns) and executive or motor skills. Research suggests that if rhythm concepts, tonal concepts, and executive skill components are taught separately, a student will easily learn to combine them, and he will be able to give significant musical meaning to his performance.[8]

In most schools, beginning instrumental music instruction is offered to students because there is a need to develop players who will become members of bands, orchestras, and other ensembles. Although musical skills should be stressed in beginning instruction, rhythm and articulation are frequently neglected in favor of learning to play "notes." Many teacher-conductors complain about students' inability to read rhythm when, in actuality, the dif-

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[6] Gordon, Learning Sequences, pp. 64-69.

[7] Gordon, Learning Sequences, pp. 86, 218-19.

[8] Gordon, Learning Sequences, pp. 218-222.

ficulty arises because students cannot audiate rhythm patterns accurately before they attempt to read them. A teacher's continual exhortation to "count" often contributes to a student's frustration, because counting is substituted for audiation.

Students in ensembles are likely to perform with a higher degree of musicality and rhythm accuracy when the instructional emphasis is directed toward the audiation of patterns before those patterns are read. The difficult task of learning many fingering patterns in numerous keyalities should be minimized at the beginning of instruction. If a student is comfortable with familiar fingerings for tonal patterns, he should be able to devote greater attention to the audiation and performance of rhythm patterns. Limiting tonal patterns to one major keyality and its relative minor enables a teacher to emphasize the development of a rhythm pattern vocabulary. When playing range is limited in the initial phases of instruction, learning to play is less apt to become a game in which students compete to determine who can learn to play the most "notes" in the least possible time.

When a teacher capitalizes on the natural tendency of a student to organize tempo into paired macro beats, rhythm patterns may be taught with greater efficiency and with less confusion. The most common measure groupings can be audiated in pairs of macro beats: 2/4 and 6/8 as one pair, 12/8 as two pairs, 4/4 as two pairs, two measures of 3/4 as one pair (audiated as one measure of 6/4), and either 2/2 or cut time as one pair. Few authors of instrumental class methods are cognizant of the necessity of pairing macro

beats in the organization of their materials.[9]

Duple and triple meter patterns may be taught by rote after a steady tempo has been established. When a student is taught both meters concurrently, he rapidly learns to discriminate accurately between the two. When he is taught duple meter for long periods of time, as is the procedure followed in most class instrumental teaching methods, a student's ability to discriminate between duple and triple meters is weakened, and his performance in both meters becomes unmusical. Once a student can audiate, discriminate, and perform rhythm patterns in both duple and triple meters, he may be encouraged to read and improvise music. After he learns a variety of familiar patterns, the student should be able to learn to perform unfamiliar patterns through inference learning.

Most beginning instrumental students want to improvise as soon as they can play several tones. A student may be encouraged to improvise as soon as he can maintain a steady beat and produce a variety of rhythm patterns. Traditional methods that begin by emphasizing the ability to play sustained tones which extend for more than one macro beat, and frequently for four macro beats, may delay the development of a sense of steady tempo. The neglect of macro and micro beat rhythm patterns has a tendency to discourage rhythm improvisation, which is dependent upon a sense of tempo and a sense of meter.

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[9] James O. Froseth, The Individualized Instructor (Chicago: G. I. A. Publications, 1974). This class lesson series for all orchestral instruments limits range but not key signatures. In the first book of this series, macro beat patterns are paired according to rhythm content sequence. Some of the initial etudes and songs, however, which should be audiated as duple micro beat patterns, are notated in 4/4 instead of 2/4.

Purpose

The purpose of this study is to gather information that may result in the improvement of beginning instrumental instruction. Information about student achievement that results from the application of sequential rote procedures that teach students to audiate patterns before they are taught to read notation needs to be compared with information about student achievement that results from the application of traditional procedures that teach students to read notation without using sequential rote procedures to teach them audiation skills.

Problems

Following are the specific research questions:

1. Will students in beginning instrumental music classes who receive rhythm content learning sequence instruction learn to tongue, bow, and articulate on their instruments with greater facility and accuracy than students in beginning instrumental music classes who receive traditional instruction?

2. Will students in beginning instrumental music classes who receive rhythm content learning sequence instruction in which tonal patterns are limited to one major tonality and its relative minor tonality perform on their instruments with better intonation than students in beginning instrumental music classes who receive traditional instruction?

3. Will students in beginning instrumental music classes who receive rhythm content learning sequence instruction read and play in duple and

triple meters with greater facility and accuracy than students in beginning instrumental music classes who receive traditional instruction?

4. Will there be a difference in instrumental music achievement between students with high and low music aptitudes who receive either rhythm content learning sequence instruction or traditional instruction?

Chapter Two

Related Studies

McGarry,[1] Green,[2] Davis,[3] and Heim[4] investigated the effects of different techniques for teaching student instrumentalists to read musical notation accurately but they neglected music learning theory. The writer found only one extensive study, that by MacKnight,[5] in which the researcher proceeded from aural-oral ("playing by ear") to verbal association (using tonal and rhythm syllables as signs) to symbolic association (reading and writing music) in a music learning theory skill sequence. MacKnight's study and two

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[1] Robert J. McGarry, "A Teaching Experiment to Measure the Extent to Which Vocalization Contributes to the Development of Selected Instrumental Music Performance Skills. A Comparison of the Effectiveness of Two Teaching Techniques on Instrumental Music Performance Utilizing the Watkins-Farnum Performance Scale," Diss. New York University, 1967.

[2] Donald Robert Green, "An Investigation of the Effects of Two Modes of Notating and Structuring the Rhythmic Content of a Beginning Instrumental Method Book on the Rhythmic Reading Ability of Beginning Instrumental Students," Diss. Northwestern University, 1975.

[3] LaPointe Manuel Davis, "The Effects of Structured Singing Activities and Self-Evaluation on Elementary Band Students' Instrumental Music Performance, Melodic Tonal Imagery, Self-Evaluation, and Attitude," Diss. Ohio State University, 1981.

[4] Alyn Joseph Heim, "An Experimental Study Comparing Self-Instruction with Classroom Teaching of Elementary Rhythm Reading in Music," Diss. New York University, 1973.

[5] Carol B. MacKnight, "The Effects of Tonal Pattern Training on the Performance Achievement of Beginning Wind Instrumentalists," Experimental Research in The Psychology of Music. Studies in the Psychology of Music, 10 (1974), pp. 53-76.

others, Wright,[6] an early investigation of the applications of movement to a music learning sequence, and Palmer,[7] an investigation of the effects of verbal association as a technique for teaching children to read music, are related to the design and procedures of the present study. They are reviewed below.

The Wright Study

In 1937, Wright conducted an experimental investigation of procedures for teaching rhythm skills which she defined as "the ability to rhythmize."[8] Wright was interested not only in rhythm skill achievement but also in the effects of rhythm training on the movement ability of children with physical handicaps. The subjects of her study were a group of children with normal intelligence who were enrolled in a state school for the handicapped. A number of children involved in the study were afflicted with cerebral palsy. Wright believed that rhythm training could help those children to move more gracefully than most cerebral palsy victims. Before beginning instruction, Wright measured rhythm achievement and she recorded a score for each of the students.

Wright designed a mechanical rhythm synthesizer that could be adjusted to generate a number of rhythm patterns. During music classes, the children were instructed to listen to the sound of a pattern and to respond in one of

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[6] Minnie Wright, "The Effect of Training on Rhythm Ability and Other Problems Related to Rhythm," Child Development, 8 (1937), pp. 159-72.

[7] Mary Palmer, "Relative Effectiveness of Two Approaches to Rhythm Reading for Fourth Grade Students," Journal of Research in Music Education, 24, No. 3 (1976), pp. 110-18.

[8] Minnie Wright, "The Effect of Training on Rhythm Ability."

four ways: whole body movement, arm movement, leg movement, or hand clapping. The synthesizer produced a melodic rhythm pattern in duple meter that included a division of the macro beat into micro beats. Wright observed that most of the children could not move accurately, or in unison, with the sound of the pattern. When Wright adjusted the synthesizer to generate only pulse or tempo beats (macro beats), the children had fewer problems and learned with little difficulty to maintain a consistent tempo and to move in unison with the rhythm synthesizer. After the children were able to maintain a consistent tempo, Wright readjusted the synthesizer to generate duple meter patterns. The children rapidly learned to perform subdivision (meter or micro beat) patterns with accuracy and in unison with the synthesizer.

After a number of repetitions of several melodic rhythm patterns, Wright observed that the children recognized each of the patterns. The children spontaneously created chants and rhymes (a type of verbal association) to match those familiar patterns as they clapped. As training progressed, Wright was able to teach many of the children to read and to write the standard musical notation for those patterns.

Wright's procedures have aspects of a music learning theory skill and content sequence. At the aural/oral level of music learning theory content sequence, large muscle movement in response to rhythm aids in the development of two senses: steady beat and consistent tempo. After one can move steadily and consistently, one is ready to chant melodic rhythm with accuracy.