

AN INVESTIGATION OF THE VALIDITY OF THE
PRIMARY MEASURES OF MUSIC AUDIATION
FOR USE WITH LEARNING DISABLED CHILDREN

by
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CHAPTER I
PURPOSE OF THE STUDY

Introduction

The recently published Primary Measures of Music Audiation¹ enable music educators to measure effectively basic music aptitudes of young children in kindergarten through grade three. The author suggests the following:

With the understanding that music aptitudes do not stabilize until grade four and at that time a more extensive music aptitude battery should be administered, scores on the Primary Measures of Music Audiation can serve the following three specific purposes.

1. Periodically to evaluate the comparative tonal and rhythm aptitudes of each young child...
2. Periodically to identify young children who can profit from the opportunity to participate in additional group study and special private instruction in and out of school...
3. Periodically to evaluate the tonal and rhythm aptitudes of each young child as compared to the tonal and rhythm aptitudes of other children of similar age...²

Only a few studies which use the Primary Measures of Music Audiation have been designed to investigate the comparability of the music aptitudes of groups of children of varied backgrounds.

¹Edwin Gordon, Manual, Primary Measures of Music Audiation, (Chicago: G.I.A. Publications, Inc., 1979), p.1.

²Ibid.

The Primary Measures of Music Audiation³ are tape recorded group tests of short musical phrases. The battery is in two parts: Tonal and Rhythm. Children take the test by listening to a tonal tape recording and to a rhythm tape recording, and there are forty questions on each tape. The children are directed to decide whether pairs of tonal patterns and pairs of rhythm patterns heard on the tape recordings sound the same or different, and they indicate their choice by drawing a circle around pictures on the answer sheets. Raw scores are derived for each child from the two tests, and the scores are used for diagnostic purposes to determine each child's musical strengths and weaknesses. The tests are standardized for children in kindergarten through grade three.⁴

Estimates of validity of the Primary Measures of Music Audiation can be found in the manual. One type of statistical evidence of test validity is reliability coefficients. Gordon states that:

...Reliability coefficients generally range between .00 and .95. The closer the coefficient approaches the upper limit, the more stable the test scores are and the greater the freedom of the scores from factors which obscure real differences in test results.⁵

³See Appendix A for a complete description of the Primary Measures of Music Audiation.

⁴Ibid., p.2.

⁵Ibid., p.65.

The coefficients for the split-halves reliability reported in the test manual⁶ range in the .70's and .80's for the subtests of Tonal and Rhythm and in the .90's for the Composite test. These coefficients are comparable to those generally reported for academic aptitude tests.

Gordon compared Primary Measures of Music Audiation test scores of inner-city children with the scores of children who participated in the standardization program. He found the differences for the Tonal test statistically significant in every grade (each favoring the standardization group), and the differences for the Rhythm test statistically different only in the third grade (favoring the inner-city school group). Because these differences were found to exist between the groups of children from divergent environments, the results gave objective support to the concept of developmental music aptitude.⁷

In another study,⁸ Gordon tested children in a private academic school and in a community music school. The results were compared to those in the standardization

⁶Ibid., p.67.

⁷Edwin Gordon, "Developmental Music Aptitudes Among Inner-City Primary Children", Bulletin of the Council for Research in Music Education 63 (Summer 1980): pp.25-30.

⁸Edwin Gordon, "Developmental Music Aptitude as Measured by the Primary Measures of Music Audiation", Psychology of Music 7 (1979): pp.42-49.

group. It was found that when the mean differences, standard deviations, reliability coefficients and the raw score-percentile rank equivalents derived for the private academic school and the community music school were compared to those of the standardization group, the standardization group scores were significantly lower. According to Gordon:

The resultant differences of practical and statistical significance are most logically explained as being outcomes of early informal environmental cultural influences and innate music capacities. The children who attend the private academic school are select in the sense of the cultural advantages they enjoy outside of school and the rich school arts curriculum available to them. Although they probably have the same distribution of innate music capacity as the standardization group, the private academic school children demonstrate higher overall developmental music aptitude because of their environment and corresponding opportunities...The two factors, innate capacity and environment, appear to serve as equalizers in the development of music aptitude of young children.⁹

The inner-city school study and the private academic-community music school study investigated the comparative music aptitudes of typical young children from varied backgrounds. The results of those studies indicate that differences exist in developmental music aptitude among groups of young children from varied backgrounds.

⁹Ibid., p.47.

Purpose of the Study

The primary purpose of this study was to determine if the Primary Measures of Music Audiation are suitable for use with learning disabled children in the primary grades. Information obtained from the results of the study should enable classroom music teachers to use the Primary Measures of Music Audiation more confidently and effectively with learning disabled children. High scoring individuals could be identified as gifted learning disabled children for whom special music programs in and out of school could be recommended. Further, a teacher may adapt instruction for low scoring learning disabled children to compensate for their musical weaknesses in tonal and/or rhythmic aptitude.

Problems of the Study

To determine if the Primary Measures of Music Audiation are suitable for use with learning disabled children, the following specific questions were investigated.

1. Will the Primary Measures of Music Audiation discriminate among learning disabled children according to the different grades in which they are enrolled?
2. Will the Primary Measures of Music Audiation discriminate among learning disabled children according to their different chronological ages?

3. Will the Primary Measures of Music Audiation discriminate among learning disabled children who are one and two grade levels behind their chronological age level peers?

CHAPTER II
REVIEW OF RELATED RESEARCH

Introduction

Studies have been conducted to investigate the validity of the Primary Measures of Music Audiation in regard to their use with primary grade children from divergent environments. No studies have been designed specifically to investigate the validity of the Primary Measures of Music Audiation for use with learning disabled children. The West Irondequoit study of 1978 provided the standardized data which are reported in the Primary Measures of Music Audiation Manual.¹⁰

Three subsequent studies by Gordon bear a relationship to developmental music aptitude. One, an inner-city school study and the other a private academic-community music school study, were conducted to determine if differences exist between groups of younger children from divergent environments. Comparisons were made between these groups and the West Irondequoit standardization group, and the results of the research gave objective support to the concept and function of developmental music aptitude.

¹⁰Gordon, Manual, p.64.

In the West Irondequoit longitudinal study of 1979, the concept of developmental music aptitude was further investigated. Observed mean differences between the West Irondequoit cross-sectional group of 1978 and the West Irondequoit longitudinal group of 1979, in which the same children were retested, were calculated to determine if young children's musical aptitude scores fluctuate in correspondence with different types of exposure to music and different music instruction. The results reinforced the concept of developmental music aptitude of typical young children. These studies are the only ones which are related to the present investigation. They relate only indirectly, however, to questions pertaining to the music aptitude of learning disabled children in the primary grades.

The West Irondequoit Study¹¹

The norms provided with the Primary Measures of Music Audiation are based on the test results of a carefully selected but relatively small group of children within specific age ranges. The tests were administered in 1978 to 873 children in kindergarten through grade three in nine elementary schools in the city of West Irondequoit, New York. The enrollments by grade were 127 in kindergarten,

¹¹Gordon, Manual, pp.64-90.

202 in grade one, 280 in grade two, and 264 in grade three. The norms sample served two fundamental needs: (1) To offer evidence of the statistical properties of the test, and (2) To provide for the objective evaluation of the test scores when local norms are not available. The West Irondequoit children do not represent every possible extreme that may be found among elementary school children. However, they appear to be fairly representative of typical elementary school children.¹²

The procedure for the derivation of the scores for the Primary Measures of Music Audiation is stated in the manual:

The Tonal test and the Rhythm test were scored separately for each grade. In addition to securing a raw score for each test for each child, the scores on the two tests were summed to derive a Composite score. This resulted in three sets of scores--tonal, rhythm, and composite, for kindergarten through grade three. Each raw score distribution was plotted and smoothed graphically, and the percentile ranks for the raw scores were read and recorded for the respective grades.¹³

The following test means show an increase in scores as chronological ages increase. For the Tonal test, the means are: age 5, 24.7; age 6, 29.8; age 7, 32.0; age 8, 34.6. For the Rhythm test, the means are: age 5, 22.3; age 6, 25.8; age 7, 27.7; age 8, 29.4. For the Composite test, the means are: age 5, 47.0; age 6,

¹²Ibid., p.64.

¹³Ibid., p.65.

55.6; age 7, 59.7; age 8, 64.0. The standard deviations, with the exception of the Rhythm test for the age 5 group, demonstrate an inverse relationship to the ages of the children. For the Tonal test, the standard deviations are: age 5, 5.28; age 6, 5.03; age 7, 4.75; age 8, 3.35. For the Rhythm test, the standard deviations are: age 5, 3.74; age 6, 4.34; age 7, 4.55; age 8, 3.99. The reliability coefficients for the Tonal and Rhythm tests range from .72 to .89 and the Composite test from .90 to .92. Gordon makes the following statement regarding the variability of the tests:

Even though the tests appear to be somewhat more difficult for kindergarten children and somewhat easier for third grade children than may be desirable, the fact that the same tests can be administered to both age groups of children more than compensates for this limited disadvantage. A child's growth in developmental music aptitude is more validly evaluated when the same test can be reliably administered [on different occasions].

The relationship of the mean and the standard deviation of each test, in conjunction with corresponding reliabilities, suggests that the tests are appropriate for use with children in the grades for which they were designed.¹⁴

After the standardization of the Primary Measures of Music Audiation was established, subsequent studies were conducted to examine developmental music aptitudes in different cultural groups.

¹⁴Ibid., p.68.