

AN EXPERIMENTAL STUDY OF
TWO APPROACHES TO THE DEVELOPMENT OF
AURAL METER DISCRIMINATION AMONG STUDENTS
IN A COLLEGE INTRODUCTORY MUSIC CLASS

Submitted to the Temple University Graduate Board
in partial fulfillment of the requirements
for the degree of
Doctor of Musical Arts

by
James Larry Stockton
March 1982

TABLE OF CONTENTS

LIST OF TABLES	iv
ACKNOWLEDGMENTS	v
Chapter	
I. PURPOSE OF THE STUDY	1
Introduction	1
Purpose	7
Problem of the Study	8
II. REVIEW OF RELATED STUDIES	9
Introduction	9
The College Introductory Music Class	10
Eisman Study	10
Dodson Study	12
Development of Rhythm Skills	13
Palmer Study	14
Teague Study	15
Comparison of Related Research to the Present Study	16
III. METHODS AND PROCEDURES	19
Population	19
Procedures	19
Instructional Content	20
Training of the Experimental Group	21
Training of the Control Group	22
Criterion Measure	24
Statistical Design and Analysis	24
IV. PRESENTATION AND INTERPRETATION OF THE DATA	26
Statistical Characteristics of the Preliminary Test	26
Statistical Characteristics of the Criterion Test	26
Interpretation and Discussion	28

V. SUMMARY AND CONCLUSIONS	31
Problem of the Study	31
Design and Analysis	31
Results of the Study	32
Conclusions	33
Recommendations for Future Research	33
APPENDIX A - INSTRUCTIONAL CONTENT: EXPERIMENTAL GROUP	35
APPENDIX B - INSTRUCTIONAL CONTENT: CONTROL GROUP . .	39
APPENDIX C - CRITERION TEST	41
BIBLIOGRAPHY	49

CHAPTER I

PURPOSE OF THE STUDY

Introduction

Amid the pendulum swing of fad and fashion in music education, certain themes have remained constant due to the efforts of enlightened researchers. One theme is that since music is an aural art, to learn music is to attend to its aural elements.¹ It would appear reasonable to assume that that theme would be the underlying premise of all inquiries into the pedagogy of music. Even a casual perusal of current literature, however, will prove the assumption invalid.

An often overlooked corollary is the need for a cogent theory of music instruction based on learning theory. In 1938, Carl Seashore stated, "The ordinary procedure in teaching and learning music is shamefully wasteful because known laws of learning are not applied."² Although some of the "known laws" alluded to have since been either modified or refined, the underlying premise, as well as the ideas

¹James Mursell, Music Education: Principles and Programs (Morristown, N.J.: Silver Burdett, 1956), p. 88; and Aaron Copland, What to Listen for in Music, rev. ed. (New York: Mentor Books, 1957), p. 162.

²Carl E. Seashore, Psychology of Music (New York: McGraw-Hill, 1938), p. 149.

expressed by Copland and Mursell, has been echoed some fifty years later by James Carlsen:

Musicians are interested in auditory perceptual learning because music is an aural art. If we are to develop an effective theory of music instruction we must do so on the basis of data that describe the interactions that take place between the learner and the structure of the event being learned.³

If one accepts Carlsen's charge, it then becomes important to define those elements that are basic to an aural understanding of music and to develop an instructional sequence whereby educational objectives can be realized most expeditiously. Pioneering research in this area has been conducted by Edwin Gordon who concludes:

In order to understand music, one must be aware both descriptively and interpretively of its basic aural elements. To achieve this awareness, one must have developed a sense of tonality and a sense of meter. . . . A sense of tonality provides one with the ability to hear with understanding, or, to coin a word, to 'audiate,' a piece of music as being, for example, major or minor; a sense of meter provides one with the ability to audiate a piece of music as being, for example, duple or triple.⁴

Music educators generally agree that an essential aspect of music learning is the ability to perceive rhythm

³James C. Carlsen, "Auditory Perception: Concerns for Musical Learning," in the Documentary Report of the Ann Arbor Symposium: Applications of Psychology to the Teaching and Learning of Music, ed. Rebecca Taylor (Reston, Va.: Music Educators National Conference, 1981), p. 3.

⁴Edwin E. Gordon, Learning Sequences in Music: Skill Content, and Patterns (Chicago: G.I.A. Publications, Inc., 1980), p. 2.

accurately.⁵ Close examination of major comprehensive theories of rhythm, however, reveals many diverse ideas regarding its very nature.⁶ Often, what appear to be conflicts are nothing more than differences in terminology; nonetheless, substantive arguments are frequently noted, particularly in discussions of meter. A representative sampling of major tenets can be found in the writings of Cooper and Meyer, Creston, Gordon, and Mursell.⁷

Cooper and Meyer represent the more traditional view by defining meter as "the measurement of the number of pulses between more or less regularly recurring accents."⁸ Mursell defines the two outstanding characteristics of rhythm as the "phrase rhythm" and the "underlying beat,"

⁵In addition to Gordon, numerous other writers attest to the importance of the development of rhythm perception; see Charles Hoffer, Teaching Music in the Secondary Schools, 2nd ed. (Belmont, Ca.: Wadsworth Publishing Co., Inc., 1973); Steven K. Hedden, "Development of Music Listening Skills," Council for Research in Music Education 64 (Fall 1980): 12-22; and Rudolf E. Radocy and J. David Boyle, Psychological Foundations of Musical Behavior (Springfield, Ill.: Charles C. Thomas, 1979).

⁶A discussion of various theories pertaining to rhythm can be found in Paul Creston, Principles of Rhythm (New York: Franco Columbo, 1964), pp. v-vi.

⁷Grosvenor Cooper and Leonard B. Meyer, The Rhythmic Structure of Music (Chicago: University of Chicago Press, 1960); Paul Creston, Principles of Rhythm (New York: Franco Columbo, 1964); Edwin E. Gordon, Learning Sequences in Music: Skill, Content, and Patterns (Chicago: G.I.A. Publications, Inc., 1980); and James Mursell, Psychology of Music (New York: W.W. Norton and Company, 1937), pp. 177-200.

⁸Cooper and Meyer, Rhythmic Structure, p. 4.

while generally concurring with the customary concept of meter.⁹ Paul Creston points to the discrepancy between notational practice and true perception in his division of patterns (subdivisions of beats) into the categories of "regular" and "irregular." Subdivisions consistent with the meter signature are called regular, whereas subdivisions not suggested by the meter signature are called irregular.¹⁰ Although his overall analysis of rhythmic structure is generally quite complex, Creston basically adheres to the traditional view of meter as an organization of beats based on regularity of accent.

A significant break with tradition is noted in Gordon's structure of rhythm:

Rhythm has three fundamental elements. They are macro beats, micro beats, and melodic rhythm. . . . Consider a continuum of beats, that is, a series in which none of the beats is accented. Because of the necessity to perceive categorically, a listener will subjectively accent every other beat so that the beats are audiated in pairs, each beat being of equal temporal length and the accents being dynamic and not agogic. These beats are called macro beats. . . . Micro beats, which are shorter than macro beats, are derived from the equal temporal division of macro beats. . . . Melodic rhythm is the rhythm of the melody or the text of a piece of music. It is superimposed upon micro beats which are superimposed upon macro beats.¹¹

His definition of usual meter is based on what is traditionally called subdivision of beats rather than on patterns of

⁹Mursell, Psychology of Music, pp. 177-200.

¹⁰Creston, Principles of Rhythm, pp. 34-43.

¹¹Gordon, Learning Sequences in Music, pp. 88-90.

accentuation. It further reflects psychological evidence suggesting an innate tendency to perceive beats in pairs.

Gordon's theory of music learning forms the theoretical basis of the present study. Of particular significance are the rhythm patterns and syllables Gordon derived for use in the learning sequence he devised.¹² In describing the initial steps in the sequential development of basic listening skills, Gordon contends that:

With formal instruction beginning at the aural/oral level of learning, the child develops a sense of tonality and a sense of meter through structured singing and rhythm activities. . . . The basic units of music are tonal patterns and rhythm patterns (not individual tones or notes); after a sense of pitch center and a sense of consistency of tempo are developed, one listens to specific tonal patterns and rhythm patterns and then performs them with text or chants them with neutral syllables, possibly in the form of echoes. Through performance . . . one begins aurally to memorize and recognize tonal patterns in a variety of keys and tonalities, and rhythm patterns in a variety of tempos and meters, which have been taught by rote. By recall, one becomes able to discriminate among them, and thereby acquires a vocabulary of tonal patterns and rhythm patterns and a more sophisticated sense of tonality and meter.¹³

Clearly, there is little agreement among music educators as to the appropriate learning experiences necessary to promote maximum musical understanding. Various research

¹²For a thorough discussion of the taxonomy of rhythm patterns see Gordon, Learning Sequences in Music, pp. 162-210; and Gordon, Tonal and Rhythm Patterns: An Objective Analysis (Albany, N.Y.: State University of New York Press, 1976).

¹³Gordon, Learning Sequences in Music, pp. 14-15.

efforts, however, do appear to indicate that appropriate methodology, based on learning theory, enhances musical growth. Studies by Bradley,¹⁴ Foley,¹⁵ Haack,¹⁶ and Zemke¹⁷ show significant differences in the acquisition of prescribed listening skills based on the specific methodologies and teaching techniques employed. Radocy and Boyle give a comprehensive summary of common teaching practices designed to aid in the development of rhythm skills:

1. Counting aloud
2. Tapping the underlying beat
3. Use of the metronome
4. Tapping or clapping the phrase rhythm
5. Use of rhythm syllables
6. Ensemble performance activities
7. Use of counting systems
8. Conducting
9. Eurhythmics
10. Development of rhythm reading skills
11. Use of rote performance¹⁸

¹⁴Ian L. Bradley, "The Development of Aural and Visual Perception Through Creative Processes," Journal of Research in Music Education 13 (Winter 1965): 239-245.

¹⁵Elsbeth A. Foley, "The Effects of Training in Conservation of Tonal and Rhythm Patterns on Second-Grade Children," Journal of Research in Music Education 23 (Winter 1975): 240-248.

¹⁶Paul A. Haack, "The Use of Positive and Negative Examples in Teaching the Concept of Musical Style," Journal of Research in Music Education 20 (Winter 1972): 456-461.

¹⁷Sister Lorna Zemke, "The Kodaly Method and a Comparison of the Effects of a Kodaly-Adapted Music Instruction Sequence and a More Typical Sequence on Auditory Musical Achievement in Fourth-Grade Students," (D.M.A. dissertation, University of Southern California, 1973).

¹⁸Radocy and Boyle, Psychological Foundations, pp. 96-99.

They further contend that:

. . . . There are commonalities among the approaches to rhythm development advocated by practitioners. Most teachers advocate more than one approach. The relative merits of the respective approaches, however, have not all been verified under controlled conditions. Perhaps the most important issue is . . . that teachers at least employ some systematic approach to rhythmic development rather than leaving it up to incidental learning as part of a total curriculum.¹⁹

Purpose

From the foregoing observations it can be seen that there is a need for further research in regard to how basic listening skills are acquired, particularly rhythm perception.²⁰ Current methodology, largely undocumented, would appear to be based primarily on teacher preference rather than on objective evidence or established theories. The present investigation was conceived and implemented in an effort to address the all-important issue of how people learn music and the more specific question of how the basic skill of aural discrimination can be taught most effectively.

¹⁹Ibid., pp. 98-99.

²⁰In separate descriptive investigations, Hedden and Hoover reported that, based on the recommendations and conclusions found in current studies, there is a need for further research dealing with specific aspects of the process of listening to music, particularly on the college level. See Steven K. Hedden, "Development of Music Listening Skills," Council for Research in Music Education 64 (Fall 1980): 12-22; and Patricia D. Hoover, "A Synthesis of the Findings of Research Related to the Process of Listening to Music, the Status of the Research and Implications for Music Education," (D.M.A. dissertation, University of Oregon, 1974).

Problem of the Study

The problem of the present study was to determine the relative effectiveness of two approaches to teaching aural discrimination of meter in a college introductory music class: a method involving rote performance of prescribed rhythm patterns was compared to a lecture-demonstration method incorporating notational skills without performance. An ancillary problem was to investigate the relationship between rhythm aptitude and meter discrimination achievement.

CHAPTER II

REVIEW OF RELATED STUDIES

Introduction

The study of rhythm has for centuries been a major preoccupation of composers, theorists, and more recently, music educators. Winick, in an annotated bibliography of rhythm, lists more than 400 sources, approximately half of which are concerned with pedagogical implications.²¹ In recent years numerous subcategories have emerged, contributing to a growing body of literature regarding the development of various rhythm skills.

Although no studies were found that address the specific problem under investigation--methodology appropriate to the teaching of aural discrimination of meter in the college introductory music class--various collateral inquiries contributed to the approach and methodology of the present study. The body of research considered pertinent to the present investigation can be divided into two categories: studies relative to the development of overall aural skills in the college level introductory music class and studies related to the development of rhythm skills in particular.

²¹Steven Winick, Rhythm: An Annotated Bibliography (Metuchen, N.J.: Scarecrow Press, 1974).

The College Introductory Music Class

The general course content of an introductory music course is typically labelled in a number of ways.²² The determining factor is that the course be designed for the non-music major and deal specifically with the development of aural perception. Current research is primarily of two types: (1) investigations into various motivational techniques such as guided listening, programmed instruction, or musical preference; or (2) studies concerning the development of basic listening skills. The latter is of primary relevance to the present study, and it is represented by the research of Eisman²³ and Dodson.²⁴

Eisman Study

Eisman explored the plausibility of using a problem-solving approach to teaching aural skills to the general music student. Two intact music appreciation classes at Queens College, New York, were exposed to an investigator-devised experimental method and a more traditional lecture-demonstration approach, both of which were taught by the

²²Common designations for the entry-level music offering include; Music Appreciation, Introduction to Music, Fundamentals of Music, General Music, etc.

²³Lawrence W. Eisman, "The Formulation and Testing of a Problem-Solving Approach to the Development of Perceptive Listening Skills in Selected College Music Appreciation Classes," (Ed.D. dissertation, New York University, 1975).

²⁴Thomas A. Dodson, "The Effects of a Creative-Comprehensive Approach and a Performance Approach on Acquisition of Music Fundamentals by College Students," Journal of Research in Music Education 25 (Summer 1980): 103-110.