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THE EFFECT OF CREATIVE EXPERIENCES ON MUSICAL GROWTH

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ABSTRACT

THE EFFECT OF CREATIVE EXPERIENCES
ON MUSICAL GROWTH

By

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Purpose

The purpose of this study was to examine the effect of an orderly sequence of creative experiences on the musical growth of college level nonmusic majors. Musical growth consisted of music achievement, music learning attitude, and creative musical skill.

Procedure

The sample consisted of thirty-one students enrolled in an elective music fundamentals course at Michigan State University during the Spring term of 1977. The subjects were randomly assigned to two sections of the course. Each section met four periods a week during a ten-week term. Section I was designated as the control group and section II served as the experimental group. Both sections were taught alternately by a graduate assistant (T_1) in the Music Education Department and the researcher (T_2). T_1 conducted two different lectures each

week on theoretical content from the course textbook for both experimental and control groups. Both groups also attended two different lab sessions each week that covered practical aspects of the course material taught by T_2. Lab sessions for the control group consisted of listening and performing activities while the experimental group participated in a program centered around creative music learning experiences. Pretest and posttest music achievement and music learning attitude measurements were given to the sample at the beginning and end of the experimental period. A single posttest measuring musical creativity was administered at the end of the experiment. Analysis of variance and covariance were the statistical procedures used in testing the hypotheses.

Hypotheses and Results

Hypothesis I: Students will perform differently on a criterion-referenced music achievement test according to grouping by instructional method.

This hypothesis was rejected.

Hypothesis II: Students will perform differently on a music learning attitude scale according to grouping by instructional method.

This hypothesis was also rejected.

Hypothesis III: Students will perform differently on a test of musical creativity according to grouping by instructional method.

This hypothesis was accepted.

Conclusions

Based on the results of this investigation, the following conclusions were drawn:

1. When using creative music learning experiences in elective music fundamentals classes at the university level, the experiences have no observable effect on music achievement.

2. When using creative music learning experiences in elective music fundamentals classes at the university level, the experiences have no observable effect on attitudes toward music learning.

3. When using creative music learning experiences in elective music fundamentals classes at the university level, an increase in creative musical skill is possible.

To My Family

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CHAPTER I

THE PROBLEM

Introduction

In most music education curricula, three basic experiences have been identified as ways in which learners can come in contact with music: performing, listening, and creating.[1] While students are expected to learn the structural elements of music, some kind of musical activity is necessary so that abstract aural material can become concrete. Practical application of musical concepts and symbols through a variety of informal musical activities is an invaluable aid to the music learning process.[2] For example, if students are expected to identify the Dorian mode, experience in singing, listening to, and even improvising or writing a melody in this mode facilitates their understanding of its structure. Similarly, all important aural concepts need realization through various

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[1]Robert Sidnell, Building Instructional Programs in Music Education (Englewood Cliffs, N. J.: Prentice-Hall Inc., 1973), p. 82.

[2]James L. Mursell, Music Education: Principles and Programs (New York: Silver Burdett Co., 1956), p. 116.

experiences, such as singing a song built on the C major scale to learn the notes in that scale.

Performing is a process wherein learners are able to respond to or produce musical stimuli. Singing, performing on instruments, and motor responses such as moving rhythmically are important learning experiences. Responses to musical notation increase a learner's knowledge of various music symbols and give him a better aural understanding of musical sound. Since performing requires physical, tactile, mental, and motor skills for manipulating musical elements, it must be included in any area of music study to insure effective music learning.

Listening can lead to different kinds of motor and/or verbal-intellectual responses. Music educators are usually concerned with analytical listening to promote understanding and enjoyment. This kind of listening usually centers on the structured details of music. Structural listening requires that one perceive, process, and store different attributes of sound patterns. Leonhard and House suggest that music listening should encompass a variety of experiences, which may include perceiving the beauty of tone and developing sensitivity to rhythm, melody, harmony, form, and color.[3] Although

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[3]Charles Leonhard and Robert W. House, Foundations and Principles of Music Education (New York: McGraw-Hill Book Co., 1972), p. 256.

analytical listening is an intellectual process, it does not exclude feelingful and emotional responses. The emotional element in music serves as a springboard toward conscientious listening and the appreciation of music as a significant art form. Basically, analytical listening responses are reinforced by emotional responses.[4] Like performing, listening is another accepted way of learning music concepts effectively.

Creating, however, is a music learning activity different from either performing or listening, although it may include elements of both. Creating forces one to learn through self-discovery and free inquiry. Moreover, the learner is able to study and manipulate music materials largely through trial and error. Traditionally, musical creativity refers to improvisation and composition; in addition, these musical acts are thought to reinforce a learner's understanding of musical structure and notation. The musical creator works with "sound" ideas, rather than verbal ideas, and during the improvisational or compositional process, he synthesizes musical elements in a unique way.

Some psychologists have considered creating as a simple and natural process with built-in motivating

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[4]James L. Mursell, The Psychology of Music (W. W. Norton and Co., 1937), p. 206.

power.[5] Creative ways of learning satisfy "human motives" as the creative process unfolds. Satisfaction gained from a specific set of responses stimulates production of additional similar responses. Such responses themselves act as reinforcers.[6] Thus, creativity as a reinforcer supports the notion that it is a motivating learning experience.

If creating is, in fact, a way of learning that occurs through self-discovery and free inquiry, it could be an experience that is rewarding and satisfying for most students. Alice Meil states that creativity is present if "the individual has made something new to himself that is satisfying and in that sense useful to him, and if the product is 'surprising' (that is, new) to him."[7] The discovery of an unsuspected ability might help to produce more positive attitudes toward learning and motivate students to higher levels of achievement.

This investigation will focus on creative music learning activities and experiences presented in a music class. The study will deal with learners enrolled in an

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[5]E. Paul Torrance and R. E. Myers, Creative Learning and Teaching (New York: Dodd, Mead and Co., 1970), p. 49.

[6]Henry C. Ellis, Fundamentals of Human Learning and Cognition (Dubuque, Iowa: Wm. C. Brown Co., 1972), p. 17.

[7]Alice Meil, Creativity in Teaching (Belmont, California: Wadsworth Publishing Co., 1961), p. 6.

elective music fundamentals course for nonmusic majors at the university level.

Need for the Study

Since the beginning of this century, music educators have discussed the importance of creative experiences in the music classroom. In 1903, Calvin Cady[8] claimed the educational value in creative music. His book of compositions by piano students represented over fourteen years of experimentation. Later, Stewart MacPherson[9] suggested that educators give children the opportunity to create their own melodies.

In 1915 Mrs. Satis Coleman[10] recognized the value of music composition for children. Throughout a number of experiments she taught children music by having them create their own music and construct their own instruments. In 1929 the Music Supervisors National Conference emphasized the place in the curriculum of creative experiences with music.[11] Three decades later, pilot projects conducted in Baltimore, Maryland; San Diego, California; and

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[8]Calvin B. Cady, Music Education (Chicago: Clayton F. Summy Co., 1903).

[9]Stewart MacPherson, The Music Education of the Child (Boston: The Boston Music Co., 1916), p. 63.

[10]Satis N. Coleman, Creative Music for Children (New York: G. P. Putnam's Sons, 1922).

[11]Journal of Proceedings (Washington, D.C.: Music Supervisors National Conference, 1929), pp. 99, 271.

Farmingdale, New York suggest that music study through creating provides interest and motivation for children.[12]

Recently, Aston and Paynter designed 36 creative projects in music growing from experiments involving children in primary and secondary schools, as well as students at the university level. Results from the experiments indicate that musical creativity stimulates student interest and involvement in music learning.[13]

Although creative activities are considered necessary in the music education program, little objective evidence relating such activities to music learning is available.

Purpose

This study had three distinct purposes:

1. To develop an orderly sequence of experiences and projects wherein students can come in contact with music through improvising, composing, performing, and listening to music created by themselves;

2. To develop a valid and reliable instrument to measure music learning attitudes;

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[12] Experiments in Musical Creativity (CMP 3) (Washington, D.C.: Music Educators National Conference, 1968).

[13] John Paynter and Peter Aston, Sound and Silence (Cambridge: The University Press, 1970), p. 9.

3. To determine if a method of instruction involving creative musical experiences is comparable to a conventional method of music instruction.

Hypotheses

The study was designed to test the following hypotheses:

Hypothesis I: Students will perform differently on a criterion-referenced music achievement test according to grouping by instructional method.

Hypothesis II: Students will perform differently on a music learning attitude scale according to grouping by instructional method.

Hypothesis III: Students will perform differently on a test of musical creativity according to grouping by instructional method.

Definitions

Musical Growth is defined as an observable change in music achievement, music learning attitude, or creative musical skill.

Music Achievement is defined as growth in the discrimination of musical elements. Music achievement objectives are located in Appendix H.[14]

Music Learning Attitude is defined as the way one thinks, feels, or acts toward studying music and participating in various music-related activities.

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[14]Reprinted by permission of Dr. H. Owen Reed and Dr. Robert G. Sidnell.

Creative Musical Skill is the ability to produce a musical happening through written composition or extemporaneous performance.

Creative Musical Experience is a process of music learning that allows a learner freedom to form a musical entity from various musical elements.

Conventional Music Instruction is the teaching of music, through listening and performing, that consists of basic ear-training, sight-singing, and experiences at the piano keyboard.

Rhythmic Cadence is a temporary or permanent pause in the flow of rhythm patterns.

Pattern is a group of notes combined to give some small degree of completeness.

Configuration is an initial idea or musical gesture with a duration that expands from two notes to several measures of music.

Augmentation is an increase in the time values of the notes in the imitating voice.

Diminution is a decrease in the time values of the notes in the imitating voice.

Retrograde is defined as the imitating voice progressing backwards.

Inversion is defined as ascending intervals imitated by descending intervals and vice versa.

Sequence is a recurrent melodic pattern repeated at successively higher or lower intervals.

Assumptions

This study will accept the following assumptions:

1. The typical student who has taken an elective music fundamentals course for nonmusic majors has, by the time of course completion, progressed in musical growth to a point that is of sufficient strength and specificity to be measurable.

2. The instruments and method employed in this study are adequate and suitable. (See Chapter III for information concerning the criterion instruments and experimental teaching method.)

3. The sample employed in this study is representative of the population of students who may enroll in Music 271 at Michigan State University.

4. The research design used for this study is a true experimental design that controls for all sources of internal invalidity.

Scope and Limitations

The study dealt with the experimental testing of one instructional method that involved creative musical experiences. Three factors of musical growth were measured:

1. Music achievement;
2. Music learning attitudes; and
3. Creative musical skills.

An achievement test, based on the content of the course textbook, was constructed. Music learning attitudes were assessed with an attitude scale developed specifically for this study. The Vaughn Test of Musical Creativity served as a measure of creative musical skills.

It is recognized that there are both known and unknown factors which affect musical growth. Probably the most important influencing factors are musical experience, innate musical sensitivity, and the quality of previous music instruction. Therefore, the effects of a ten-week, college-level music fundamentals course may be insignificant in permanently affecting different aspects of musical growth that have occurred in the average Music 271 student for a number of years. In an effort to test adequately the effect of the experimental treatment, two variables were identified and held constant. They were: (1) music achievement and (2) music learning attitude. The music achievement test and music learning attitude scale were used as pretests and posttests. The Vaughn Test of Musical Creativity served only as a posttest.

The data were handled through a variety of statistical processes including analysis of variance, analysis of covariance, the t-test, and Pearson Correlation.

The sample consisted of thirty-one undergraduate nonmusic majors enrolled during the Spring term of 1977 in Music 271, an elective music fundamentals course at Michigan State University.

Overview of the Report

In the following chapter, literature related to this study will be discussed. The literature deals with creativity theory and research studies relating music to creativity.

In Chapter III the design of the study is discussed, along with the criterion instruments and experimental procedures. The results of the study are presented in Chapter IV. The summary and conclusions are submitted in Chapter V, along with recommendations for further research.

CHAPTER II

REVIEW OF RELATED LITERATURE

Three areas of literature review seem pertinent to this investigation: theories of creativity, related studies, and relevant studies. The first area is focused on different creative thinking processes, in addition to various ideas concerning the guidance and measurement of creative behavior. Secondly, research relating music learning to creative thinking, creative teaching, and self-constructed musical creativity tests is presented. The third area contains research that deals with the measurement of experimental creative teaching methods similar to the present study.

Theories of Creativity

Since 1950, when Guilford[1] made his famous address on creativity to the American Psychological Association, psychologists and educators have become increasingly involved in researching creativity. The main problems with this enormous body of research literature are the widely

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[1]John F. Travers, Fundamentals of Educational Psychology (Scranton, Pa.: International Textbook Co., 1972), p. 252.

differing opinions of definition and methodological approaches. For purposes of organization, however, creative theories may be divided into three general categories: (1) descriptions of different processes in creative thinking; (2) creativity as a mode of instruction;[2] and (3) the measurement of creative behavior.[3]

Relating to the first category, Guilford and Merrifield proposed six different kinds of creative thinking behaviors for the purpose of identifying creative talent. These psychologists consider each of the six creative thinking abilities or factors as a measurable construct of creative mental functioning. The six creative thinking abilities are:

1. Sensitivity to problems: seeing defects, needs, deficiencies; seeing the odd, the unusual; seeing what must be done.
2. Flexibility: ability to shift from one approach to another, one line of thinking to another, to free oneself from a previous set.

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[2]E. Paul Torrance, Encouraging Creativity in the Classroom (Dubuque, Iowa: Wm. C. Brown Co., 1970), p. vii.

[3]Joe Khatena, "The Measurement of Creative Behavior," in Educational and Psychological Measurement, eds: David A. Payne and Robert F. McMorris (Morristown, N. J.: General Learning Press, 1975).

3. Fluency: ability to produce a large number of ideas.
4. Originality: ability to produce remote, unusual, or new ideas or solutions.
5. Elaboration: ability to work out the details of a plan, idea, or outline; to "embroider" or elaborate.
6. Redefinition: ability to define or perceive in a way different from the usual, established, or intended way, use, etc.[4]

In addition to the six creative thinking abilities proposed by Guilford and Merrifield, Marksberry described four separate stages involved in the creative thinking process. These four stages are a series of experiences or problem-solving situations that are thought to progress in a sequential pattern. Each stage is a continuation of a preceding experience which contributes to the total solution of a particular problem.[5] They are described as follows:

> The period of preparation in the long range sense actually encompasses all the past life experiences which will be drawn upon in a particular creative process. The immediate preparation period for a

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[4]J. P. Guilford and P. R. Merrifield, The Structure of Intellect Model: Its Uses and Implications (Los Angeles: Psychological Laboratory, University of Southern California, 1960), p. 18.

[5]Mary L. Marksberry, Foundation of Creativity (New York: Harper and Row Publishers, 1963), pp. 17-19.

particular creative process starts when an individual has a desire strong enough to trigger activity. It is concerned with inspection of the problem and the collection of information or material. It varies in length of duration from many years to relatively short periods of time, depending upon the individual, the nature of the problem, and the technical knowledge, habits, and skills the individual has at his command. It is often a period of intense routine work, concentration, and study characterized by trial and error. If insight (an idea which results in the solving of the problem) does not come as a gradual illumination gained through these activities, then the period of preparation is followed by a period in which there seems to be little progress in the direction of solution.

The period of incubation is one of unconscious activity, during which time there is a ripening or germinating of the solution within the individual, who searches "in the back of his mind" for solutions to the persistent, difficult problem. It is often a period of frustration characterized by extreme restlessness and feelings of inferiority. When progress toward the solution appears to be at a standstill, a pattern of changed activity to give the creative self time and freedom for growth appears to be the best course of action.

The period of insight. Eventually this period is terminated by the period of insight, inspiration, or illumination. As a result of the reorganization of previously accumulated experience, insight finally comes, sometimes in a flash, when the creator sees the answer, thinks of a hypothesis, or has a useful "hunch." Such moments are marked by feelings of success and accomplishment and are followed by intense activity to capture the idea in more permanent form.

The period of verification. The process is concluded, regardless of how insight comes, with a period of verification, elaboration, perfecting, and evaluation. During this period the creator painstakingly checks, tests, criticizes, elaborates, and polishes the solution until he is satisfied as to the fitness and value.

Although the two foregoing views regarding creative thinking processes differ in concept, both views are generally accepted by many psychologists and educators interested in research on creativity.

In the second category, Torrance supports the idea that classroom creative activities provide the kind of learning that becomes a life-long process rather than "learning by authority" or the kind of learning supported by stimulus-response psychology.[6] Learning by authority requires the kind of abilities such as recognition, memory, and logical reasoning, usually assessed by traditional aptitude and achievement tests. In addition to the aforementioned abilities, creative learning involves abilities such as the ones proposed by Guilford and Merrifield. Each of the creative thinking abilities mentioned by Guilford and Merrifield is a distinct thinking skill that provides educators with the kind of information needed to cultivate creative behavior.

In order to cultivate creative thinking skills, a "responsive environment" rather than a stimulating environment is needed. A "responsive environment," not to be confused with a "laissez-faire environment," gives learners the necessary freedom to develop innate creative

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[6]Torrance, Encouraging Creativity in the Classroom, p. 2.

thinking abilities.[7] Of course, the aforementioned statement does not imply that a free environment is devoid of control and structure. Vaughn relates that "a sensitivity toward the role played by structure in fostering creative behavior will probably be the most critical single determinant in establishing creative environments."[8] Conditions under which creativity can be encouraged will insure proper guidance of creative mental functioning.[9] In addition, the application and reapplication of rewards and punishment are unnecessary because learning through creative activity has its own built-in motivating power.[10] In the field of music learning, Cox concludes: "Since music is a product of creative activity, it would seem that an approach to the teaching of music in creative ways would be entirely consistent with the very nature of music."[11]

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[7]Robert D. Strom and E. Paul Torrance, Education for Affective Achievement (New York: Rand McNally and Co., 1973), p. 260.

[8]Margery M. Vaughn, "Cultivating Creative Behavior," Music Educators Journal 59 (1973): 34-37.

[9]Robert W. Sherman, "Creativity and the Conditions of Knowing in Music," Music Educators Journal 58 (1971): 18-21.

[10]Torrance, Encouraging Creativity in the Classroom, p. vii.

[11]Edna M. Cox, "A Functional Approach to Creative Experiences in Music in the Elementary School" (Ed.D. dissertation, Columbia University, 1966).

Finally, Khatena identifies some useful ways of measuring creativity. At the present time, there is no universally accepted method for quantitative evaluation of creativity. However, one important aspect of measuring creative behavior is the way credit is awarded for creative versus non-creative responses. Fluency is measured simply by counting the number of responses given. If responses are categorized, credit is awarded for the number of shifts in thinking from one category to another as a measure of flexibility. Elaboration is determined when the number of new ideas, expressed by details added to the basic idea, is counted. Although it is difficult to decide upon the originality of a response, originality is assessed by the principle of infrequency. For example, if a response occurs 5 percent of the time, it is given zero credit. For a response that occurs 1 percent of the time, five credits are given.[12]

Khatena also discusses certain reliability problems commonly found in creativity tests. He cautions the reader against using unsuitable methods of estimating reliability for instruments that require use of the imagination. Internal consistency presents a problem, because the stimuli used for such instruments cannot always stimulate the imagination at will. Examination of test-retest

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[12]Khatena, "The Measurement of Creative Behavior," pp. 313-314.

reliability is inappropriate; many extraneous conditions that occur within the testing interval increase the amount of variation in creative behavior between the first and second testing periods. Although some subjective judgments are involved in the scoring of creativity tests, interjudge reliability data provides the most appropriate reliability estimate.[13]

In Yamamoto's discussion concerning the use of creativity measures, he suggested one procedure for determining validity that is particularly relevant to the present study. Concurrent validity can be obtained by correlating test scores from self-constructed creativity tests with those from well established creativity measures.[14]

The literature concerning creativity theory reviewed above, show that the study of creativity is complex, providing no definite rules that can be followed. For example, there is no single measurement procedure or instrument that is common to different fields of creative educational research; therefore, any procedure which purports to measure "creative behavior" faces the problems of a heterogeneous population. For this reason, the

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[13]Joe Khatena, "Some Problems in the Measurement of Creative Behavior," Journal of Research and Development in Education 4 (1971): 77.

[14]Kaoru Yamamoto, "Creative Writing and School Achievement," School and Society 91 (1963): 308.

literature reviewed herein deals primarily with music-oriented research.

In the field of music learning a number of studies have been conducted that range from the influence of music study on creative thinking to those that measure the effect of creative activities on creative thinking, musical creativity, musicality, attitude, and achievement.

Related Studies

Roderick[15] investigated the influence of one year of music study on the ability of music majors to think creatively, and compared the creative thinking ability of music majors with that of students in other academic areas. In addition, he studied relationships among the subjects' creative thinking ability, scholastic ability, and musical ability. Four groups of freshman music majors, junior music majors, art majors, and freshmen from academic areas other than music were used. The Wing Standardized Tests of Musical Intelligence, Drake Musical Aptitude Tests, Aliferis Music Achievement Test, and Minnesota Tests of Creative Thinking Abilities served as data gathering instruments. Scholastic ability test scores and music theory grades were obtained. The researcher used the

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[15]James L. Roderick, "An Investigation of Selected Factors of the Creative Thinking Ability of Music Majors in a Teacher Training Program" (Ed.D. dissertation, Univeristy of Illinois, 1965).

Minnesota battery as pretest-posttest and scored it for fluency, flexibility, originality, and elaboration.

The findings included: (1) low positive relationships between creative thinking ability test scores and Wing, Aliferis, and scholastic ability test scores; (2) no relationships between creative thinking ability test scores and Drake test scores or music theory grades; (3) no significant difference between music majors and students in other academic areas in creative thinking ability. Roderick concluded that music study had no influence on creative thinking ability test scores.

Over a period of one semester, Simpson[16] conducted a similar study with inner-city high school students. He used a battery of tests that measured six factors of creativity: word fluency, divergent production of figural systems, elaboration, spontaneous flexibility, ideational fluency, and originality. The entire battery served as pretest and posttest. The experimental group consisted of 173 students enrolled in various music classes and a control group of 45 students who took no music. Although no experimental methods were used, the experimental classes were Band, Choir, Beginning Ensemble, Beginning Instruments, Harmony, Music Appreciation, Piano,

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[16]Donald J. Simpson, "The Effect of Selected Musical Studies on Growth in General Creative Potential" (Ed.D. dissertation, University of Southern California, 1969).

Music History, and Jazz Workshop. Results from the study indicated that the experimental group made significant gains on the factors of word fluency, elaboration, and spontaneous flexibility at the .01 level of confidence. The researcher concluded that certain music classes had an effect on creativity, "but the rank order of their effectiveness varies according to the factor being tested."

Tarratus[17] designed a study to identify creative music students and assess relationships between creative ability and sex, academic aptitude, grades, music skills, and jazz experience. Three groups of 93 freshmen and 52 graduate students from the Ohio State University School of Music were compared. The investigator used a three-factor Guilford test that measured fluency, flexibility, and originality along with a humor-test developed especially for the study. There was found to be no significant correlation between scores from the Creativity Battery and (1) a measure of scholastic aptitude; (2) tests of musical skills and information; (3) music theory grades; (4) total University grades; and (5) graduate grades. Correlations between various parts of the Creativity Battery and music notation speed, freshman English grades, and jazz experience were significant but low.

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[17]Edward A. Tarratus, "Creative Processes in Music and the Identification of Creative Music Students (Ph.D. dissertation, Ohio State University, 1964).

Research literature revealed two studies in which researchers actually built tests to measure musical creativity. These two studies appear below in chronological order.

Vaughn[18] constructed a musical creativity test and administered it, along with the Torrance Tests of Creative Thinking (TTCT) and the Bentley Measures of Musical Ability, to 47 fourth-grade students. Basically, the purpose of Vaughn's research was to determine whether musical creativity was significantly related to creative thinking. The musical creativity test was designed to measure three factors of fluency, rhythmic security, and ideation. Three judges evaluated data from the musical creativity test, and correlations between scores from all three tests were performed.

The results included high correlations between each of the musical creativity test factors and the TTCT factor of originality. Significant, but low, correlations were found between Bentley test scores and each of the TTCT and musical creativity test factors, except the TTCT factor of fluency. Vaughn concluded that musical creativity may be an indicator of general creativity.

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[18]Margery M. Vaughn, "Music as Model and Metaphor in the Cultivation and Measurement of Creative Behavior in Children" (Ed.D. dissertation, University of Georgia, 1971).

A musical creativity test was developed by Gorder[19] and administered to 80 junior and senior high school instrumental music students. Gorder's test, Measures of Musical Divergent Production (MMDP), consisted of four short musical passages which served as stimulus materials for musical improvisation. The improvised phrases were scored for fluency, flexibility, elaboration, originality, and quality (musical appeal). A panel of six experts considered originality and quality as primary criteria for assessing creativity, and the other three factors (fluency, flexibility, and elaboration) as basic creative production abilities.

The researcher established concurrent validity for the MMDP by developing a rating scale to obtain teacher ratings of each subject's level of musical creativity. Correlation coefficients computed between each MMDP factor and the teacher ratings ranged from -.14 to .54. Multiple correlation between all MMDP factors and teacher ratings was .57. Construct validity was assessed by means of a factor analysis, and each factor except elaboration was demonstrated. Reliability coefficients for all MMDP factors using test-retest, split-half, and interjudge reliability ranged from .50 to .90.

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[19]Wayne D. Gorder, "An Investigation of Divergent Production Ability as Constructs of Musical Creativity" (Ed.D. dissertation, University of Illinois, 1976).

Gorder reported the following results and conclusions: (1) all MMDP ability scores except those pertaining to quality were not related to measures of general intelligence; (2) MMDP test scores showed no correlation with selected parts of the Seashore and Drake musical aptitude tests or the Colwell music achievement tests; (3) musical creativity constructs as measured by the MMDP were not dependent on age, musical training, or musical experience.

The two following studies were focused on creativity as it applies to music teaching at the elementary and secondary school levels.

Cox[20] developed a guide for the purpose of assisting classroom teachers and music specialists in preparing classroom creative activities for elementary school children. She reviewed creativity theory and research on the identification, development, and evaluation of creativity along with practical suggestions for developing creative experiences. The most interesting aspect of the study is that Cox discussed the application of creativity theory to music teaching in the elementary school.

A similar study relating creativity theories to secondary school vocal music instruction was done by

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[20]Cox, "A Functional Approach to Creative Experiences."

Brown.[21] The literature review included various psychological principles and philosophical views of the creative process. He placed emphasis on philosophical ideas developed by the pragmatic school of thought. In addition, the investigator constructed a questionnaire to ascertain the status of secondary school teaching and music educators' awareness of creativity as an educational process. After collecting data from a number of high schools in the United States, Brown concluded that the evidence showed a relationship between creativity and music teaching.

Relevant Studies

Vaughn and Myers [22] studied the influence of certain creative musical activities on creative thinking and musical creativity at the elementary school level. The experimental program was designed to show a parallel between musical process and four factors of creative thinking (fluency, flexibility, elaboration, and originality). Experimental and control groups were compared for differences on measures of creative thinking. Relationships between intelligence, musical aptitude, and

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[21] Elwood H. Brown, "A Study of the Application of Creativity in the Teaching of Secondary School Music" (D.M.A. dissertation, University of Missouri at Kansas City, 1968).

[22] Margery Vaughn and R. E. Myers, "An Examination of Musical Process as Related to Creative Thinking," Journal of Research in Music Education 19 (1971): 337-341.

creative thinking were also investigated. The experimental group showed a significant gain over the control group only on the factor of fluency at the .05 level. There were significant relationships between IQ, fluency, and flexibility; however, no relationship was found between musical aptitude and creative thinking. The experimental group surpassed the control group on a test of musical creativity at the .01 level of significance. Vaughn and Myers suggested that replications of the study should consider the order of presentation of creative activities and a more comprehensive measure of musical creativity.

A study conducted by Wollman[23] was designed to determine the effect of music composition involving contemporary aleatory techniques on the musicality of teacher education majors. Two classes containing 56 students were designated as experimental and control groups. Each group of 28 subjects met for two fifty-minute sessions a week within a period of one semester. Both groups received similar instruction. However, the experimental group was exposed to creative activity in the form of music composition for 25 minutes of each semi-weekly session. Criterion measures were the Seashore Measures of Musical Talents.

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[23]William A. Wollman, "The Effects of a Contemporary Compositional Process Derived from Aleatory Techniques on the Musicality of College Level Non-Music Majors" (Ed.D. dissertation, New York University, 1972).

The Seashore battery consists of six subtests: pitch, loudness, rhythm, time, timbre, and tonal memory. Wollman used the entire battery as pretest and posttest. Results from several t-tests indicated no significant difference between the two groups on the pitch, loudness, rhythm, time, and timbre tests at the .05 level. The experimental group performed significantly higher than the control group on the tonal memory test at the .05 level of confidence.

Wollman concluded that aleatoric composition made a significant contribution to the development of musicality as measured by Seashore's tonal memory test. However, the researcher's conclusions are not warranted according to the statistical test used with his research design.

Robison[24] observed the influence of musical composition on interest and achievement. Music achievement was measured with Colwell's Music Achievement Tests and the Watkins-Farnum Performance Scale. A rating scale served as a measure of interest. Sixty fifth-grade students were randomly assigned to experimental and control groups. Experimental treatment consisted of musical composition activities presented in an informal manner as an

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[24]William H. Robison, "An experiment to Determine the Effectiveness of Music Composition as an Aid to Musical Maturation in Fifth Grade Beginning Wind Instrumental Students" (Ed.D. dissertation, University of Georgia, 1971).

aid to instrumental music study. An analysis of covariance indicated a significant difference in favor of the experimental group at the .05 level of significance on all three measures.

In Robison's conclusions, he indicated that the experimental group showed the most gain in instrumental music achievement. It is important to note that the teachers involved in the study scored the Watkins-Farnum Performance Scale which served as the criterion measure of instrumental music achievement. The teachers' expectations of the students may have biased the results of the study, because psychological research has shown that students tend to progress to the level that teachers expect.[25]

Wolfe,[26] investigating the use of composition as a means of achieving musical comprehension in general music classes at a Michigan elementary school, also considered attitude toward the study of music. Two classes of fifth grade students were arbitrarily selected as experimental and control groups. Subjects in the experimental group received instruction in singing and listening to music,

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[25]Kenneth Gergen, et al., Social Psychology: Explorations in Understanding (Del Mar, California: CRM Books, 1974), p. 150.

[26]Curtis S. Wolfe, "An Investigation Into the Use of Composition as a Means of Achieving Musical Comprehension in the Elementary School General Music Class" (D.M.A. dissertation, University of Oregon, 1971).

along with experiences in musical composition. Subject matter for the control group consisted of singing and listening to music, plus written exercises. The investigator used parts one and two of the Colwell Music Achievement Tests (MAT) and the Kwalwasser-Ruch Test of Musical Accomplishment to measure aural and visual comprehension. In addition, the investigator developed an instrument to measure attitude. All three measures were administered to the sample at the beginning and end of the school year.

On the basis of several t-tests, the following results were reported: (1) the control group achieved the most significant gains on the Colwell MAT; (2) the experimental group showed significant gains on selected sections of the Kwalwasser-Ruch Test; and (3) the experimental group showed significant improvement in attitude while the control group exhibited a significant loss. If the control group did show deterioration in attitude, the loss might have been a result of statistical regression for which Wolfe's design did not provide control.

The development of musical perception through creative processes was studied by Bradley.[27] Seven classes were chosen for the experiment. One class served as the experimental group, five classes were the control

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[27]Ian L. Bradley, "Development of Aural and Visual Perception Through Creative Processes," Journal of Research in Music Education 22 (1974): 234-240.

group, and one group was used to test the reliability of a criterion-referenced achievement test. Pretest and posttest scores were compared. An analysis of differences obtained from both parts of the test (aural and visual) was tested for significance. The results showed significant gains for the experimental group at the .01 level of confidence. The experimental program consisted of what Bradley called creative processes in music: listening, performance, and music composition. The investigator concluded that aural and visual perception can be developed through creative processes.

The similarity in approach used by Wollman, Robison, Wolfe, and Bradley to measure musical creativity is plausible. However, their research designs did not provide control for differences between experimental and control group teachers. These differences alone may have produced a significant amount of variation in the posttest scores made between the experimental and control groups.

Conclusions

On the basis of the literature reviewed in this chapter, the following conclusions are drawn: (1) an awareness of creative thinking abilities and creative learning processes is helpful when planning teaching strategies to develop creative behavior; (2) the information concerning the measurement of creative behavior

provides a basis for selecting a suitable instrument to measure creative musical skill; (3) the literature suggests that the sequence of creative experiences should be considered; and (4) although musical creativity can be observed with a variety of criterion measures, none of the studies reviewed included music achievement, music learning attitude, and creative musical skill as dependent variables.

Furthermore, it is apparent from the literature review that tighter controls are needed in future experimental research designs before definite implications can be made about the instructional value of musical creativity.

CHAPTER III

DESIGN OF THE STUDY

Sample

Thirty-one college students participated in this study during the Spring of 1977. They were all nonmusic majors enrolled in Music 271 at Michigan State University. Music 271 is an elective music fundamentals course available to all nonmusic students enrolled at the University. By class level there were 11 freshmen, 11 sophomores, three juniors, and six seniors.

At the beginning of the study 34 students were enrolled in Music 271. The 34 students were randomly assigned to experimental and control groups, with a total of 17 students in each group. Three of the 17 students in the control group dropped out of the course prior to the middle of the term. At the conclusion of the experimental period, the control group contained 14 students, and 17 students were in the experimental group.

Criterion Instruments

For purposes of this study it was necessary to obtain measures on three variables: music achievement, music learning attitude, and creative musical skill. A

test based on the content of the textbook used for Music 271 was constructed by the researcher to gauge music achievement. Music learning attitude was measured with a scale developed especially for this study, and the Vaughn Test of Musical Creativity served as a measure of creative musical skill.

Achievement Test

In order to measure music achievement during the experiment, it was necessary to construct a test based on the material used in the learning situation. The textbook used for the study was written by Dr. H. Owen Reed and Dr. Robert Sidnell of Michigan State Universtiy. The book contains five chapters on rhythm, melody, harmony, form and color.[1] In each chapter, the material is presented sequentially in different units. Each unit is concluded with Check Your Understanding (CYU) pages to facilitate a gradual learning process.

The Music Materials Achievement Test (MMAT) consists of 50 items developed from the CYU pages in the Music 271 course textbook. In criterion-referenced tests, content validity is assured because the items are derived

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[1]H. Owen Reed and Robert G. Sidnell, The Materials of Music Composition (Reading, Mass.: Addison-Wesley Publishing Co., 1977).

only from the material used in the learning situation. Concerning content validity, Cronbach and Meehl state:

> Content validity is established by showing that the test items are a sample of the universe in which the investigator is interested. Content validity is ordinarily to be established deductively, by defining a universe of items and sampling systematically within this universe to establish the test.[2]

Reliability of the MMAT was established by the Kuder-Richardson formula #20. The reliability coefficient for the test was determined during the study on the participating subjects. All subjects recorded their responses on mark sense sheets and the data were processed by Evaluation Services at Michigan State University. Results of the data analysis revealed a reliability coefficient of .82 for the 31 subjects in the sample. The MMAT and item statistics, including the indices of discrimination and difficulty, appear in Appendix A.

Music Learning Attitude Scale

In developing the Music Learning Attitude Scale (MLAS), it was necessary to consider items that would measure the attitude as defined in Chapter I. Therefore, the MLAS evolved from three sources. First, several items

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[2]Lee J. Cronbach and Paul E. Meehl, "Construct Validity in Psychological Tests," in Principles of Educational and Psychological Measurement, ed: William A. Mehrens and Robert L. Ebel (Chicago: Rand McNally and Co., 1967), p. 245.

were chosen from two scales constructed by Mehling.[3] These items related different musical styles to the attitudes and needs of college nonmusic majors. The second source came from the opinions of nonmusic majors concerning their preferences for different music learning experiences. The opinions were obtained by administering an open-ended questionnaire to 32 students enrolled in Music 272 during the Fall term of 1976. Music 272 is a music appreciation course available to all Michigan State University nonmusic majors. It was assumed that students enrolled in Music 272 represented the same university population from which the sample for the present study was chosen. As a result, responses made on the questionnaire were reviewed and used as a foundation for other items written by the researcher. The third source of items came from a Musical Habits Survey by Wifler.[4] The items from the Wifler survey provided a measure of attitude toward participating in music-related activities. The completed form of the MLAS consists of 40 items.

Construct validity was assessed by means of the "known groups method." According to Kerlinger, "In this

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[3]Gordon R. Mehling, "An Analysis of College Undergraduates and Music Teachers in Relation to Student Attitudes Toward Music" (Ph.D. dissertation, Michigan State University, 1972).

[4]Ray C. Wifler, "Musical Habits Survey" (unpublished survey, 1976), pp. 1-4.

method groups of people with 'known' characteristics are administered an instrument and the direction of differences is predicted."[5] The "known groups method" of validation, as used in this study, is the determination of whether the MLAS is capable of showing a difference in attitude between students enrolled in Music 271 and those enrolled in a nonmusic class.

During the Winter term of 1977, the MLAS was administered to a group of Music 271 students and a group of students enrolled in a mathematics class at Michigan State University. Logically, these two groups can be assumed to differ in music learning attitude. This assumption is based on the fact that the Music 271 class and the mathematics class obviously differ in course content. In addition, the mean attitude score for the Music 271 group was assumed to be higher than that of the mathematics class. The results of a t-test of significance between the two groups are shown in Table 3.1.

These results indicate that the two sets of scores do represent populations with different means at the .001 level of significance. Therefore, it can be assumed that the MLAS is capable of showing differences in music

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[5]Fred N. Kerlinger, Foundations of Behavioral Research (New York: Holt, Rinehart and Winston, Inc., 1973), p. 467.

TABLE 3.1.--T-test Between Scores of the Mathematics Class and the Music 271 Class on the MLAS

Group I (Math Class)	Group II (Music 271)
n = 26	n = 33
$\bar{x}$ = 86.93	$\bar{x}$ = 105.85
S.D. = 24.76	S.D. = 15.63
t = 3.58	p = .001

learning attitudes at least as great as the differences between these two groups.

Reliability of the MLAS was computed, using the results obtained from administering it to the sample in the present study. Data were analyzed, using a subprogram reliability computer program developed for the Statistical Package for the Social Sciences. The program was designed for use with the CDC 6500 computer at Michigan State University.[6]

Output of the computer program used consists of a Hoyt reliability coefficient derived from an analysis of variance (ANOVA). Results of the analysis produced a Hoyt reliability coefficient of .89 as obtained with the participating subjects during the study. A copy of the MLAS is contained in Appendix B.

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[6]User's Guide Supplement: SPSS Revisions with Local Modifications, Computer Laboratory, User Information Center, Michigan State University, Copyright 1976.

Vaughn Test of Musical Creativity

To the extent that subjects could demonstrate their creative musical skills, an appropriate instrument was needed to measure such behavior. The Vaughn Test of Musical Creativity (VTMC) was selected on the basis of the following considerations. The test was designed to measure four areas of musical creativity: fluency, rhythm, ideation, and synthesis. Dr. Vaughn defined the four areas as follows:

> (1) fluency - a matter of ease in responding, regardless of quality; (2) rhythm (rhythmic security) - a matter of maintaining tempo set by tester and of displaying some control over any figurations attempted, irrespective of quality of ideas; (3) ideation - a frequency of occurrence of patterning over and above a straight note-for-note response; (4) synthesis - refers to the "aesthetic fit" or how it all comes together.[7]

The VTMC is scored on a rating scale. Test items are rated on the scale from one to five. One is regarded as a minimal response and five is considered as a "comparatively ideal" response. The test manual contains five items, scoring criteria, and instructions for scoring the test.

For the purpose of obtaining concurrent validity, the VTMC was correlated with Torrance's Test of Figural Creativity. The distribution of scores obtained on both

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[7]Margery M. Vaughn, Test of Musical Creativity (Test Instructions for research purposes only; not for unauthorized distribution, 1976), pp. 2-3.

tests were revealed via a histogram[8] and the results appear in Table 3.2.

TABLE 3.2.--Pearson r Between Subtests of Vaughn Musical Creativity Test and Torrance Test of Creative Thinking

Vaughn	TTCT flu.	flex.	orig.	elab.
fluency	.03	.12	.21*	.19*
rhythm	-.02	.09	.14	.17
ideation	.00	.10	.19*	.20*
synthesis	-.02	.09	.19*	.19*

*p > .05

Construct validity was determined by means of a factor analysis and each factor was demonstrated[9] as shown in Table 3.3.

Interjudge reliability was established for the test by the Kuder-Richardson formula #20 among four judges.[10] The reliability coefficients are reported in Table 3.4.

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[8]Margery M. Vaughn, "An Investigation of Relationships Among Musical Aptitude, Musical Creativity, and Figural Creativity," Unpublished Educational Report, University of Victoria, B.C. (1972), p. 4.

[9]Ibid.

[10]Ibid., p. 4.

TABLE 3.3.--Pearson r Between Vaughn Musical Creativity Test Factors

	fluency	rhythm	ideation	synthesis
fluency	1.00	.80	.80	.83
rhythm	.80	1.00	.74	.83
ideation	.86	.74	1.00	.93
synthesis	.83	.83	.93	1.00

TABLE 3.4.--K-R 20 Interjudge Reliability Among Four Judges

Items		Criteria	
I	.81	Fluency	.87
II	.78	Rhythm	.83
III	.87	Ideation	.87
IV	.84	Synthesis	.84
V	.88	Grand Total	.90

All of the data mentioned previously were gathered from 213 elementary school children in Victoria, British Columbia, Canada. A copy of the VTMC may be found in Appendix C.

For purposes of the present study, a different set of scoring criteria was developed and used with the VTMC. Dr. Vaughn designed the original scoring criteria to

measure elementary school children's creative musical behavior. Since the sample for the present study consisted of college-level students, it was necessary to devise scoring criteria that would provide an adequate measure of their creative musical skills. The adapted scoring criteria is criterion-referenced because it is derived from material presented in the Music 271 course textbook.[11] The adapted scoring criteria for the VTMC is located in Appendix C.

The VTMC was administered to each subject in the present study by the researcher during the final week of the experimental period. Each subject's responses were recorded on cassette tapes. These same tapes were later cast in random order, recorded on reel-to-reel tapes, and prepared for scoring. It was assumed that a taped random order of each subject's reponses, regardless of group membership (control or experimental), would eliminate the possibility of any bias in scoring the responses.

Two graduate assistants in the Music Education Department scored all responses made on the VTMC following the study. Both judges were trained in a special scoring session held by the researcher. In addition, the researcher prepared tape recordings of model creative performances based on each of the five VTMC test items.

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[11] Reed and Sidnell, The Materials of Music Composition.

Performances of each item were recorded from simple to difficult according to the VTMC rating scale from one to five. A total of 23 performances served as standards for grading each subject's responses. The taped responses of all subjects were scored individually by each judge.

Reliability of the VTMC with adapted scoring criteria was established using the Pearson Product Moment Correlation Coefficient between two judges. The reliability coefficient was r = .74 for the 31 subjects tested.

The reliability coefficients obtained on the three criterion instruments used in this study are consistent with those recommended by Guilford. He maintains that tests are reliable when they yield coefficient values of .70 to .98.[12]

Design

The basic research design of this study was the pretest-posttest control group design as described by Campbell and Stanley.[13] The paradigm for this design is shown below:

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[12]J. P. Guilford, Fundamental Statistics in Psychology and Education (New York: McGraw-Hill Book Co., 1964), p. 104.

[13]Donald T. Campbell and Julian C. Stanley, Experimental and Quasi-Experimental Designs for Research (Chicago: Rand McNally and Co., 1963), p.13.

R O X O

R O O

The pretest-posttest control group design is a true research design that provides for the control of eight factors known to jeopardize internal validity.[14] The main feature of an internally valid design is that it eliminates the question of whether or not the experimental treatment made a difference in the experimental situation. However, use of a research design that provides control only for sources of internal invalidity limits statistical inference to the experimental conditions associated with the design itself. Therefore, the results of this study apply only to the sample and experimental procedures involved in the present study.

Sectioning Procedure

The subjects were randomly assigned to two sections of the Music 271 course. Section I was designated as the control group, and Section II served as the experimental group. Both sections were taught alternately by a graduate assistant (T_1) in the Music Education Department and the researcher (T_2). T_1 conducted two different lectures each week on theoretical content from the course textbook for both experimental and control groups. Also each week both groups attended two lab sessions that

[14] Ibid., p. 8.

covered practical aspects of the course material taught by T_2. Lab sessions for the control group consisted of listening and performing activities, whereas the experimental group participated in a program centered around creative music learning experiences.

The sectioning procedure adopted for the present study was designed to provide control for differences between experimental and control group teachers. Such differences normally exist in most two-group research designs; therefore, it was assumed that differences between experimental and control teachers could be a possible source of variation and consequently, interfere with the true effect of the experimental treatment. The sectioning procedure for the experiment is presented in Table 3.5.

TABLE 3.5.--Sectioning Procedure for the Experiment

Weekday		Control Group	Experimental Group
Monday	T_2	Listening and Performing Activities	T_1 Lecture
Tuesday	T_2	Listening and Performing Activities	T_1 Lecture
Wednesday	T_1	Lecture	T_2 Creative Experiences
Thursday	T_1	Lecture	T_2 Creative Experiences

Treatment

Music 271 met four days per week at 3 p.m. Each class period was 50 minutes in length. During the Spring term, 1977 classes met for 10 weeks. Both control and experimental groups attended lectures held in the same room each day, and the same procedure took place at all lab sessions.

A wide variety of activities and experiences was presented in the lab sessions. The control group studied music through listening and performing activities which consisted of basic ear-training, sight-singing, and experiences at the piano keyboard. Lessons in ear-training were centered around the perception of rhythm patterns, intervals within the diatonic scale, and dictation of simple folk melodies. The sight-singing lessons consisted of reading rhythm patterns using syllables, and singing folk melodies according to note names and numbers. Keyboard experiences included the construction and playing of intervals and diatonic scales. The last two weeks in the term were spent mainly on adding simple chordal accompaniments to folk songs.

The experimental group studied music through activities that allowed the students freedom to create their own music. Students were able to create rhythms and melodies, using both unconventional and staff notation. Basic phrase structure and musical form were explored

along with improvisation. Before individual and group performances, the students were required to write their compositions on blackboards in notation so that all class members could read full scores as the different individuals and groups performed.

The experimental program began with application of improvisation and composition to the study of rhythm. Students later developed melodies and complete compositions, using the ostinato. Improvisation took place largely on rhythm and mallet instruments normally used in the general music program. These same instruments were used by the students in performing their written musical compositions.

All participants in the experimental group were required to write musical compositions, which were graded according to a rating scale. Use of the rating scale provided feedback for the students as they progressed with musical composition. The scoring criteria designed for the rating scale are consistent with the adapted scoring criteria developed for the VTMC. The musical composition rating scale appears in Appendix D.

All creative experiences designed for the experimental program were developed from the music 271 course textbook.[15] The program consists of 12 units of creative

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[15]Reed and Sidnell, The Materials of Music Composition.

experiences and assignments. Each unit contains behavioral objectives that describe specific learning behaviors expected after completion of each unit. Prior to its completion, the experimental program was developed and tested over a period of two years. The final form of the program resulted from a pilot study conducted during the term before the one in which the experiment was actually realized. The complete experimental program is shown in Appendix E.

Criteria for the musical creativity measurement devices and the experimental program were developed by the writer under the guidance of Dr. Robert Sidnell and Dr. Charles McDermid.

To insure effective teaching, daily instructional plans for experimental and control group activities were written. It was assumed that daily plans of teaching/ learning strategies would insure substantial learning gains. All strategies designed for both groups were planned according to the instructional sequence of the music 271 course textbook and the lectures. Daily instructional plans for experimental and control group activities are contained in Appendix F.

The Pilot Study

During the Winter term of 1977, a pilot study was conducted, using the same experimental research design

and procedures adopted for the present study. Purposes of the study were to: (1) prepare the lecturer (T_1) and researcher (T_2) in teaching effectively as a team; (2) further aid the researcher in guiding the creative experiences and conventional music activities designed for the experiment; (3) encourage observation of the participants as they responded to the experimental and conventional music programs and make any adjustments needed to improve the content of the programs; (4) refine all criteria established for the VTMC and musical composition rating scale; and (5) familiarize the researcher with the VTMC.

During the project, the lecturer and researcher became familiar with each other as teachers. As a result, problems with certain verbal concepts were cleared up and the subjects asked fewer questions about terminology.

Observations of the subjects as they responded to the creative experiences prompted the writer to change the number of behavioral objectives written for the program. Some of the objectives required more work than the students could complete in ten weeks. These objectives were either deleted from the program or revised to make them consistent with the Music 271 course content.

Upon completion of the experimental program, criteria for the VTMC and musical composition rating scale were revised. In this study the revised criteria for

measuring musical creativity contain the same terminology and music concepts used for the experimental treatment.

Likewise, the daily instructional plans for experimental and control group activities were revised to correspond with the experimental program.

At the end of the pilot study, the researcher administered the VTMC to the participating subjects (N = 33). After using the test, it was decided to change the fifth test item to encourage the use of several different sound sources, including vocal sounds. In addition, instructions for administering each musical example or test item were standardized. This process facilitated use of the test for the actual experiment.

All of the procedures carried out during the pilot study provided the researcher with the skills needed to conduct the present study. However, since some of the numerical data was unavailable after completion of the experiment, the results were not reported.

Testable Hypotheses

The present study was designed to test the following nondirectional hypotheses:

Hypothesis I: Students will perform differently on a criterion-referenced music achievement test according to grouping by instructional method.

Hypothesis II: Students will perform differently on a music learning attitude scale according to grouping by instructional method.

Hypothesis III: Students will perform differently on a test of musical creativity according to grouping by instructional method.

Analysis

Group means on each criterion measure employed in this study were used as units of observation. The achievement test and attitude scale were scored by Evaluation Services at Michigan State University. The scores, along with data from the musical creativity test, were then transferred to computer cards and prepared for statistical analyses.

The statistical tests used to analyze the data consisted of the t-test, Pearson Correlation, analysis of variance, and analysis of covariance. Two Statistical Package for the Social Sciences (SPSS) computer programs, written for analysis of variance and covariance,[16] were used to test the three hypotheses. The first two hypotheses were tested using two separate analyses of covariance. A one-way analysis of variance served as the statistical test for the third hypothesis. A significance level of .05 was chosen for acceptance or rejection of the three hypotheses.

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[16]Jae-On Kim and Frank J. Kohout, "Analysis of Variance and Covariance: Subprograms," in Statistical Package for the Social Sciences, ed: Norman H. Nie, et al. (New York: McGraw-Hill Book Co., 1975), pp. 398-433.

CHAPTER IV

PRESENTATION OF THE DATA

Review of Procedure

The purpose of this investigation was to determine if a method of instruction involving creative music learning experiences had an effect on musical growth. In the present study musical growth consisted of music achievement, music learning attitude, and creative musical skill.

Thirty-one students participated in the experiment during the Spring term of 1977 at Michigan State University. All students were administered two criterion measures at the beginning and end of a ten-week term. A third criterion measure was administered to the students only at the end of the term. The data collected from three tests: (1) Music Materials Achievement Test; (2) Music Learning Attitude Scale; and (3) the Vaughn Test of Musical Creativity were recorded on computer cards and prepared for statistical analyses through an IBM CDC 6500 computer at the Michigan State University Computer Center. Data were analyzed using two computer subprograms designed for the Statistical Package for the Social Sciences.

Table 4.1 shows descriptive data for both experimental and control groups on the criterion instruments used

TABLE 4.1.--Means and Standard Deviations for Experimental and Control Groups on all Measures

Group	MMAT				MLAS				VTMC	
	Pretest		Posttest		Pretest		Posttest		Posttest	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Experimental (N = 17)	24.75	5.75	42.25	5.51	145.65	20.56	146.18	20.34	73.29	8.69
Control (N = 14)	25.64	5.91	43.71	3.91	144.14	19.78	147.86	20.01	66.36	6.78

for the experiment. An estimation of the correlations among pretest and/or posttest measurements is revealed in Table 4.2.

Analyses of variance and covariance were the means of determining acceptance or rejection of the hypotheses. An analysis of variance was used to test one single posttest measurement. Pretest-posttest measurements were analyzed using analysis of covariance.

Analysis of Covariance

The analysis of covariance technique was used to determine the significance of differences between experimental and control groups on the following pretest-posttest measurements: (1) music achievement; and (2) music learning attitude. Pretest music achievement and pretest music learning attitude were considered as covariates. In addition, the analysis of covariance procedure was used to determine the extent of the influence of the covariates on the dependent variables (posttest achievement and attitude) before assessing the effect of the independent variable (treatment). Covariance analysis adjusts the posttest means of the two groups from the effects of the covariates to compensate for differences between groups found in the initial testing.[1] This statistical test is recommended by

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[1]Walter R. Borg, Educational Research: An Introduction (New York: David McKay Company, Inc., 1969), p. 143.

TABLE 4.2.--Correlation Matrix of Pretest and/or Posttest Measurements

		MMAT		MLAS		VTMC
		Pretest	Posttest	Pretest	Posttest	Posttest
MMAT	Pretest	1.0000				
	Posttest	.5265	1.0000			
MLAS	Pretest	.1751	.0558	1.0000		
	Posttest	.2938	.1472	.7808	1.0000	
VTMC	Posttest	.2025	.0392	.1257	.0574	1.0000

Campbell and Stanley for the experimental design used in the experiment.[2]

Hypotheses

This study tested three hypotheses which were stated in nondirectional form. The first two hypotheses were tested using two separate analyses of covariance. A one-way analysis of variance served as the statistical test for the third hypothesis.

Treatment is the only factor for the three hypotheses. It has two levels: (1) creative experiences; and (2) conventional music instruction. Posttest achievement and posttest attitude are the dependent variables for hypotheses one and two. Creative musical skill is the dependent variable for the third hypothesis.

The three hypotheses were tested as follows:

> Hypothesis I: Students will perform differently on a criterion-referenced music achievement test according to grouping by instructional method.

Since the F value is larger than the .05 level of confidence, hypothesis number one is rejected. There is no statistically significant difference between experimental and control groups in music achievement. The results are shown in Table 4.3.

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[2]Donald T. Campbell and Julian C. Stanley, Experimental and Quasi-Experimental Designs for Research (Chicago: Rand McNally and Co., 1963), p. 23.

TABLE 4.3.--Analysis of Covariance of Music Achievement by Method of Instruction

Source of Variation	SS	df	MS	F	P
Between Groups	8.217	1	8.217	.462	.502
Within Groups	497.625	28	17.772		
Total	505.842	29			

Hypothesis II: Students will perform differently on a music learning attitude scale according to grouping by instructional method.

Since the F value is larger than the .05 level of confidence, hypothesis number two is rejected. There is no statistically significant difference between experimental and control groups in music learning attitudes. The results appear in Table 4.4.

TABLE 4.4.--Analysis of Covariance of Music Learning Attitude by Method of Instruction

Source of Variation	SS	df	MS	F	P
Between Groups	62.639	1	62.639	.384	.540
Within Groups	4563.155	28	162.970		
Total	4625.794	29			

Hypothesis III: Students will perform differently on a test of musical creativity according to grouping by instructional method.

The F value is significant at .021 which is less than the .05 level of confidence. Hypothesis number three is accepted. There is a statistically significant difference between groups in creative musical skill at the .05 level. A comparison of experimental and control group means on the VTMC in Table 4.1 indicates a higher level of performance in creative musical skill by the experimental group. Results from an analysis of variance test of significance are shown in Table 4.5.

TABLE 4.5.--Analysis of Variance of Creative Musical Skill by Method of Instruction

Source of Variation	SS	df	MS	F	P
Between Groups	369.450	1	369.450	5.93	.021*
Within Groups	1806.744	29	62.302		
Total	2176.194	30			

*Significant at .05 level.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

This study investigated the effect of an orderly sequence of creative music learning experiences on the musical growth of college level nonmusic majors. For the present study, musical growth consisted of music achievement, music learning attitude, and creative musical skill, as defined in Chapter I.

It was hypothesized that students who were taught music through creative experiences would exhibit a different level of music achievement from that of students who were taught through conventional music instruction. It was further hypothesized that students who were taught music through creative experiences would differ in music learning attitudes from students who were taught by using conventional music instruction. Finally, it was hypothesized that students who were taught music through creative experiences would exhibit a different level of creative musical skill from that of students who were taught by using conventional music instruction.

A review of literature concerning creativity theories was divided into three categories. The first

category revealed two different descriptions of processes involved in creative thinking. They were: (1) six different creative thinking abilities identified as six measurable constructs of creative mental functioning; and (2) four separate stages of thinking or problem-solving situations that progress in a sequential pattern.

The second category cited the idea that classroom creative activities have the power to motivate students when the activities are carried out in a "free environment."

In the third category, information about the measurement and evaluation of creative behavior was presented. This category revealed certain reliability and validity problems commonly associated with creativity tests.

Also included in the literature review were three related studies in which the influence of music study on creative thinking and/or relationships between creative thinking, music aptitude, and music achievement were investigated. One study revealed positive results, and a second study showed negative results regarding the influence of music study on creative thinking. Two studies also showed conflicting results concerning relationships between creative thinking, musical aptitude, and music achievement. Two additional related studies described the construction of two different musical

creativity tests. In these studies, both researchers conducted reliability and validity studies on their tests.

Finally, five relevant studies that showed some similarities to the present research were reviewed. Results from these studies showed that creative musical activities had positive effects on musicality, music achievement, musical creativity, and attitudes. Since most of the aforementioned studies were contaminated with problems of internal validity, it is difficult to accept the conclusions drawn from the data.

For the present research, two randomized groups of nonmusic majors participated in the study. Students in the experimental group (N = 17) studied music through creative music learning experiences that included musical composition and improvisation. All students participated in group performances of their musical compositions and improvised individually as well as in groups. The control group students (N = 14) were taught music by a conventional teaching method in the form of musical activities. All activities used in both experimental and control groups were taught and/or guided by the researcher. In addition, experimental and control group students were taught music fundamentals through a series of lectures by a second teacher. The presence or absence of creative experiences was the only difference between the groups.

All students were tested at the beginning and end of a ten-week period. The criterion measures were:

1. a criterion-referenced music achievement test;
2. A music learning attitude scale;
3. the Vaughn Test of Musical Creativity.

The achievement test and music learning attitude scale were both used as pretests and posttests, whereas the musical creativity test served only as a posttest. Three hypotheses were tested, using two separate analyses of covariance and a one-way analysis of variance. Results from the three nondirectional hypotheses were as follows:

> Hypothesis I: Students will perform differently on a criterion-referenced music achievement test according to grouping by instructional method.

This hypothesis was rejected.

> Hypothesis II: Students will perform differently on a music learning attitude scale according to grouping by instructional method.

This hypothesis was also rejected.

> Hypothesis III: Students will perform differently on a test of musical creativity according to grouping by instructional method.

Hypothesis III was accepted.

Discussion

The findings of this study were different from results found in most of the studies reviewed. Differences in results between this research and other studies were found in the areas of music achievement and attitude.

On the other hand, findings from the present study regarding creative musical skill were in accord with research of a similar nature.

The effect of creative experiences on the music achievement of nonmusic majors, in comparison with a conventional method, revealed no statistically significant difference. This finding is different from the results of three studies presented in the literature review. The fact that no difference was found between the two methods indicates that creative experiences did not have a positive effect on music achievement, as compared with a conventional method of instruction. In all probability the students in both groups learned more in the area of music achievement from the lectures. Since the achievement test measured knowledge of material contained in the course textbook, the lectures conducted by a second teacher were equally effective for both groups. In addition, the lectures served as an excellent control that eliminated the possibility of any bias on the part of the experimenter.

The use of creative experiences in the classroom had no effect on music learning attitudes in this study. The results showed no statistically significant difference between experimental and control groups. This finding is different from the results obtained in two studies reviewed. Evidence from the present research indicates

that students' attitudes, which took years to form, cannot be changed during a ten-week college level music fundamentals course.

Relating to musical creativity, the finding of this study is consistent with that of similar research. A statistically significant difference in creative musical skill was found at the .05 level of confidence between the experimental and control treatments. For the present research, creative experiences used in the music classroom did have a positive effect on the development of musical creativity, as compared with a conventional method of instruction. Although the present experiment cannot be compared directly with other research, the similarity between the findings of this and other research shows that musical creativity can be guided.

As with any research endeavor, there were problems encountered. First, the Music Learning Attitude Scale (MLAS) developed for this study consisted of items taken from three different sources, as stated in Chapter III. Ten items were chosen from Mehling's Music Attitude Scale and Musical Needs Profile; in addition, the researcher wrote five items pertaining to music study, resulting in one scale that contained 15 items. Later, a 25 item Musical Habits Survey written by Wifler was added to the aforementioned 15 item scale. Therefore, the MLAS

actually consisted of two different attitude scales. In order to determine whether the two scales measured similar behaviors, a Pearson Product Moment Correlation was computed between the two scales. The computation revealed a correlation coefficient of r = .27. This coefficient value indicates that the two different parts of the MLAS measured unrelated sets of affective behaviors. Although the MLAS proved to be a reliable and valid instrument in this research, a factor analysis revealed a wide spread in loadings; hence, the MLAS may have been too diffuse to measure the music learning attitude variable as conceived for the present study.

On the other hand, a paper-and-pencil or verbal attitude scale could have been a limited measure of attitudes toward music learning. During the experiment, most of the participants in the experimental group often showed positive non-verbal attitudes when they worked together in groups to create music. It is quite possible that a behavioral attitude measure may have shown results different from those obtained with the MLAS.

A second problem was in the scoring of the Vaughn Test of Musical Creativity (VTMC). As stated in Chapter III, the researcher held one scoring session for training the two judges who scored the VTMC. A Pearson Product Moment Coefficient of Correlation was computed between the two judges. The interjudge reliability coefficient was

r = .74. This moderate reliability coefficient suggests that the two judges were not always consistent with each other in scoring the samples' responses. A second training session probably would have reduced the amount of inconsistency in scoring between the two judges.

Third, the lecturer (T_1) and researcher (T_2) obviously approached teaching differently in the experiment. As a result, two students from the experimental group and one from the control group expressed states of confusion concerning certain musical facts. These states of confusion were resolved on several occasions by the researcher, but problems did result from two different explanations by the two teachers. Since the achievement scores, however, revealed more variation within groups than between groups, the problem of different teaching approaches had no effect on the results of this research.

Conclusions

The conclusions drawn from this study apply only to the sample from which the data were drawn; therefore, that which is true for these nonmusic majors cannot necessarily be assumed to be true for all university nonmusic majors. Based upon an analysis of the outcomes of this investigation, however, the following conclusions can be admitted:

1. When using creative music learning experiences in elective music fundamentals classes at the university level, the experiences have no observable effect on music achievement.

2. When using creative music learning experiences in elective music fundamentals classes at the university level, the experiences have no observable effect on attitudes toward music learning.

3. When using creative music learning experiences in elective music fundamentals classes at the university level, an increase in creative musical skill is possible.

Recommendations for Further Research

The findings from this study suggest the following recommendations:

1. More studies are needed to explore different ways in which college nonmusic majors learn music through fundamentals classes.

2. An extensive interjudge reliability study of the Vaughn Test of Musical Creativity, using the scoring criteria adopted for the present research, is needed.

3. Similar research using behavioral attitude measures (checklists, photographs, videotape, and other unobtrusive records) should be carried out. In this kind of research, attitudes might be assessed with verbal and behavioral attitude measures.

4. A study of musical creativity among grownups in high school education classes would be of interest.

5. Similar studies should be conducted in junior high school general music classes and/or high school music theory classes to determine whether effects noted herein will similarly appear.

Finally, the conclusions of this study indicate that creative musical skill in the form of improvisation possibly can be altered through training; therefore, college level nonmusic majors who study music fundamentals through creative music experiences can create and improvise music at an acceptable level of performance.

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APPENDICES

APPENDIX A

MUSIC MATERIALS ACHIEVEMENT TEST

AND

ITEM STATISTICS

MUSIC 271 - PRETEST

1. Which of the following is not a vibrating device that produces sound?

    a) strings
    b) vocal cords
    c) paper
    d) reeds
    e) columns of air

2. All of the following are characteristics of tone except:

    a) pitch
    b) amplitude
    c) timbre
    d) duration
    e) intensity

3. The pitch of a tone is determined by:

    a) intensity
    b) timbre
    c) hertz
    d) amplitude
    e) duration

4. The difference in the sound of a trumpet and a violin playing the same pitch is due in part to its:

    a) timbre
    b) hertz
    c) intensity
    d) decibel

5. The loudness of sound is measured in:

    a) hertz
    b) harmonics
    c) amplitude
    d) timbre
    e) decibels

6. The pace at which music moves is:

    a) motion
    b) tempo
    c) duration
    d) meter
    e) rhythm

7. The basic temporal element in music is:

    a) pulse
    b) pattern
    c) rhythm
    d) meter
    e) scale

8. A device which provides performers with an exactness of tempo is called a:

    a) sarrusaphone
    b) meter signature
    c) clef
    d) metronome
    e) modulator

9. The grouping of pulses is called:

    a) tempo
    b) motion
    c) meter
    d) rhythm
    e) unit

10. To yield a sound of greater duration, any two notes representing the same pitch can be joined together by a:

    a) plus sign
    b) bar line
    c) slur
    d) tie
    e) accent

11. A dot placed immediately after a note means that its durational value equals that of the original note plus:

    a) 2/3
    b) 
    c) 3/4
    d) 1/2
    e) 1/4

12. If  has a value of 1 pulse, then  has a value of:

    a) 4/3
    b) 2
    c) 1/2
    d) 3
    e) 4

13. If  has a value of 2 pulses, then has a value of:

    a) 1
    b) 4
    c) 1 1/2
    d) 1/2
    e) none of these

14. If  has a value of 1/2 pulse, then has a value of:

    a) 2
    b) 3 1/2
    c) 4
    d) 2 1/4
    e) 3

15. If  has a value of 1 pulse, then  has a value of:

    a) 3/8
    b) 5/16
    c) 2
    d) 1/4
    e) 1/2

16. If  receives 1 pulse, then  receives which of the following pulse(s):

    a) 3
    b) 5/16
    c) 3/8
    d) 2
    e) 1

17. If receives 2 pulses, then  receives which of the following pulse(s):

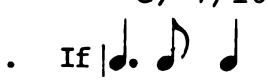
    a) 4/2
    b) 6/2
    c) 5
    d) 3
    e) 2 1/2

18. If  receives 1 pulse, then  receives which of the following pulse(s):

    a) 3/2
    b) 3
    c) 6/4
    d) 5
    e) 3 1/2

19. If  , then the most likely measure signature is:

    a) 5/8
    b) 3/4
    c) 2/2
    d) 3/2
    e) 7/16

20. If  , then the most likely measure signature is:

    a) 7/8
    b) 5/4
    c) 3/2
    d) 4/1
    e) 6/8

21. The treble clef locates a pitch:

    a) F
    b) C
    c) A
    d) G
    e) D

22. The bass clef locates a pitch:

    a) F
    b) C
    c) A
    d) G
    e) D

23. Lines added above and below the staff are called:

    a) dotted lines
    b) octave lines
    c) clef lines
    d) ledger lines
    e) accidental lines

24. Symbols that alter the pitch of a given note are:

    a) harmonics
    b) breves
    c) accidentals
    d) dots
    e) ties

25. Two notes that have the same sound but different pitch names are called:

    a) harmonics
    b) fundamental
    c) chromatic
    d) enharmonic
    e) diatonic

26. The double flat lowers a tone:

    a) 1 step
    b) 2 steps
    c) 1 1/2 steps
    d) 1/2 step
    e) 3 steps

27. The distance between two notes is defined as an:

    a) octave
    b) whole step
    c) flat
    d) interval
    e) equivalent

28. Equal temperament tuning divides the octave into:

    a) 6 parts
    b) 4 parts
    c) 8 parts
    d) 10 parts
    e) 12 parts

29. An octave is an interval that has a ratio of vibrations of:

    a) 3:2
    b) 2:3
    c) 2:1
    d) 4:3
    e) 3:4

30. The symbol that raises the pitch of a note a half step is a:

    a) flat
    b) accidental
    c) sharp
    d) natural
    e) dot

31. The smallest pitch distance used in Western music is the:

    a) whole step
    b) half step
    c) minor step
    d) major step
    e) polytone

32. The alto clef indicates a pitch:

    a) C
    b) G
    c) F
    d) A
    e) D

33. Intervals designated as primes, fourths, fifths, and octaves are called:

    a) minor
    b) perfect
    c) major
    d) nice
    e) enharmonic

34. A major interval decreased in size by a half step becomes:

    a) perfect
    b) augmented
    c) minor
    d) diminished
    e) imperfect

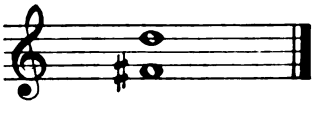
35. When a minor third is inverted it becomes a:

    a) major third
    b) minor sixth
    c) perfect fourth
    d) major sixth
    e) minor second

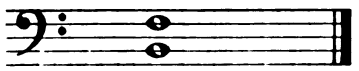
36. The major second when inverted becomes a:

    a) major third
    b) minor sixth
    c) minor second
    d) major seventh
    e) minor seventh

37. The interval below is a: a) m6 b) M6 c) d6 d) M7 e) m7



38. The interval below is a: a) M5 b) P5 c) d5
d) A5 e) m5



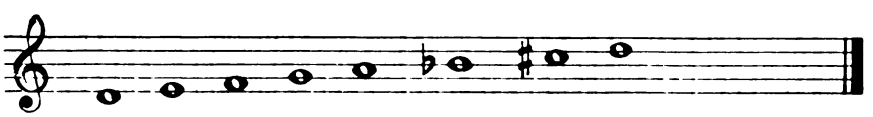
39. A succession of eight different notes within the octave separated by either whole or half steps is called a:

a) harmonic scale
b) diatonic scale
c) chromatic scale
d) whole tone scale
e) equal scale

40. Four consecutive tones are described as a:

a) hexachord
b) pentachord
c) trichord
d) tetrachord
e) harpsichord

41. The scale below is: a) major b) natural minor
c) melodic minor d) harmonic minor
e) chromatic



42. The A Major scale has 3 sharps: F$^{\#}$, C$^{\#}$, and:

a) D$^{\#}$
b) G$^{\#}$
c) B$^{\#}$
d) A
e) A$^{\#}$

43. The c minor scale in natural (aeolian) form has 3 flats: B^{b}, E^{b}, and:

a) A^{b}
b) G^{b}
c) D^{b}
d) F^{b}
e) C^{b}

44. The parallel minor to A Major is:

a) g minor
b) a minor
c) a minor
d) e $^{\#}$minor
e) f $^{\#}$minor

45. The relative major to g minor is:

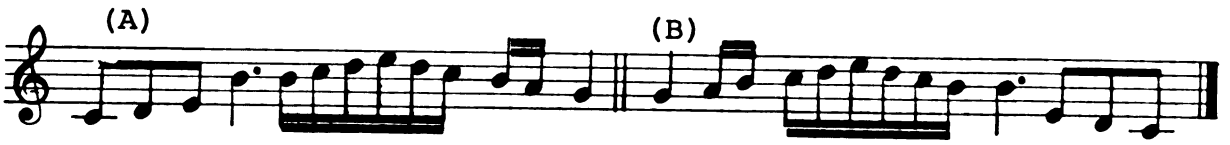
a) B^{b}_{b} Major
b) E^{b} Major
c) G Major
d) B_{b} Major
e) A^{b} Major

46. The musical parameter created by a balance between unity and contrast is:

a) rhythm
b) melody
c) contrast
d) harmony
e) form

47.  means to gradually get:

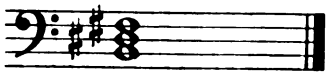
a) slower
b) higher
c) softer
d) louder
e) faster

48. 

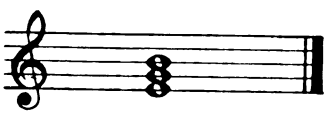
In the example above, measure (B) is the _____ of measure (A):

a) inversion
b) retrograde
c) augmentation
d) diminution
e) repetition

49. The triad below is: a) Major b) minor c) augmented d) diminished e) chromatic



50. The triad below is: a) Major b) minor c) augmented d) diminished e) chromatic



MUSIC 271 - FINAL EXAMINATION

1. All of the following are characteristics of tone except:

    a) pitch
    b) amplitude
    c) timbre
    d) duration
    e) intensity

2. The pitch of a tone is determined by:

    a) intensity
    b) timbre
    c) hertz
    d) amplitude
    e) duration

3. The difference in the sound of a trumpet and a violin playing the same pitch is due in part to its:

    a) timbre
    b) hertz
    c) intensity
    d) decibel

4. The loudness of sound is measured in:

    a) hertz
    b) harmonics
    c) amplitude
    d) timbre
    e) decibels

5. Which of the following is not a vibrating device that produces sound?

    a) strings
    b) vocal cords
    c) paper
    d) reeds
    e) columns of air

6. The pace at which music moves is:

    a) motion
    b) tempo
    c) duration
    d) meter
    e) rhythm

7. The basic temporal element in music is:

    a) pulse
    b) pattern
    c) rhythm
    d) meter
    e) scale

8. A device which provides performers with an exactness of tempo is called a:

    a) sarrusaphone
    b) meter signature
    c) clef
    d) metronome
    e) modulator

9. The grouping of pulses is called:

    a) tempo
    b) motion
    c) meter
    d) rhythm
    e) unit

10. To yield a sound of greater duration, any two notes representing the same pitch can be joined together by a:

    a) plus sign
    b) bar line
    c) slur
    d) tie
    e) accent

11. A dot placed immediately after a note means that its durational value equals that of the original note plus:

    a) 2/3
    b) 
    c) 3/4
    d) 1/2
    e) 1/4

12. If  has a value of one pulse, then  has a value of:

    a) 4/3
    b) 2
    c) 1/2
    d) 3
    e) 4

13. If  has a value of two pulses, then  has a value of:

    a) 1
    b) 4
    c) 1 1/2
    d) 1/2
    e) none of these

14. If has a value of 1/2 pulse, then  has a value of:

    a) 2
    b) 3 1/2
    c) 4
    d) 2 1/4
    e) 3

15. If has a value of one pulse, then has a value of:

    a) 3/8
    b) 5/16
    c) 2
    d) 1/4
    e) 1/2

16. If  receives one pulse, then  receives which of the following pulse(s):

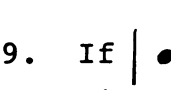
a) 3
b) 5/16
c) 3/8
d) 2
e) 1

17. If receives two pulses, then receives which of the following pulse(s):

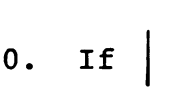
a) 4/2
b) 6/2
c) 5
d) 3
e) 2 1/2

18. If receives one pulse, then receives which of the following pulse(s):

a) 3/2
b) 3
c) 6/4
d) 5
e) 3 1/2

19. If  then the most likely measure signature is:

a) 5/8
b) 3/4
c) 2/2
d) 3/2
e) 7/16

20. If  then the most likely measure signature is:

a) 7/8
b) 5/4
c) 3/2
d) 4/1
e) 6/8

21. The treble clef locates a pitch:

a) F
b) C
c) A
d) G
e) D

22. The bass clef locates a pitch:

a) F
b) C
c) A
d) G
e) D

23. Lines added above and below the staff are called:

a) dotted lines
b) octave lines
c) clef lines
d) ledger lines
e) accidental lines

24. Symbols that alter the pitch of a given note are:

a) harmonics
b) breves
c) accidentals
d) dots
e) ties

25. Two notes that have the same sound but different pitch names are called:

a) harmonics
b) fundamental
c) chromatic
d) enharmonic
e) diatonic

26. The double flat lowers a tone:

a) one step
b) two steps
c) 1 1/2 steps
d) 1/2 step
e) three steps

27. The distance between two notes is defined as an:

a) octave
b) whole step
c) flat
d) interval
e) equivalent

28. Equal temperament tuning divides the octave into:

a) six parts
b) four parts
c) eight parts
d) ten parts
e) twelve parts

29. An octave is an interval that has a ratio of vibrations of:

a) 3:2
b) 2:3
c) 2:1
d) 4:3
e) 3:4

30. The symbol that raises the pitch of a note a half step is a:

a) flat
b) accidental
c) sharp
d) natural
e) dot

31. The smallest pitch distance used in Western music is the:

a) whole step
b) half step
c) minor step
d) major step
e) polytone

32. The alto clef indicates a pitch:

a) C
b) G
c) F
d) A
e) D

33. Intervals designated as primes, fourths, fifths, and octaves are called:

    a) minor
    b) perfect
    c) major
    d) nice
    e) enharmonic

34. A major interval decreased in size by a half step becomes:

    a) perfect
    b) augmented
    c) minor
    d) diminished
    e) imperfect

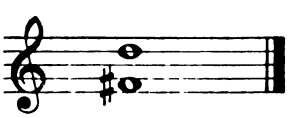
35. When a minor third is inverted it becomes a:

    a) major third
    b) minor sixth
    c) perfect fourth
    d) major sixth
    e) minor second

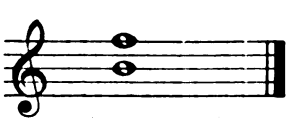
36. The major second when inverted becomes a:

    a) major third
    b) minor sixth
    c) minor second
    d) major seventh
    e) minor seventh

37. The interval below is a: a) M6 c) d6 d) M7 e) m7



38. The interval below is a: a) M5 b) P5 c) d5 d) A5 e) m5



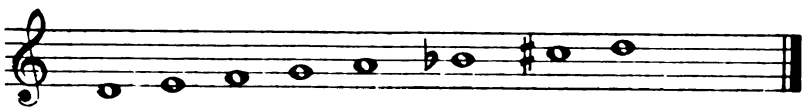
39. A succession of eight different notes with the octave separated by either whole or half steps is called a:

a) harmonic scale
b) diatonic scale
c) chromatic scale
d) whole tone scale
e) equal scale

40. Four consecutive tones are described as a:

a) hexachord
b) pentachord
c) trichord
d) tetrachord
e) harpsichord

41. The scale below is: a) major b) natural minor c) melodic minor d) harmonic minor e) chromatic



42. The A Major scale has three sharps: $F^{\#}$, $C^{\#}$, and:

a) $D^{\#}$
b) $G^{\#}$
c) $B^{\#}$
d) $A_{\#}$
e) $A^{\#}$

43. The c minor scale in natural (aeolian) form has three flats: B^{b}, E^{b}, and:

a) A^{b}
b) G^{b}
c) D^{b}
d) F^{b}
e) C^{b}

44. The parallel minor to A Major is:

a) g minor
b) a minor
c) b minor
d) e minor
e) F# minor

45. The relative major to g minor is:

a) B♭ Major
b) E♭ Major
c) G Major
d) B Major
e) A♭ Major

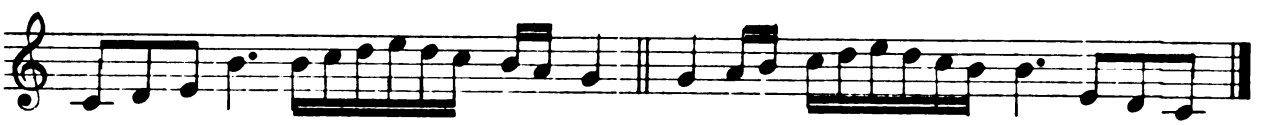
46. The musical parameter created by a balance between unity and contrast is:

a) rhythm
b) melody
c) contrast
d) harmony
e) form

47.  means to gradually get:

a) slower
b) higher
c) softer
d) louder
e) faster

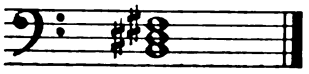
48. (A) (B)



In the example above, measure (B) is the _____ of measure (A):

a) inversion
b) retrograde
c) augmentation
d) diminution
e) repetition

49. The triad below is: a) Major b) minor
c) augmented d) diminished e) chromatic



50. The triad below is: a) Major b) minor
c) augmented d) diminished e) chromatic

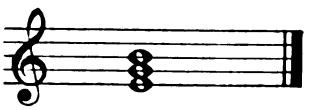


TABLE A-1.--Item Analysis: Post-Music Materials Achievement Test (N = 31)

Item No.	Index of Difficulty*	Index of Discrimination**	Biserial Correlation	Point Biserial Correlation	Mean Score Rights	Mean Score Wrongs
1	52	25	.2186	.1768	43.50	41.76
2	27	50	.6402	.4919	44.08	38.66
3	9	37	.8581	.5334	43.43	34.33
4	12	37	.6149	.4056	43.34	37.25
5	0	0	Undefined	Undefined	42.60	Undefined
6	0	0	Undefined	Undefined	42.60	Undefined
7	9	0	-.1445	-.0898	42.46	44.00
8	3	12	.3259	.1660	42.75	38.00
9	39	25	.2975	.2387	43.54	41.15
10	12	50	.8446	.5570	43.62	35.25
11	0	0	Undefined	Undefined	42.60	Undefined
12	0	0	Undefined	Undefined	42.60	Undefined
13	9	25	.3394	.2110	42.93	39.33
14	0	0	Undefined	Undefined	42.60	Undefined
15	3	12	1.0335	.5265	43.06	28.00
16	6	25	.7816	.4457	43.16	34.00
17	15	13	.5516	.3739	43.39	38.19
18	6	25	.7362	.4198	43.12	34.50
19	18	37	.4633	.3306	43.37	39.16
20	12	25	.4427	.2920	43.13	38.75
21	12	37	.6436	.4245	43.37	37.00
22	3	12	.6797	.3462	42.90	33.00
23	9	12	.2011	.1250	42.79	40.66
24	0	0	Undefined	Undefined	42.60	Undefined
25	6	25	1.0087	.5752	43.32	31.50
26	3	0	.0428	.0218	42.62	42.00

TABLE A-1.--Continued

Item No.	Index of Difficulty*	Index of Discrimination**	Biserial Correlation	Point Biserial Correlation	Mean Score Rights	Mean Score Wrongs
27	12	37	.5862	.3866	43.31	37.50
28	21	0	.0872	.0641	42.76	42.00
29	15	37	.6768	.4658	43.57	37.19
30	6	0	.0096	.0054	42.61	42.50
31	9	12	.4086	.2540	43.00	38.66
32	12	50	1.0455	.6896	43.86	33.50
33	0	0	Undefined	Undefined	42.60	Undefined
34	12	12	-.0165	-.0109	42.58	42.75
35	6	0	.0550	.0313	42.64	42.00
36	3	0	.0428	.0218	42.62	42.00
37	12	50	.9881	.6517	43.79	34.00
38	45	75	.7370	.5968	45.27	39.39
39	6	12	.2366	.1349	42.77	40.00
40	0	0	Undefined	Undefined	42.60	Undefined
41	36	62	.4551	.3631	43.95	40.25
42	9	37	.8581	.5334	43.43	34.33
43	12	37	.8446	.5570	43.62	35.25
44	21	38	.3338	.2455	43.23	40.28
45	42	88	.8126	.6562	45.36	38.85
46	88	-25	-.2867	-.1784	40.25	42.93
47	6	12	.2366	.1349	42.77	40.00
48	15	50	.9772	.6726	44.00	34.79
49	48	87	.7884	.6391	45.64	39.37
50	33	75	.7925	.6248	44.77	38.27

*The percent of the total group marking a wrong answer or omitting the item.

**The difference between the percent of the upper group's (27%) right answers and the percent of the lower group's (27%) right answers.

TABLE A-2.--Summary: Difficulty and Discrimination Indices; Post-Music Materials Achievement Test

Distribution of Item Difficulty Indices			Distribution of Item Discrimination Indices		
	No. of Items	%		No. of Items	%
91-100		0	91-10		0
81-90	1	2	81-90	2	4
71-80		0	71-80	2	4
61-70		0	61-70	1	2
51-60	1	2	51-60		0
41-50	3	6	41-50	5	10
31-40	3	6	31-40	9	18
21-30	3	6	21-30	7	14
11-20	13	26	11-20	9	18
00-10	26	52	00-10	14	28
			Less than 00	1	2

TABLE A-3.--Means, Error of Measurement and Reliability Post-Music Materials Achievement Test

Mean Item Difficulty	15
Mean Item Discrimination	24
Kuder Richardson Reliability #20	.8210
Standard Error of Measurement	2.1063

TABLE A-4.--Raw Score Distributions; Post-Music Materials Achievement Test (I = 50, N = 31)*

Raw Score	Frequency	Cumulative Frequency	Percentile Rank	Standard Score
48	6	6	90	60.8
47	2	8	78	58.8
46	5	13	68	56.8
44	3	16	56	52.8
43	2	18	48	50.8
42	5	23	36	48.7
41	1	24	25	46.7
40	1	25	22	44.7
38	2	27	18	40.7
36	1	28	13	36.7
35	2	30	9	34.7
28	1	31	1	20.6

*I = Items, N = Number of subjects

TABLE A-5.--Summary: Raw Score Distributions; Post-Music Materials Achievement Test

Mean	Raw Score S. D.	Variance	Standard Score	
			Mean	S. D.
42.60	4.98	24.87	50	10

APPENDIX B

MUSIC LEARNING ATTITUDE SCALE

MUSIC 271 - SURVEY

The following statements are about music learning. In response to each item, choose the alternative that best applies to you and your opinion and record the corresponding number on your answer sheet.

1. The most important function of music is self-expression.

    1. Strongly disagree
    2. Disagree
    3. Undecided or neutral
    4. Agree
    5. Strongly agree

2. How often do you read about music or musicians?

    1. Never
    2. Seldom
    3. Occasionally
    4. Frequently
    5. Very frequently

3. How often do you listen to music critically or seriously as opposed to using it for "background"?

    1. Never
    2. Seldom
    3. Occasionally
    4. Frequently
    5. Very frequently

4. A person ought to be able to appreciate equally all kinds of music.

    1. Strongly disagree
    2. Disagree
    3. Undecided or neutral
    4. Agree
    5. Strongly agree

5. How often do you discuss music with other people?

    1. Never
    2. Seldom
    3. Occasionally
    4. Frequently
    5. Very frequently

6. Do you intend to enroll in a music class while in college?

    1. No
    2. Probably not
    3. I am not sure
    4. Probably
    5. Yes

7. I do not need music at all in my life.

    1. Strongly agree
    2. Agree
    3. Undecided or neutral
    4. Disagree
    5. Strongly disagree

8. Do you sing or whistle when you are alone, either working or relaxing?

    1. No
    2. Yes, but seldom
    3. Yes, occasionally
    4. Yes, frequently
    5. Yes, very frequently

9. Do you ever play a musical instrument for your own entertainment?

    1. No
    2. Yes, but seldom
    3. Yes, occasionally
    4. Yes, frequently
    5. Yes, very frequently

10. I believe that it is not worth spending my time learning music as I get such little pleasure from it.

    1. Strongly agree
    2. Agree
    3. Undecided or neutral
    4. Disagree
    5. Strongly disagree

11. Do you perform with any musical organization? (i.e., church choir, university band, folk or rock group, etc.)

    1. No
    2. Yes, but seldom
    3. Yes, occasionally
    4. Yes, regularly
    5. Yes, more than one

12. American music, both past and present, should be the core of a music course.

    1. Strongly agree
    2. Agree
    3. Undecided or neutral
    4. Disagree
    5. Strongly disagree

13. Do you subscribe to any music periodicals?

    1. No
    2. No, but I would like to
    3. No, but I intend to
    4. Yes
    5. Yes, more than one

14. How often do you borrow records from a library or a friend?

    1. Never
    2. Seldom
    3. Occasionally
    4. Frequently
    5. Very frequently

15. Music courses should emphasize only one type of music, having this taught in great depth.

    1. Strongly agree
    2. Agree
    3. Undecided or neutral
    4. Disagree
    5. Strongly disagree

16. How often do you attend concerts?

    1. Never
    2. Seldom
    3. Occasionally
    4. Frequently
    5. Very frequently

17. How often do you initiate music activities?

    1. Never
    2. Seldom
    3. Occasionally
    4. Frequently
    5. Very frequently

18. Music courses should concentrate on the emotional and aesthetic values of all types of music.

    1. Strongly disagree
    2. Disagree
    3. Undecided or neutral
    4. Agree
    5. Strongly agree

19. Do you use music on the radio or recordings as a background to working?

    1. Never
    2. Yes, but seldom
    3. Yes, occasionally
    4. Yes, frequently
    5. Yes, very frequently

20. Discrimination between good and bad compositional characteristics of all types of music should be taught.

    1. Strongly disagree
    2. Disagree
    3. Undecided or neutral
    4. Agree
    5. Strongly agree

21. How many instruments can you play, even a little?

    1. None
    2. One
    3. Two
    4. Three
    5. Four or more

22. Music courses should focus on western art music.

    1. Strongly agree
    2. Agree
    3. Undecided or neutral
    4. Disagree
    5. Strongly disagree

23. Do you ever make up melodies to play or sing?

    1. Never
    2. Yes, but seldom
    3. Yes, occasionally
    4. Yes, frequently
    5. Yes, very frequently

24. If afforded the opportunity, I would enroll in a music course that emphasizes music learning through creative (includes listening and performing) experiences.

    1. Strongly disagree
    2. Disagree
    3. Undecided or neutral
    4. Agree
    5. Strongly agree

25. Do you ever experiment with instruments which you have not studied seriously?

    1. Never
    2. Yes, but seldom
    3. Yes, occasionally
    4. Yes, frequently
    5. Yes, very frequently

26. Music courses using the activities (informal performances) approach provides the most effective learning experiences.

    1. Strongly disagree
    2. Disagree
    3. Undecided or neutral
    4. Agree
    5. Strongly agree

27. How frequently do you buy records or tapes?

1. Never
2. Seldom
3. Occasionally
4. Frequently
5. Very frequently

28. How often do you watch/listen to concerts on TV?

1. Never
2. Seldom
3. Occasionally
4. Frequently
5. Very frequently

29. Music courses using the lecture approach provide the most effective learning experiences.

1. Strongly agree
2. Agree
3. Undecided or neutral
4. Disagree
5. Strongly disagree

30. Do you seek out music that you are unfamiliar with?

1. Never
2. Yes, but seldom
3. Yes, occasionally
4. Yes, frequently
5. Yes, very frequently

31. Do you seek out friends who are interested in music?

1. No
2. Yes, but seldom
3. Yes, occasionally
4. Yes, frequently
5. Yes, very frequently

32. Music courses should be taught for the purpose of musical enjoyment.

1. Strongly disagree
2. Disagree
3. Undecided or neutral
4. Agree
5. Strongly agree

33. When you listen to music, do you respond feelingfully or emotionally?

    1. Never
    2. Yes, but seldom
    3. Yes, occasionally
    4. Yes, frequently
    5. Yes, usually

34. Are you learning, either on your own or with the help of a teacher, how to play an instrument or sing, or to improve your present ability?

    1. No
    2. No, but I would like to
    3. No, but I intend to
    4. No, but I have made arrangements to do so
    5. Yes

35. If afforded the opportunity, I would enroll in a music course that emphasizes music learning through listening and performing experiences.

    1. Strongly disagree
    2. Disagree
    3. Undecided or neutral
    4. Agree
    5. Strongly agree

36. Do you intend, in the future, to learn about "classical music"?

    1. No
    2. Probably not
    3. I am not sure
    4. Probably
    5. Yes

37. Do you intend, in the future, to learn about music structure or theory?

    1. No
    2. Probably not
    3. I am not sure
    4. Probably
    5. Yes

38. Music courses should be made available for students with little or no musical background.

    1. Strongly disagree
    2. Disagree
    3. Undecided or neutral
    4. Agree
    5. Strongly agree

39. How often do you get together with friends to sing or play instruments?

    1. Never
    2. Seldom
    3. Occasionally
    4. Frequently
    5. Very frequently

40. How often do you get together with friends to listen to music?

    1. Never
    2. Seldom
    3. Occasionally
    4. Frequently
    5. Very frequently

APPENDIX C

VAUGHN TEST OF MUSICAL CREATIVITY

AND

ADAPTED SCORING CRITERIA FOR VTMC

VAUGHN TEST OF MUSICAL CREATIVITY

Test instructions for research purposes only;
not for unauthorized distribution.

I. Introduction

The following explanations have reference to the video tape of the test, but do not as yet constitute a Test Manual proper. The theoretical constructs on which the test is based are set out elsewhere.

Test climate. The psychological climate should be relaxed and informal. The tester should try to be supportive without actually introducing any value judgements--a characteristic not always displayed on the tape. He should try also to move smoothly from one item to the next, so that the testee does not have much time in which to indulge his self consciousness.

There is sometimes some difficulty in the use of even such common musical terms as "beat," and the tester should be prepared to rephrase his instructions if he feels they are not clearly understood the first time. Motivational terms such as "interesting" are also important. Torrance, whose figural tests of creativity acted as something of a model in the present instance, tells his testees to "think of a picture no one else will think of," make "as interesting a story as you can," and so on. (It might be noted that the music test has been used to good effect with children as young as seven, on the one hand, and with adults, on the other.)

II. The Test

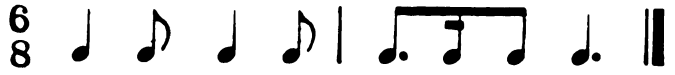
Items testing creative behaviour are customarily one of two types; either there is a stem or antecedent presented, to which the testee responds with a consequent, or there is a basic outline or ground to which the testee adds a simultaneous and complementary pattern. The following items conform to one or the other of those two.

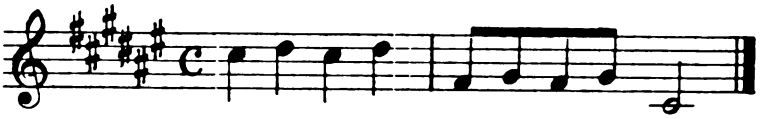
Equipment required.

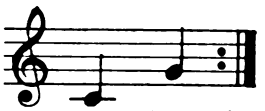
2 wood blocks
2 sets of song bells
2 small drums
4 beaters
2-4 additional small percussion instruments,
e.g. cymbal, tambourine
tape recorder

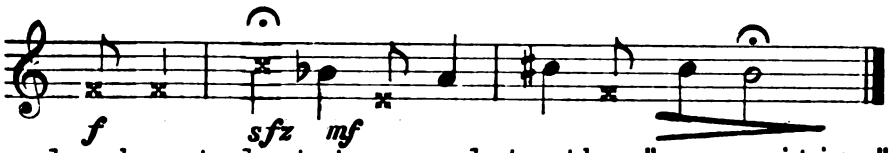
Test items.

1. Tester establishes steady beat on wood block and asks student to make up rhythm pattern to go along with it. (In this item and in item 4, the tester will have to exercise his subjective judgement as to when to terminate the item. Presumably he should satisfy himself that he has elicited the person's characteristic behaviour.)

2. Tester presents stem  or some such, again on wood block, and asks student to improvise answering phrase.

3. Tester presents stem  on song bells, and asks student to improvise answering phrase using black bells only.

4. Tester establishes ostinato  and asks student to make up pattern to go with it, staying on white bells only.

5. Tester presents stem in non-common practise idiom, e.g. 

table, drum, bells. and asks student to complete the "composition" using any of the available instruments and/or any made-up sounds he cares to.

III. Scoring

Test items are rated on a scale of 1 to 5, 1 being a minimal response and 5 being comparatively ideal. The chart (Table C-1) is designed to correspond to the format of the scoring blank (Figure C-1), and is intended to indicate the thinking of those who have developed the scoring criteria.

The major assumption is that testees have control over the elements of rhythm but not over those of pitch. This poses some difficulty for the scorer who is impressed by the tonal organization of some of the responses even though the ideational level is minimal (i.e. does not depart from the ideas contained for the subjective judgement of the scorer to the effect that the testee has achieved a certain satisfying gestalt, undoubtedly a function of both rhythmic and tonal organization. It is recommended that at least three and preferably four scorers be employed, and that they reestablish their criteria after every twenty subjects have been scored. Indeed the separation of the four criteria with respect to each item on the test constitutes the major issue in scoring. Definitions of the four criteria are as follows:

1. Fluency - a matter of ease in responding, regardless of quality. (N.B. It will often tax the tester to maintain his original tempo in items 1 and 4 if the subject chooses to go his own way!)

2. Rhythmic security - a matter of maintaining tempo set by tester and of displaying some control over any figurations attempted (again irrespective of quality of ideas).

3. Ideation - frequency of occurrence of patterning over and above a straight note-for-note response. (It has so far defeated the developers of the test to organize a taxonomy of rhythmic patterns, though Edwin Gordon has done an exhaustive analysis that might well serve as a solid empirical basis for more accurate scoring. Should this be attempted, however, it is likely that a five point scale would prove to be entirely inadequate.

4. Synthesis - a matter of what the creativity literature often refers to as "aesthetic fit," how it all comes together. (Another nicety the scorers must come to grips with is that it is altogether possible to score well on ideation and yet poorly on synthesis; i.e. the mere generating of a variety of musical ideas does not always insure that the total effect is satisfying.)

Response to the level of affect the tester displays is also a factor, as is the presence of such things as thematic repetition, intentional cadencing, and so on.

TABLE C-1. Interpretation of Scoring Criteria for Vaughn Test of Musical Creativity.

I	II	III	IV	V
1. begins right away 2. proceeds purposefully	same as I	same as I	same as I	same as I
1. fits in with tester's beat 2. has control over any subdivisions he attempts	1. fits in with tester's beat 2. has control over subsequent pulse and/or pattern	same as II	same as II	emphasis on security; i.e., rhythmic elements not to be interpreted conventionally here
goes beyond a one-to-one pattern	introduces some pattern differences (i.e., not mere repetition of stem	same as II (N.B. pitch differences may be acceptable to an extent even when rhythm is exact repetition)	patterning is both rhythmic and tonal	patterning is of 3 types - rhythm pitch timbre (and presumably also loudness)
has sense of punctuation and/or form	1. develops ideas related to material in stem 2. has sense of balance and/or completion	same as II	has sense of punctuation, balance, form, etc., somewhat as in I.	1. related to idea(s) in stem 2. has sense of completion

Figure C-1

SAMPLE SCORING SHEET:
VAUGHN TEST OF MUSICAL CREATIVITY

Student No.: _____ Marker: _____

	I	II	III	IV	V	TOTAL
FLUENCY						
RHYTHMIC SECURITY						
IDEATION						
SYNTHESIS						
ITEM TOTAL						
					GRAND TOTAL	

VAUGHN TEST OF MUSICAL CREATIVITY

Student No.: _____ Marker: _____

	I	II	III	IV	V	TOTAL
FLUENCY						
RHYTHMIC SECURITY						
IDEATION						
SYNTHESIS						
ITEM TOTAL						
					GRAND TOTAL	

McCLELLAN SCORING CRITERIA FOR VAUGHN TEST OF MUSICAL CREATIVITY

	I	II	III	IV	V
FLUENCY The ability to organize sounds/silences in a larger time frame.	Begin and end with 1 breakdown.	1. Begin and end. 2. A continuous event.	1. Length: 2 measures. 2. Pulse: strictly adheres to pulse.	Length: 4 to 8 measures.	
RHYTHMIC SECURITY Definitions: Correct duration is when sounds could not be written another way.	Maintains the same tempo set by tester.	Correct duration of notes using 1st level division (=).	Correct duration of notes using 2nd level division (=).	Correct duration of ties between units (e.g.,).	Correct duration of notes using relatively equal tempo, ties within units, or representation of both 1st and 2nd level division.

	I	II	III	IV	V
IDEATION The testee must use: (1) at least one parameter for items 1, 2. (2) at least two out of three parameters for items 3, 4, 5.	Rhythmic: elicits basic pulse responses. Tonal: Uses pitches beyond those in example given by the tester. Color: One sound source and one dynamic level.	Rhythmic: Uses both notes and rests. Tonal: Melodic direction: ascending and descending passages. Color: Two sound sources and no changes in dynamic level.	Rhythmic: 1. Use of 1st level division. 2. Uses repetition. Tonal: 1. Melodic contour: stepwise and skip-wise motion. 2. Uses repeats or sequences initial idea. Color: More than two sound sources; at least one dynamic change.	Rhythmic: 1. Use of ties between units (e.g., ). Tonal: Variation techniques: segments w/sequence. Color: Several sound sources and dynamics (p-f and ).	Rhythmic: Develops rhythmic configurations using repetition and contrast. Tonal: Uses compositional devices: augmentation, diminution, or retrograde. Color: Several sound sources and dynamic gradations (p-mf-f-ff).

	I				II				III				IV			
SYNTHESIS	R	M	C	F	R	M	C	F	R	M	C	F	R	M	C	F
A. Parameters: R - Rhythm M - Melody C - Color F - Form	non-original rhythmic and/ or melodic material which uses only simple repetition without the benefit of contrast or color changes (e.g., dynamics, articulation, tempo changes, etc.)				non-original rhythmic and/ or melodic material which uses repetition and contrast or color changes (e.g., dynamics, articulation, tempo changes, etc.)				original rhythmic and/ or melodic material which uses only simple repetition without the benefit of contrast or color changes (e.g., dynamics, articulation, tempo changes, etc.)				original rhythmic and/ or melodic material which uses repetition and contrast or color changes (e.g., dynamics, articulation, tempo changes, etc.)			

APPENDIX D

MUSICAL COMPOSITION RATING SCALE

MUSIC 271 MUSICAL COMPOSITION RATING SCALE

Points: 1	2	3	4	5
1. Correct number of beats in each measure.	1. Makes use of notes and rests.	1. Ends composition with a rhythmic cadence (e.g., on an accented beat).	1. Uses all pitches in scale.	1. Uses at least one compositional device: augmentation, diminution, inversion, or retrograde.
2. Use of pitches only within the designated mode or scale.	2. Uses a minimum of 5 different pitches within scale.	2. Uses contrast.	2. Changes in dynamic levels (p-mf-f-ff).	2. Melodic contour variety (stepwise and skipwise motion).
3. Notation is legible.	3. Uses 1st level division 	3. Uses 2nd level division 	3. Melodic direction (ascending and descending passages.	3. Uses different combinations of pulse, 1st level division, 2nd level division, or ties between units.
4. Use of musical form set forth in instructions.	4. Uses repetition.		4. Uses repetition and contrast.	4. Uses sequences.

APPENDIX E

CREATIVE EXPERIENCES

Music 271 Unit Objectives Study Guide

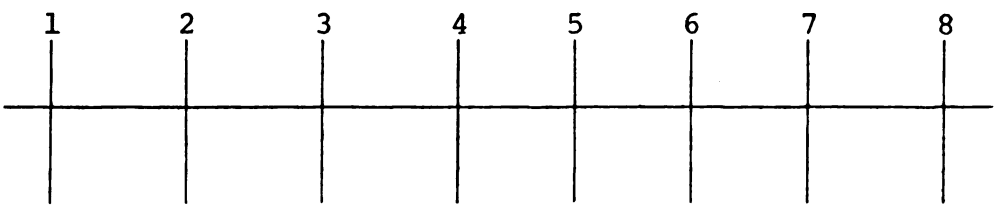
UNIT ONE: Time Line

OBJECTIVES:

At the end of this unit, you should be able to:

1. Tap a steady beat.
2. Aurally differentiate between sound and silence within a steady flow of pulse.
3. Aurally differentiate between steady pulse and variable pulse.

A. Time Line:



B. Experiences:

1. Tap a time line with a steady pulse and count the correct number of beats.
2. As the instructor points to each vertical line, recite your name with class in a steady flow of time.

Music 271 Unit Objectives Study Guide

UNIT TWO: Advanced Time Lines

OBJECTIVES:

At the end of this unit, you should be able to:

1. Write different rhythmic figures over underlying beats using the following symbols: (1) Sound (X), (2) Silence (0).

2. Create a sixteen-beat and a twenty-four beat time line. Use the symbols above to compose various rhythmic figures.

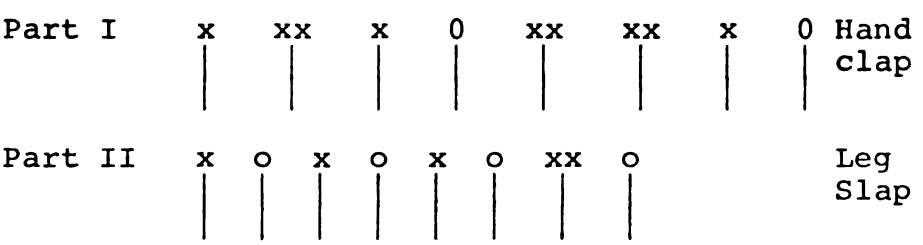
3. Aurally recognize the correct number of accents placed on a series of beats.

4. Aurally and visually identify a pattern of beat groupings and determine the meter as either duple or triple.

5. Aurally and visually differentiate between two similar or contrasting time lines containing eight beats each.

6. Aurally identify the form (A-B or A-B-A) of a time line composition.

A. Time Line (example):



B. Experiences:

1. The class will work in groups to create time lines and perform them in sequence or through alternation to study: (a) longer and shorter time durations, (b) silences, and (c) form.

2. The class will perform created time lines in groups using body sounds and/or rhythm instruments.

C. Assignments:

1. Compose two similar lines with eight beats in each line to be performed with body sounds and/or rhythm instruments.

2. Compose two contrasting lines with eight beats in each line to be performed as stated above.

Music 271 Unit Objectives Study Guide

UNIT THREE: The ostinato

OBJECTIVES:

At the end of this unit, you should be able to:

1. Write an eight-beat ostinato using sound and silence symbols.
2. Aurally and visually recognize ostinato patterns.

A. The Ostinato (example):

B. Experiences:

1. The class will perform time lines created in Unit II adding Ostinato patterns.

C. Assignments:

1. Write a four-beat ostinato to the sixteen-beat time line composed in UNIT TWO.
2. Write an eight-beat ostinato to the twenty-four beat time composed in UNIT TWO.

Music 271 Unit Objectives Study Guide

UNIT FOUR: Text Translation

OBJECTIVES:

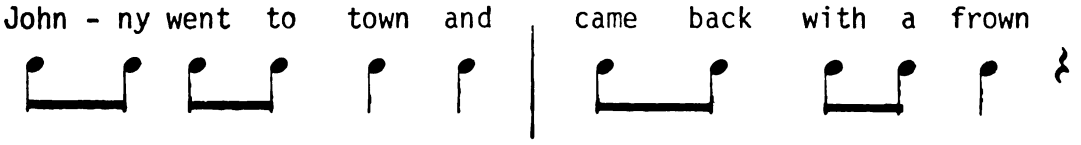
At the end of this unit, you should be able to:

1. Chant word phrases and tap the rhythmic patterns to the syllables of the words.

2. Aurally identify and notate rhythmic patterns derived from the syllables of the words.

3. Aurally and visually identify a rhythmic cadence.

A. Text Translation:



B. Experiences:

1. The instructor and class will chant and translate word phrases into rhythmic patterns.

2. The class will work in groups to translate short texts and perform.

3. The class will experience, identify, and understand the function of rhythmic cadences through performance.

C. Assignments:

1. Take a short text from a metrical poem and translate into rhythmic notation noting rhythmic cadences.

Music 271 Unit Objectives Study Guide

UNIT FIVE: Improvisation, Phrasing, Notation

OBJECTIVES:

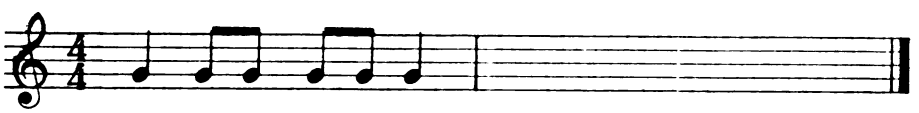
At the end of this unit, you should be able to:

1. Listen to a four-beat rhythmic pattern and improvise another related four-beat rhythmic pattern to make a complete phrase.

2. Create a four-measure two-voice rhythmic composition in $\frac{4}{4}$ time.

3. Write correct and legible musical notation.

A. Improvisation (example):



Improvise a logical second measure and bring to a rhythmic cadence on the third beat.

B. Experiences:

1. The instructor will explain basic principles of improvising a logical second measure of music with a rhythmic cadence. Each class member is to experiment with improvisation as follows:

   a. division of pulse.

   b. application of ties between units.

   c. use of both notes and rests.

   d. structure of a configuration.

2. The instructor and class will take a two-measure rhythmic pattern and use it as an ostinato for a composition.

3. The instructor and class will compose a four-measure, two-voice composition. The class will perform it using body sounds and/or rhythm instruments.

C. Assignments:

1. Compose a four-measure two-voice composition. It should consist of two, two-measure phrases over an ostinato.

a. Givens

Meter $\frac{2}{4}$ $\frac{3}{4}$ $\frac{4}{4}$

Sound/Silence Symbols

b. Texture

Voice I - rhythmic phrases
Voice II - Ostinato

b. Media

Voice I - body sounds/rhythm instruments
Voice II - body sounds or tunable drum

D. Experiences:

1. The instructor will explain duple, triple, first level, and second level division.

2. The instructor and class will derive the seven basic rhythmic patterns by manipulating the tie.

3. The class will work in groups to create and perform short rhythmic compositions using the seven basic rhythmic patterns.

E. Assignments:

1. Compose an eight-measure rhythmic composition and manipulate any or all of the first and second level division rhythmic patterns derived from the quarter note.

Music 271 Unit Objectives Study Guide

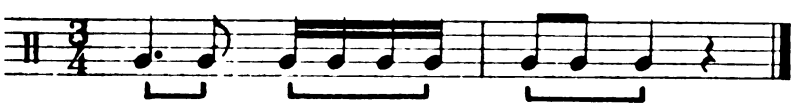
UNIT SIX: Basic Composition

OBJECTIVES:

At the end of this unit, you should be able to:

1. Define the terms pattern and configuration in writing.
2. Notate patterns and configurations.
3. Create a four-measure rhythmic composition using repetition and contrast.
4. Visually identify patterns and configurations.

A. Configuration (example):



B. Experiences:

1. The instructor and class will analyze music noting patterns and configurations.
2. The instructor and class will analyze music noting repetition and contrast.

C. Assignments:

1. Create a four-measure rhythmic composition. It should consist of two two-measure phrases over an ostinato. Establish a balance between repetition and contrast.

   A. Givens

   Meter $\frac{2}{4}$ $\frac{3}{4}$ $\frac{4}{4}$

   Sound/Silence Symbols

B. Texture

Voice I - rhythmic line
Voice II - ostinato

C. Media

Voice I - rhythm instruments
Voice II - tunable drums

Music 271 Unit Objectives Study Guide

UNIT SEVEN: Division and Derivation of Unit Rhythm Pattern

OBJECTIVES:

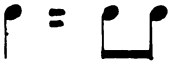
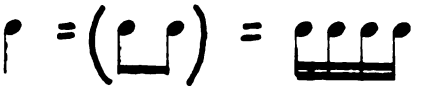
At the end of this unit, you should be able to:

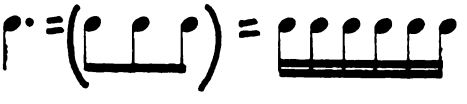
1. Write duple and triple divisions for whole, half, quarter and eighth notes.
2. Write first and second level division from the quarter note and dotted quarter note.
3. Write the seven basic rhythmic patterns through manipulation of the tie.
4. Aurally/visually identify first and second level division.

A. Division: Duple Triple (dot)

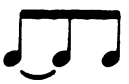
B. Derivation of Unit Rhythm Pattern:

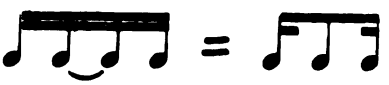
First Level Second Level

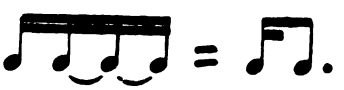
By twos  By twos 

By threes  By threes 

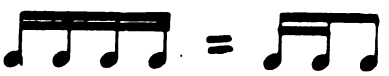
C. Seven Basic Rhythm Patterns:

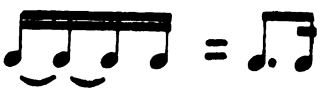
(1) 

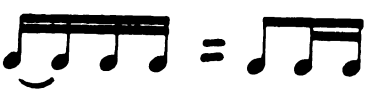
(3) 

(5) 

(2) 

(4) 

(6) 

(7) 

D. Experiences:

1. The instructor will explain duple, triple first level and second level division.

2. The instructor and class will derive the seven basic rhythmic patterns by manipulating the tie.

3. The class will work in groups to create and perform short rhythmic compositions using the seven basic rhythmic patterns.

E. Assignments:

1. Compose an eight-measure rhythmic composition and manipulate any or all of the first and second level division rhythmic patterns derived from the quarter note.

Music 271 Unit Objectives Study Guide

UNIT EIGHT: Compositional Devices

OBJECTIVES:

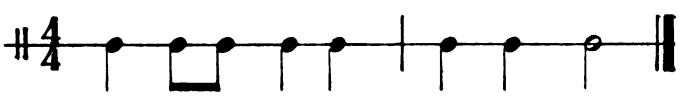
At the end of this unit, you should be able to:

1. Define augmentation, diminution and retrograde in writing.

2. Re-write a short rhythmic piece using augmentation, diminution and retrograde.

3. Aurally/visually identify augmentation, diminution and retrograde.

A. Original (example):



B. Experiences:

1. The instructor will re-write the above rhythmic material using augmentation, diminution, and retrograde for the class.

2. The class will work in groups to create two-measure rhythmic phrases and re-write the phrases using augmentation, diminution and retrograde.

C. Assignments:

1. Re-write the rhythmic piece composed in unit six using augmentation.

2. Re-write the rhythmic piece composed in unit six using diminution.

3. Re-write the rhythmic piece composed in unit six using retrograde.

Music 271 Unit Objectives Study Guide

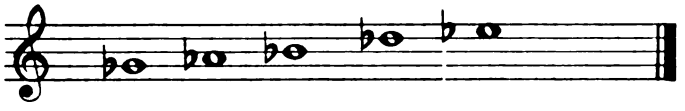
UNIT NINE: Pentatonic Scale

OBJECTIVES:

At the end of this unit, you should be able to:

1. Write a pentatonic scale beginning on any note.
2. Sing a pentatonic scale using letter names and numbers starting on C, F, G. D and B^{b}.
3. Improvise a melody consisting of two similar phrases beginning on any note.
4. Compose an eight-measure melody using the pentatonic scale. Employ any or all of the following compositional devices: (a) augmentation, diminution, and retrograde.
5. Aurally/visually identify a short pentatonic melody.
6. Aurally/visually identify two-part form (e.g., ABAB or AB).

A. Pentatonic Scale:



B. Experiences:

1. Lay the scale out on the black notes of the piano keyboard (starting on G^{b}) and study the distance between each note in terms of half and whole steps.

   Example 1 (1) 2 (1) 3 (1 1/2) 4 (1) 5.

2. Construct/write the scale beginning on C, F, G, B^{b}, and D.
3. Sing the above using letter names and numbers.

4. Play on the piano.

5. Given an ostinato consisting of two scale tones, improvise an eight-measure melody using repetition and contrast.

   a. Improvisation (Individuals)

   b. Ostinato (Other class members)

C. Assignments:

1. Compose a one or two-measure ostinato, using only two tones from the scale. Organize rhythmic units into a logical configuration.

   a. Write the composed ostinato on the lower staff of a double staff. Repeat it three times for a total of eight measures.

   b. Compose an eight-measure melody over the ostinato:

      1. Givens:
         One or two lines of a simple metrical poem.

         Meter $\frac{2}{4}$ $\frac{3}{4}$ $\frac{4}{4}$

         Sound/Silence Symbols

         Pitch - Pentatonic Scale (1 2 3 5 6)

2. Compose a sixteen-measure composition. Use repetition and contrast to create unity and interest:

   a. Givens:

      Meter $\frac{2}{4}$ $\frac{3}{4}$ $\frac{4}{4}$

      Any Sound Silence Symbols

      Pitch - Pentatonic Scale (1 2 3 5 6)

   b. Parameters - according to the above, create a two-part two-voice composition as follows:

      Section A - 2 similar phrases (8 bars)
      Section B - A contrasting set of 2 similar phrases (8 bars)

Texture

Voice I - composed melody

Voice II - Ostinato (2 scale-tones)

c. Media

Voice I - Voice or Instrument

Voice II - Piano/Mallet Instrument

d. Mode or preparation - written in two treble staves.

Music 271 Unit Objectives Study Guide

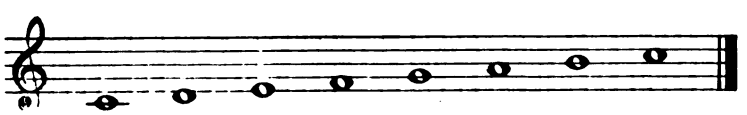
UNIT TEN: Major Scale

OBJECTIVES:

At the end of this unit, you should be able to:

1. Write a major scale beginning on any note.
2. Sing a major scale using letter names and numbers beginning on any note.
3. Improvise a melody consisting of two similar phrases. The melody should be played on the piano.
4. Compose an eight-measure melody using the major scale. Employ inversion.
5. Aurally/visually identify a short melody based on the major scale.

A. Major Scale:



B. Experiences:

1. Lay the scale out on the white keys of the piano keyboard (starting on C) and study the distance between each note in terms of half and whole steps.

   Example: 1 (1) 2 (1) 3 (1/2) 4 (1) 5 (1)

   6 (1) 7 (1/2) 8.

2. Construct/Write the scale beginning on G, D, F, and B^{b}.

3. Sing the above using the letter names and numbers.

4. Play on the piano at M.M. = 72 using the following fingering pattern:

   5432 2345
   L R

5. Given an ostinato consisting of two scale tones, improvise an eight-measure melody using repetition and contrast.

   a. Improvisation (Individuals)

   b. Ostinato (Other class members)

C. Assignments:

1. Compose a two-measure ostinato, using notes 1 - 3 - 5 from the scale.

   a. Write the composed ostinato on the lower staff of a double staff. Repeat it three times for a total of eight measures.

   b. Compose an eight-measure melody over the ostinato:

      1. Givens:

         Meter $\frac{2}{4}$ $\frac{3}{4}$ $\frac{4}{4}$

         Sound/Silence Symbols

         Pitch - Diatonic Major Scale

      2. Parameters

         2 similar phrases (8 bars)
         Texture - Melody against ostinato

      3. Media
         Melody - voice or instrument
         Ostinato = piano or mallet instrument

      4. Mode or preparation - written in two treble staves.

Music 271 Unit Objectives Study Guide

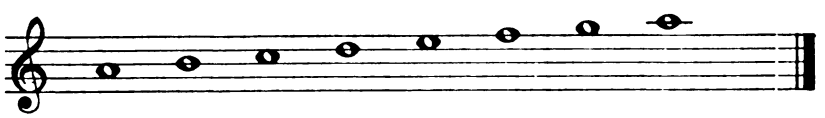
UNIT ELEVEN: Natural Minor Scale

OBJECTIVES:

At the end of this unit, you should be able to:

1. Write the minor scale beginning on any note.
2. Sing the minor scale using letter names and numbers beginning on any note.
3. Compose a sixteen-measure melody using the natural minor scale. Employ any or all of the following compositional devices: (a) augmentation, (b) diminution, (c) retrograde, (d) inversion, (e) repetition, (f) contrast, and (g) sequence.
4. Aurally/visually identify a short melody based on the natural minor scale.
5. Aurally/visually identify three-part form.

A. Natural Minor Scale:



B. Experiences:

1. Lay the scale out on the white notes of the piano keyboard (starting on A) and study the distance between each note in terms of half and whole steps.

   Example: 1 (1) 2 (1/2) 3 (1) 4 (1) 5 (1/2)

   6 (1) 7 (1) 8.

2. Construct/Write the scale beginning on E, B. D, G, and A.
3. Sing the above using letter names and numbers.
4. Play on the piano.

C. Assignments:

1. Compose 2 two-measure ostinato patterns: (a) Use notes 1 - 3 - 5, (b) Use any of the first five notes of the scale.

   a. Write the composed ostinato cited above on the lower staff of a double staff and repeat each three times for a total of eight measures for each section.

   b. Compose a sixteen-measure melody over the ostinato.

      1. Givens:

         Meter $\frac{2}{4}$ $\frac{3}{4}$ $\frac{4}{4}$

         Sound/Silence Symbols

         Pitch - Natural Minor Scale

      2. Parameters - according to the above, create a 3-part two-voice composition as follows:

         Section A - 2 similar phrases (8 bars).
         Section B - A contrasting set of 2 similar phrases (8 bars).
         Section A - Repeat Section A

         Texture

            Voice I - composed melody
            Voice II - Ostinato

      3. Media

            Voice I - Voice or Instrument
            Voice II - Piano/Mallet Instrument

      4. Mode or Preparation - written in two treble staves

Music 271 Unit Objectives Study Guide

UNIT TWELVE: Whole-tone Scale

OBJECTIVES:

At the end of this unit, you should be able to:

1. Write a whole-tone scale beginning on any note.
2. Play a whole-tone scale on the piano beginning on any note.
3. Compose an eight-measure melody using the whole-tone scale. Employ any or all of the following compositional devices: (a) repetition, (b) contrast, and (c) sequence.
4. Aurally/visually identify a short melody based on the whole-tone scale

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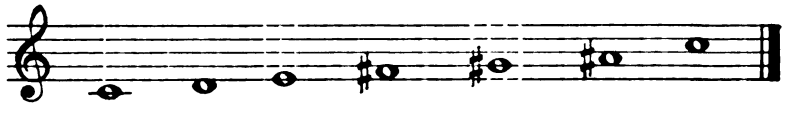
A. Whole-tone Scale:



B. Experiences:

1. Study the scale on the piano keyboard beginning on C/D^{b} and associate intervallic structure with sound.
2. Construct/Write the scale beginning on C, D^{b}, and E^{b}.
3. Play the above on the piano, using damper pedal.
4. Verbally recite the letter names of the scale at a steady tempo.

C. Assignments:

1. Compose a one-measure ostinato, using only the first three scale tones.

   a. Write the composed ostinato on the lower staff of a double staff. Repeat it seven times for a total of eight measures.

   b. Compose an eight-measure melody over the ostinato.

      1. Givens:

         Meter $\frac{2}{4}$ $\frac{3}{4}$ $\frac{4}{4}$

         Sound/Silence Symbols

         Pitch - Whole-tone Scale

      2. Parameters

         2 Similar phrases (8 bars)
         Texture - Melody against ostinato

      3. Media
         Melody - piano
         Ostinato - piano

      4. Mode or preparation - written in two treble staves.

APPENDIX F

INSTRUCTIONAL PLANS FOR EXPERIMENTAL AND CONTROL GROUP ACTIVITIES

CREATIVE EXPERIENCES

March 31

A. Pretests:
   (1) achievement test
   (2) music learning attitude scale

April 6

A. Rhythm (pulse):
   (1) study of pulse through use of time line (unit I).
   (2) division of pulse using unconventional notation; rhythmic patterns; introduction to two-part and three-part form (unit II).
   (3) group compositions and performances of sixteen-beat time lines.

B. The Ostinato (unit III):
   study of ostinato through use of time lines.

C. Assignment #1.
   compose twenty-four beat time line with ostinato (three-part form).

April 7

A. Perform assignment #1.

B. Text translation (unit IV):
   (1) experiences with translating short texts into rhythmic notation.
   (2) study rhythmic cadence.

C. Assignment #2.
   translate a short text from a metrical poem into rhythmic notation.

April 13

A. Perform assignment #2.

B. Rhythm (notation):
   (1) study of improvisation, phrasing, and notation (unit V).

(2) performing experiences with improvisation and phrasing.
(3) exercises in notation of rhythm.
(4) introduction to two-voice writing.
(5) meter.

C. Assignment #3 (in class):
Writing and performing of four-measure two-voice compositions with ostinato.

April 14

A. Continuation of assignment #3.

B. Basic composition (unit VI):
(1) study of patterns and configurations through analysis.
(2) study of repetition and contrast through analysis.

C. Assignment #4 (in class):
group writing and performance of above with four-measure compositions.

April 20

A. Division and derivation of unit rhythm pattern (unit VII):
(1) duple and triple divisions.
(2) first and second level division.
(3) experiences with seven basic rhythmic patterns through manipulation of the tie.

B. Build perception through writing and performance of A.

April 21

A. Compositional devices (unit VIII):
(1) experiences with augmentation, diminution, and retrograde through rhythmic notation and analysis.
(2) group writing and performance of the above.

B. Notation of pitch:
(1) basic study of piano keyboard.
(2) whole and half steps.
(3) accidentals.
(4) enharmonic equivalents.

A. Assignment #5:
CYU sheets (textbook)--Chapter 2, nos. 1-3.

April 27

A. Pentatonic scale (unit IX):
(1) scale structure with piano keyboard and mallet instruments.
(2) application of ostinato.
(3) improvisation with mallet instruments.

B. Notation of pitch (clefs):
write melodies based on pentatonic scale in treble, bass, and C clefs.

C. Assignment #6:
compose an eight-measure melody over an ostinato.

April 28

A. Perform assignment #6:

B. Notation of pitch (intervals):
(1) general spellings.
(2) specific spellings.
(3) inversions.

C. Improvisation on pentatonic scale with emphasis on repetition and contrast using two-measure configurations.

May 4

A. Review intervals.

B. Introduction of modes.

C. Review configurations with emphasis on repetition and contrast.

D. Assignment #7:
write a sixteen-measure two-voice composition based on pentatonic scale (two-part form).

May 5

A. Perform assignment #7:

B. Major scale (unit X):
   (1) study structure.
   (2) transposition via circle of fifths.
   (3) improvisation (mallet instruments).

C. Transpositions of modes.

D. Assignment #8:
   write on eight-measure melody over an ostinato based on the major scale.

May 11

A. Major scale (continued):
   (1) keyboard experiences (five-finger tunes).
   (2) improvisation (mallet instruments).

B. Minor scale (unit XI):
   (1) three forms: natural, harmonic, melodic.
   (2) relative and parallel minor keys.
   (3) study the sequence.

C. Review transpositions of modes.

May 12

A. Perform assignment #8.

B. Minor scale (unit XI) continued:
   (1) improvisation.
   (2) keyboard experiences--change major five-finger tunes to minor.

C. Three-part form:
   (1) contrast
   (2) change of mode

D. Review of compositional devices: augmentation, diminution, retrograde, the sequence, add inversion.

May 18

A. Compositional devices continued:
   (1) exercises in writing and performing.
   (2) improvisation using devices.

	B.	Assignment #9: write a sixteen-measure two-voice composition based on natural minor scale (three-part form).
May 19	A.	Perform assignment #9:
	B.	Modes continued.
	C.	Whole-tone scale (unit XII): (1) study two basic whole-tone scales. (2) piano keyboard experiences. (3) exercises in notation of scale starting on different notes.
	A.	Assignment #10: (1) compose an eight-measure melody over an ostinato based on whole-tone scale. (2) (substitute) same as above based on either dorian or mixolydian mode.
May 25	A.	Perform assignment #10.
	B.	Study of color: (1) dynamics (2) review tempo (3) articulations (4) timbre
	C.	Application of B to two previous compositions.
	D.	Application of B to improvisation
May 26	A.	Apply color devices to five-finger tunes.
	B.	Improvisation (mallet instruments) using color devices.
June 1	A.	Review--final examination.

June 2	A.	Administer Vaughn Musical Creativity Test.
June 7	A.	Administer final examination (posttest achievement).
	B.	Administer Music Learning Attitude Scale (posttest attitude).

Performing and Listening Experiences

March 31

A. Pretests:
   (1) achievement test
   (2) music learning attitude scale

April 4

A. Rhythm (pulse):
   (1) experiences in tapping pulse to recordings.
   (2) explanation of pulse (symmetrical and asymmetrical).
   (3) counting beats through sound and silence.
   (4) grouping of pulse.

B. Tempo:
   (1) sensing pulse.
   (2) explanation of metronome and recording pulses in beats per minute.

C. Notation:
   (1) sound and silence symbols.
   (2) rhythmic reading (tapping and clapping).
   (3) note writing exercies (handout).

April 5

A. Notation continued:
   (1) rhythmic reading (handout).
   (2) Kodaly syllables for rhythmic reading.
   (3) dot and tie.
   (4) dotted and undotted note division:
      a. performing experiences in division through aural drill--ADML (textbook pp. 59-63).
      b. symmetrical and asymmetrical pulse.

B. Meter:
   (1) grouping of pulse.
   (2) exercises in notation (CYU sheets textbook pp. 46-47).
   (3) meter signatures (symmetrical and asymmetrical).

April 11

A. Division continued:
   (1) first, second, third level division.
   (2) written exercises (handout).
   (3) aural drill--ADML (textbook pp. 64-66).

B. Meter continued:
   (1) review of meter signatures.
   (2) analytical listening (duple, triple, asymmetrical).

C. Motion:
   (1) study of conducting patterns.
   (2) unit beat designation.
   (3) tempo, meter, unit (interrelated).
   (4) analytical listening/conducting to recorded music.

D. Assignment #1: Practice conducting patterns and asymmetrical meter.

2	3	4	6
4	4	4	8

April 12

A. Motion continued:
   (1) unit beat designation.
   (2) tempo, meter, unit.

B. Rhythmic reading continued:
   (1) advanced exercies (handout).
   (2) isolate and analyze difficult patterns.
   (3) add ostinato.
   (4) perform with rhythm instruments.

C. Singing:
   introduce major scale and sing using numbers or neutral syllables.

D. Assignment #2:
   prepare rhythmic reading exercises by clapping or using syllables.

April 18

A. Perform assignment #2.

B. Review of Notation:
   (1) sound/silence symbols.
   (2) meter signatures.
   (3) division of pulse.
   (4) rhythmic reading.

C. Review of Motion:
(1) beat unit designation.
(2) analytical listening/conducting to recorded music.

D. Singing:
(1) sing major scales using neutral syllables or numbers to build perception.
(2) sing major triads using numbers to build perception.

April 19

A. Harmony--notation of pitch:
(1) keyboard:
a. white keys--half and whole step arrangement.
b. black keys--half steps between white keys.
c. twelve divisions of octave-chromatic scale.
d. accidentals--naming the black keys.
e. enharmonic equivalents.
f. naming the octaves.
g. pentatonic scale.

B. Assignment #3:
(1) practice ionian and aeolian modes on white keys to facilitate (5432 2345) fingering pattern
L R
(2) practice pentatonic scale on black keys.

April 25

A. Perform assignment #3.

B. Keyboard continued:
(1) enharmonic equivalents;
(2) naming the octaves.

C. Notation of pitch--clefs:
(1) treble and bass clefs.
(2) music reading exercises at keyboard.
(3) transposition of pentatonic scale.
(4) aural drill - ADML (textbook p. 121).

D. Singing:
(1) pentatonic melodies with numbers and letter names.
(2) melodies based on major scale with letter names.

E. Assignment #4:
practice simple melodies written in treble and bass clefs at keyboard (handout).

April 26

A. Perform assignment #4.

B. Clefs continued:
(1) alto and tenor clefs.
(2) music reading exercises at keyboard.
(3) aural drill--ADML (textbook p. 121).

C. Notation of pitch-intervals:
(1) keyboard--play intervals with general spellings on white keys.
(2) study specific spellings through keyboard.
a. PP; P4; P5; P8
b. Mm_2; Mm_3; Mm_6; Mm_7
(3) Aural drill--ADML (textbook pp. 122-124

D. Singing:
(1) exercises written in alto and tenor clefs (handout).
(2) all perfect, major, and minor intervals.

E. Assignment #5:
(1) practice singing exercises in C (alto & tenor) clefs
(2) practice singing and keyboard playing of all perfect, major, and minor intervals.

May 2

A. Perform assignment #5

B. Intervals continued-keyboard:
(1) play general spellings.
(2) play and recite specific spellings.
(3) aural drill--ADML (textbook pp. 122-134).

(4) alter perfect and major intervals to augmented and diminished.

C. Singing:
perfect, major, minor, augmented, and diminished intervals.

D. Dictation/Ear-training:
perfect, major, and minor intervals.

E. Assignment #6:
practice aural identification of all interval qualities.

May 3

A. Dictation/Ear-training continued:
(1) all interval qualities
(2) informal quiz

B. Melody-keyboard:
(1) melody defined.
(2) the diatonic scale and names for each scale member.
(3) seven diatonic modes on white keys.
(4) application of four tetrachord types to keyboard.
(5) play five-finger tunes based on seven different modes (handout).

C. Assignment #7:
(1) practice connecting tetrachords for seven different modes on white keys of keyboard.
(2) practice five-finger tunes.

May 9

A. Perform assignment #7:

B. Melody--keyboard:
(1) connect tetrachords on white keys for each of seven modes.
(2) five-finger tunes.
(3) three forms of minor scale: natural; harmonic; melodic.
(4) transpose ionian and aeolian modes to other tonics.
(5) circle of fifths.

May 10

A. Perform assignment #8.

B. Melody--keyboard:
(1) transpose major and minor scales to different keys via circle of fifths.
(2) transpose five-finger tunes to different keys (C, F, G).

C. Melody--singing:
(1) melodies in three different forms of minor.
(2) major and minor triads with letters.
(3) stepwise and skipwise melodies.

May 18

A. Perform assignment #10

B. Three basic derived forms:
(1) analysis (handout).
(2) play at keyboard.
(3) sing using numbers.

C. Musical form--listening:
three-part form and rondo form through analytical listening (recordings).

May 23

A. Three derived forms (review):
aural drill--ADML (textbook pp. 227-233).

B. Musical form-listening:
two-part, three-part, rondo forms reviewed.

May 24

A. Color:
(1) dynamics
(2) review tempo
(3) articulations
(4) timbre

B. Apply dynamics to five-finger tunes.

C. Color-singing:
apply articulations to major melodies.

	D.	Timbre--listening: Woodwind and brass instruments through recorded music.
May 30	A.	Timbre--continued: brass, woodwind, stringed instruments.
	B.	Review--final examination.
May 31	A.	Administer Vaughn Musical Creativity Test.
June 7	A.	Administer final examination (posttest achievement).
	B.	Administer Music Learning Attitude Scale (posttest attitude).

APPENDIX G

RAW DATA

TABLE G-1.--Raw Data

Student No.	Group	MMAT		MLAS		VTMC
		Pretest	Posttest	Pretest	Posttest	Posttest
1	C	12	38	134	132	57
2	C	35	48	149	153	72
3	C	29	46	140	162	60
4	C	27	48	133	127	72
5	C	29	48	137	130	57
6	C	28	47	138	143	66
7	C	20	46	113	121	62
8	C	26	44	142	160	73
9	C	20	43	169	166	69
10	C	27	44	125	129	65
11	C	22	35	153	154	69
12	C	34	41	146	144	81
13	C	26	42	143	153	62
14	C	24	42	196	196	64
15	X	14	35	134	117	76
16	X	35	46	131	166	87
17	X	23	42	158	145	74
18	X	23	40	123	135	80
19	X	26	42	170	159	61
20	X	20	47	160	167	83
21	X	26	46	154	158	79
22	X	28	46	183	192	65
23	X	34	48	164	151	63
24	X	19	44	103	107	68
25	X	29	48	125	138	77
26	X	18	38	153	144	64
27	X	29	48	165	136	65
28	X	21	42	130	156	77
29	X	30	36	150	154	79
30	X	20	28	132	130	62
31	X	26	43	141	130	85

APPENDIX H

MUSIC ACHIEVEMENT OBJECTIVES

OBJECTIVES FOR THE INTRODUCTION

At the end of the introduction, students should be able to:

A. Define, Identify, or Use Analytically

tone	frequency	decibels (db)
noise	Hertz (Hz)	spectrum
pitch	acoustics	harmonics
intensity	vibration	fundamental tone
timbre	sound wave	parameter
duration	amplitude	rhythm
harmony	melody	form
color		

B. Demonstrate Knowledge and Skill by

--discriminating between pitches as to highness and lowness,

--discriminating between sounds as to intensity levels,

--discriminating between sounds as to timbre,

--discriminating between tones as to duration,

--maintaining a steady tempo at slow to moderate rates,

--performing tones at various volume levels,

--detecting among the four characteristics of tone which one is changed upon repetition of a single tone, pitch, intensity, timbre, duration.

OBJECTIVES FOR CHAPTER I. RHYTHM

At the end of this chapter, students should be able to:

A. Define, Identify, or Use Analytically

rhythm
pulse
periodic pulse
nonperiodic pulse
unit of beat
tempo (pace)
metronome
duration of notes
duration of rests
neutral clef
tie
durational dot
unit
M.M.
whole note
half note
quarter note
eighth note
sixteenth note
flag
beam
notehead
stem
thirty-second note
pulse grouping
double bars
whole rest
half rest
quarter rest
eighth rest
sixteenth rest
thirty-second rest
grace note
durational double dot
meter
measure
measure signature
conducting pattern

B. Demonstrate Knowledge and Skill by

--writing notes and rests on a one line staff,

--writing various unit-patterns to include pulse, first, second, and third level divisions of both dotted and undotted units,

--writing from dictation rhythm-patterns containing pulse sounds, first, second, and third level divisions of both dotted and undotted units,

--clapping, tapping, or chanting rhythm-patterns from notation that include pulse sounds, first, second, and third level divisions of dotted and undotted units, and tied units,

--writing rhythmic notation appropriate to various measure signatures,

--supplying measure signatures for various rhythmic excerpts,

--imagining and indicating tempos of 60, 120, 180, and 90 pulses per minute,

--conducting various pulse patterns of 2, 3, 4, 5, and 6 pulses per measure,

--improvising simple unit-patterns and rhythm-patterns including pulse sounds, first, second, and third level divisions, and tied units,

--detecting and indicating errors in a single line rhythmic texture involving unit-patterns and rhythm-patterns of pulse sounds, first, second, and third level divisions, and tied units,

--indicating whether music heard is organized by periodic or nonperiodic pulse,

--expressing rhythmic notation through body movement,

--charting the proportionality of the basic notational system of music,

--writing a short rhythmic canon using vocal-chant sounds and/or rhythm instruments,

--composing a short rhythmic composition using available rhythmic materials presented in the chapter.

OBJECTIVES FOR CHAPTER II. HARMONY

At the end of this chapter, the student should be able to define, identify, or use analytically the following terms, symbols, and concepts:

- equal temperament
- perfect octave
- basic scale
- diatonic scale
- melodic intervals
- half step
- whole step
- chromatic scale
- tone cluster
- lateration signs
- tonality
- sharp
- natural
- flat
- double sharp
- double flat
- enharmonic equivalent
- 8va
- 15ma
- interval
- compound interval
- prime
- unison
- diminished interval
- augmented interval
- tritone
- quality of interval
- interval inversion
- harmonic interval
- simple interval
- tertian chords
- major triad
- chord root
- chord third
- chord fifth
- grand staff
- octave names
- staff
- clefs
- ascending pitches
- descending pitches
- ledger lines
- alto clef
- tenor clef
- treble clef
- bass clef
- general spelling (2nd, 3rd, 4th, 5th, 6th, 7th, octave)
- specific spelling (M2, m2, M3, m3, P4, A4, d5, P5, A5, M6, m6, M7, m7)
- triad
- minor triad
- diminished third
- Augmented triad
- quality of triad

In addition to the above abilities, students, after working through Chapter II, should be able to demonstrate knowledge of the content by:

--naming and playing notes at the piano,

--aurally identifying harmonic intervals,

--showing effects of alteration signs by performing on piano or their own instrument,

--playing enharmonic equivalents,

--playing any pitch on the piano according to the octave naming procedure,

--playing and singing ascending and descending melodic lines,

--interpreting 8va and 15ma signs through performance,

--aurally recognizing and labelling half and whole step pitch alterations,

--playing on piano as well as on their own instrument all general and specific intervals,

--aurally recognizing all general and specific intervals,

--demonstrating interval inversion at piano or with own instrument,

--aurally recognizing all types of triads,

--writing simple, tonal, diatonic melodies from dictation,

--singing various intervals from score or by ear,

--spelling with letters any basic triad,

--using Chapter II materials in improvisation and/or creative writing,

--writing triads in all clefs.

OBJECTIVES FOR CHAPTER III. MELODY

At the end of this chapter, students should be able to:

A. Define, Identify or Use Analytically

melody
diatonic scale
mode
whole-tone scale
pentatonic scale
Aeolian
Locrian
Dorian
Phrygian
Lydian
Mixolydian
dynamic accent
major scale
minor scale
diatonic melody
derived scale
tonality
key center
tonic center
tonic
supertonic
mediant
subdominant
dominant
submediant
leading tone
subtonic
tetrachord
harmonic minor scale
major mode
mode
Picardy third
transposition
circle of fifths
related scales and modes
relative major
relative minor
parallel scales and modes
modulation
modal key signatures

B. Demonstrate Knowledge and Skill by

--spelling any mode from any given pitch,

--singing or playing various modes at the piano or on their instrument,

--using various tetrachords to produce various scales and modes,

--transposing various modes or scales on piano or their instrument,

--aurally identifying major and harmonic minor scales and all modes,

--identifying the scale or mode from a performed composition,

--determining the key of a written piece of music,

--writing all scales and modes from any given pitch,

--detecting errors in short melodies or phrases,

--writing short phrases from aural stimuli,

--using materials from Chapter III in improvisation and creative writing.

OBJECTIVES FOR CHAPTER IV. FORM

At the end of this chapter, students should be able to:

A. Define, Identify, or Use Analytically

form	real inversion
balance	tonal inversion
unity	augmentation
variety	diminution
configuration	expansion
restatement	contraction
contrast	interpolation
variant	deletion
segment	palindrome
retrograde	ostinato
inversion	binary
retrograde inversion	ternary

B. Demonstrate Knowledge and Skill by

--writing or performing variants for a given written configuration,

--writing or performing variants for an aurally given configuration,

--deriving segments from a written configuration,

--identifying a configuration (either written or aural) each time it occurs in a composition,

--discussing the nature of balance between restatement and contrast in a given composition.

OBJECTIVES FOR CHAPTER V. COLOR

At the end of this chapter, students should be able to:

A. Define, Identify, or Use Analytically

color
timbre
intonation
vibrato
bend
fall off
piano
pianissimo
pianississimo
forte
fortissimo
fortississimo
mezzo piano
mezzo forte
crescendo
diminuendo
decrescendo
subito
poco a poco
staccatissimo
staccato
tenuto
portato
legato
legatura
fermata
simile
articulation
meno mosso
piu mosso
tempo giusto
tempo primo
largo
lento
adagio
andante
moderato
allegro
presto
prestissimo
rubato
accelerando
stringendo
rallentando
ritardando (rit., ritard.)
a tempo
timbre

B. Demonstrate Knowledge and Skill by

--performing tones with and without vibrato,

--performing tones with bends and fall-offs,

--performing melodies at various static and changing dynamic levels,

--placing appropriate dynamic markings in a melodic line,

--performing different alterations in duration accurately,

--marking score for accurate interpretation,

--responding accurately to tempo changes, tempo levels, and expressive tempo changes (rubato),

--recognizing and discriminating variations of pitch, tempo, duration, dynamics, and timbre while listening to various types of music.