

A STUDY OF THE EFFECTIVENESS OF PARTIAL SYNTHESIS
AS A READINESS FOR TONAL MUSIC READING

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

by

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April 1986



TEMPLE UNIVERSITY GRADUATE BOARD

Title of Dissertation:

A STUDY OF THE EFFECTIVENESS OF PARTIAL SYNTHESIS AS A READINESS FOR TONAL MUSIC READING

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4/28/86

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1986

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ACKNOWLEDGMENTS

To my wife Mary,
Dr. Edwin E. Gordon, and Dr. John M. Holahan
With Love, Respect, and Gratitude

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CHAPTER I

PURPOSE AND PROBLEMS OF THE STUDY

Introduction

A recurrent topic in music education research is the manner in which children learn music. Learning theories, teaching methods, and teaching techniques have been derived from observational and experimental research. Such information is valuable to music educators who seek to implement efficient ways for children to learn music through the development of their music skills.

Among the learning theories which have affected music education in recent years are those of Gagné and Dalcroze. Gagné's eight-category hierarchical theory of learning denotes a

pedagogical philosophy that yields a rigid sequence of activities to which all students adhere. Students progress from one level of the hierarchy to the next, but no provision is made for the skipping of steps or the return to a previous level, so¹a rigid formal instructional program results.

¹ Harold F. Abeles, Charles R. Hoffer, and Robert H. Klotman, Foundations of Music Education (New York: Schirmer Books, 1984), p. 173.

Dalcroze's philosophy of movement and eurhythmics continues to be an important influence in music education. His ideas are based upon the fusion of sensory and intellectual experiences, through which "the skills and understandings of the least and most accomplished musician are built on active involvement in musical experience."²

The methods and techniques of Orff and Kodaly are used by many music educators. Both men "consciously learned from Dalcroze,"³ and although the two philosophies are interrelated, each man's methodology has its own purpose and practice. Orff, who advocated that children should create music informally before they perform it formally, uses chant and movement as the major components of his methodology of teaching music. Kodaly's methodology "reflects a revival of several systems popular in years past not only in Europe but in this country as well."⁴ A fundamental principle of Kodaly's methodology is the tonic sol-fa tonal syllable system, originated by John Curwen. A modified version of Curwen's hand signs is also basic to Kodaly's theory of how children should learn to read the tonal dimension of music.

² Beth Landis and Polly Carder, The Eclectic Curriculum in American Music Education: Contributions of Dalcroze, Kodaly, and Orff (Washington, D.C.: Music Educators National Conference, 1972), p. 9.

³ Landis and Carder, Eclectic Curriculum, p. 3.

⁴ A. Theodore Tellstrom, Music in American Education Past and Present (New York: Holt, Rinehart and Winston, Inc., 1971), pp. 246-247.

The methodologies of Orff and Kodaly are among several in use by music educators concerned with the development of music skills. Through the continued use and development of learning theories, methods, and techniques, it may be possible to discover the manner in which children learn music most efficiently.

One current explanation of the sequence in which children learn music most efficiently is provided in the learning theory of Gordon. Through experimental and observational research, Gordon developed the theory as a model of how children learn music. The pedagogical use of the theory leads students to develop music understanding. Gordon's theory provides structure for the development of many methods based upon what we learn and how we learn when we learn music.

Structure of the learning theory is based upon what children should be taught as readiesses for learning music skills and music understanding. To explain the sequence in which children learn music, the theory is organized into hierarchical sequential levels which include the broadest functions of learning, discrimination and inference.

Discrimination is based upon, and includes, perception. It also implies some measure of inference. However, although inference emphasizes conceptualization, it incorporates discrimination. Therefore, the generic functions of discrimination and inference are not mutually exclusive; each includes the other to some extent. They differ primarily in the type of learning which is emphasized.

⁵ Edwin E. Gordon, Learning Sequences in Music (Chicago: G.I.A. Publications, Inc., 1980), p. 11.

Thus, the two types of learning operate concurrently, and only to a matter of degree does one receive emphasis over the other. Because the levels of learning in discrimination and inference are hierarchical, each level of learning represents a necessary readiness for the succeeding level.

"Audiation takes place when one hears music silently, that is, when the sound is not physically present. One may audiate in recalling music or in composing music."⁶

Audiation is not only basic to the sequential levels of Gordon's learning theory, it is also the basis of musical thinking. Also fundamental to Gordon's learning theory is notational audiation, the ability to audiate what is seen in notation. Evidence of the fundamental importance of audiation has been confirmed in the validation of music aptitude tests, such as the Musical Aptitude Profile (MAP), the Primary Measures of Music Audiation (PMMA), and the Intermediate Measures of Music Audiation (IMMA).⁷

"Music educators and music psychologists such as Kodaly and Gordon agree that the interactive processes of listening and singing are necessary for the development of

⁶ Edwin E. Gordon, Learning Sequences in Music (Chicago: G.I.A. Publications, Inc., 1984), p. 11.

⁷ Edwin E. Gordon, Musical Aptitude Profile (Boston: Houghton Mifflin Co., 1965); Primary Measures of Music Audiation (Chicago: G.I.A. Publications, Inc., 1979); Intermediate Measures of Music Audiation (Chicago: G.I.A. Publications, Inc., 1982).

'inner hearing' or 'audiation.'"⁸ In consideration of these interactive processes, the lowest level of discrimination learning in the learning theory is aural/oral. Learning music at the lowest level of discrimination learning involves listening to music (aural) and performing music (oral) through singing and moving. Although emphasis is given to rote learning at this lowest level of learning, it should be clear that inference learning is also operating to some degree. That is, the process of audiation is dependent not only upon the summation of music heard and performed, but to some extent upon the contribution of the individual to the process. The individual's contribution in turn is dependent upon his potential to achieve, referred to as his music aptitude.

Verbal association is the next level of discrimination learning. At verbal association, vocabulary names are associated with tonal and rhythm patterns learned at the aural/oral level. Vocabulary names such as "do, mi, so" for tonal patterns and "du de du de" for rhythm patterns are associated by rote with tonal and rhythm patterns learned at the aural/oral level.⁹ The vocabulary names

⁸ John M. Holahan, "The Effects of Vocal Techniques Instruction on the Improvement of First Grade Children's Tonal Developmental Music Aptitudes," Pennsylvania Music Educators Association Bulletin (Fall 1984), p. 19.

⁹ For a detailed discussion of the movable "do" tonal syllable system, and Gordon's rhythm syllable system that is based upon rhythmic functions and not on the time value names of notes, see Edwin E. Gordon, Learning Sequences in Music (Chicago: G.I.A. Publications, Inc., 1984), Chapter 11.

become functional when one refers to either a tonal pattern or a rhythm pattern learned at the aural/oral level. In addition, proper names associated with tonalities, such as "major" and "minor," and pattern functions, such as "tonic" and "dominant," are associated with the familiar patterns heard and performed at the aural/oral level. Through verbal association, one is able to describe accurately in language what he has heard and performed as musical sound at the aural/oral level. The association of vocabulary names and proper names with tonal patterns and rhythm patterns allows musicians to communicate more precisely. Rote discrimination learning is emphasized at both the aural/oral and verbal association levels. Inference learning, however, is operating concurrently with discrimination learning as the individual contributes to the rote process.

Some music educators design instructional sequences that progress directly from the verbal association level of learning to the symbolic association level of learning. At the symbolic association level, one develops music literacy by "symbolically associating the notation of . . . patterns with the syllable names and the proper names . . . learned . . . at the verbal association level, and to audiate the sounds . . . learned for [the patterns] at the aural/oral level."¹⁰ Two subparts, reading and writing, are included in symbolic association. Many teachers who desire

¹⁰ Gordon, Learning Sequences, 1984 ed., p. 44.

to teach students to read and to write music expediently might believe that verbal association is the immediate readiness for symbolic association. That is, after students learn to associate vocabulary names with tonal and rhythm patterns, the progression to reading and writing notation (symbolic association) seems logical.

Gordon reasons that to read and to write music meaningfully, students must first recognize "the inherent logic of tonal syllables within and among tonal patterns and the inherent logic of rhythm syllables within and among rhythm patterns."¹¹ Second, students must hear a series of tonal patterns or rhythm patterns and learn to recognize the tonality or meter suggested by the patterns. That is, through the synthesis of individual patterns, one should be able to audiate a series of patterns differently from the sum of the independent parts which make up the series. For example, one gives meaning to music by recognizing minor tonality in a series of tonal patterns, or by recognizing triple meter in a series of rhythm patterns. Having synthesized the individual patterns into a larger context, one develops a better understanding of tonality from the tonal syntax of a series of tonal patterns, and meter from the rhythm syntax of a series of rhythm patterns. When students learn by rote to audiate the tonality of a series of familiar tonal patterns or the meter of a series of familiar rhythm patterns, they are

¹¹ Gordon, Learning Sequences, 1984 ed., p. 38.

engaging in what Gordon refers to as the partial synthesis level of discrimination learning.

As a result of being able to recognize and to partially synthesize familiar patterns at the discrimination level of learning, one is able to identify unfamiliar patterns (those which have not been learned by rote) at the generalization level of inference learning. That is, based upon one's ability to recognize the majority of familiar patterns in a given series of patterns, one is able also to identify unfamiliar patterns as "contributing to an overall sense of tonality or meter" ¹² As in the preceding levels of learning, inference learning occurs at the generalization level as a result of discrimination learning at partial synthesis. Gordon refers to this process of temporarily skipping, i.e., from partial synthesis (discrimination learning) to generalization (inference learning), as spiral movement.

That one is able to identify unfamiliar patterns by inference in conjunction with recognizing familiar patterns by discrimination presupposes an organismic perspective of understanding. ¹³ Overton concurs that individuals possess inherently active minds, and thus one is able to reason and to construct principles of order. From the

¹² Gordon, Learning Sequences, 1980 ed., p. 23.

¹³ For a further discussion of organismic and mechanistic perspectives of development, see Willis F. Overton, "Historical and Contemporary Perspectives of Development," Unpublished paper, Temple University 1983.

organismic viewpoint, the active mind participates in understanding; understanding is not simply a function of antecedent variables (mechanistic perspective) such as environmental or biological factors. The organismic contention is that "the perceiver brings a structural knowledge of the world into every perceptual situation. The perceiver [thus] imposes his own organization upon the information that reaches his perceptor systems."¹⁴ With partial synthesis, one is able to recognize familiar patterns at discrimination learning. As a result, one is able to identify unfamiliar patterns at inference learning because the active mind is participating in understanding. One's understanding of the patterns is not simply a summation of the familiar patterns learned. Rather, in inference learning, the series of patterns, the majority being familiar, is audiated in a more complex manner than is the sum of the familiar patterns. The complexity of audiation is dependent upon the individual's contribution to the learning process, as measured by his music aptitude.

At the symbolic association level of learning, students associate symbols with syllables (from verbal association) which are associated with sound (aural/oral). It is theorized that to give best conceptual meaning to symbols at symbolic association, partial synthesis should

¹⁴ Frank Smith, Understanding Reading - A Psycholinguistic Analysis of Reading and Learning to Read (New York: Holt, Rinehart and Winston, Inc., 1971), p. 187.

occur. That is, students develop a sense of tonality and a sense of meter at the partial synthesis level by recognizing a series of patterns as a synthesized whole. With partial synthesis, one gives conceptual meaning to symbols which are read or written at symbolic association. Without partial synthesis, one typically attempts to take perceptual meaning from the symbols. Although giving meaning to and taking meaning from symbols is an interactive process, one's ability to partially synthesize patterns influences the degree to which one gives meaning to symbols in symbolic association.

It is reasonable to assume that students who have learned to partially synthesize patterns should be better able to symbolically associate those patterns. The purpose of this research was to gain objective information about the role of partial synthesis as a readiness for music reading.

Problems

The following were the problems of the study:

1. The determination of the comparative effects of two methods of tonal instruction on the music reading achievement of high school choral students were investigated. One method included partial synthesis instruction in the teaching sequence of aural/oral, verbal association, and symbolic association. The other method included only aural/oral, verbal association, and symbolic association.

2. The effects of level of music aptitude on the two methods of instruction were investigated.