

AN INVESTIGATION OF THE EXPERIMENTAL VERSION PRIMARY
LEVEL MUSICAL APTITUDE PROFILE FOR USE WITH
SECOND AND THIRD GRADE STUDENTS

by

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An Abstract

Of a dissertation submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy in the School of Music in the Graduate College of The University of Iowa

June, 1967

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The specific problems of the study were: (1) to develop experimental version primary level Musical Aptitude Profile normative data for use with second and third grade students and (2) to investigate pertinent aspects of validity of the test battery.

The primary level Musical Aptitude Profile was administered to 736 second and 999 third grade students who were enrolled in public schools in twelve midwestern cities and towns. The scores of these students were used to investigate the reliability of the primary battery. Subtest and composite test split-halves reliability coefficients ranged from .73 to .88 for second grade students and from .68 to .87 for third grade students. Standard deviations, standard errors of measurement, and intercorrelation coefficients were similar to corresponding data obtained for older students on the regular edition Musical Aptitude Profile. Primary level Musical Aptitude Profile standard score percentile rank equivalents were developed for second and third grade students.

Of the total sample, 61 second grade and 62 third grade students were used for the investigation of the validity of the primary level Musical Aptitude Profile. Test scores earned by these children were correlated with teachers' ratings of musical ability and scholastic ability.

Within-school correlations between second and third grade students' primary level Musical Aptitude Profile scores and musical ability ratings were generally significant at the five percent level of confidence. The coefficients ranged from .07 to .37 and from .07 to .39 for second and third grade students, respectively. Only two correlations between students' test scores and scholastic ability ratings were significant. As expected, the primary level Musical Aptitude Profile scores demonstrated, over-all, more relationship to musical ability ratings than to scholastic ability ratings.

The musical ability of the 123 students was determined also by a group of three judges who evaluated the students' tape-recorded performances of specially composed musical examples. Within-school judge reliabilities ranged from .29 to .85 for second grade students and from .58 to .90 for third grade students. The combined judges' reliabilities ranged from .75 to .90 and from .87 to .94 for second and third grade students, respectively.

Generally, the within-school correlations between second and third grade students' primary level Musical Aptitude Profile scores and performance ratings were significant at the five percent level of confidence. The coefficients for second grade students ranged from -.03 to .43 and

for third grade students from .03 to .48. For students in both grades, more correlations between the Rhythm subtest and judges' combined ratings were significant than were correlations between either of the other subtests and judges' combined ratings. The fewest significant correlations, for both grades, were found for the Expression subtest and judges' combined ratings.

The data suggest that the primary level Musical Aptitude Profile, which includes the same item content as the regular edition Musical Aptitude Profile, functions as well with second and third grade students as the regular battery does with fourth grade students and older. This is suggested by the following two facts: (1) test scores demonstrate satisfactory reliability, and (2) test scores appear to be more generally related to musical ability and musical performance than to scholastic ability. Therefore, the primary version MAP may be used by teachers as an objective aid in identifying musically talented students and, to a lesser extent, for adapting instruction to the individual needs and abilities of second and third grade students.

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Chapter I

PURPOSE OF THE STUDY

I. INTRODUCTION

Of the writings pertaining to the objective measurement of musical aptitude, two basic philosophies emerge: one, an atomistic, structuralist view; the other, a Gestalt view.

The first embraces the thought that musical aptitude can be measured through the sound wave and its four physical attributes: frequency, amplitude, duration, and form. Because music is a phenomenon of pitch, loudness, time, and timbre, advocates of this philosophy contend that the sensory acuities which constitute the sound wave are indicative of musical aptitude. The most prominent proponent of this philosophy was Carl Seashore. Seashore maintained that, ". . . since music is conveyed from the performer to the listener by means of the sound wave, everything rendered and perceived as music can be expressed in terms of the physical attributes of the sound wave."¹

1. W. E. Whybrew, Measurement and Evaluation in Music, (Dubuque, Iowa: W. C. Brown and Company, 1962) p. 87.

Working with this hypothesis, Seashore devised a set of tests² to measure differences among individuals in these capacities. According to Seashore, an individual who can discriminate small differences in sound wave attributes has the basic competencies characteristic of superior musicians. Seashore emphasized that these capacities did not represent the total complex of musical aptitude, but that they were important measurable capacities. Seashore states:

Musical talent is not one, but a hierarchy of talents, branching out along certain trunk lines into the rich arborization, foliage, and fruitage of the tree, which we call the 'musical mind.' The normal musical mind is first of all a normal mind. What makes it musical is the possession, in a serviceable degree, of those capacities which are essential for the hearing, the feeling, the understanding, and, ordinarily, for some form of expression of music, with a resulting drive or urge toward music.³

In an attempt to measure additional elements of musical aptitude, Seashore also included a Tonal Memory and a Consonance test in the 1919 edition of the Seashore Measures of Musical Talent. Because the Consonance test was later found to be relatively unreliable, it was

2. C. E. Seashore, Measures of Musical Talent, (New York: Columbia Phonograph Company, 1919).

3. C. E. Seashore, Psychology of Music, (New York: McGraw Hill Book Company, 1938) p. 2.

replaced by a Timbre test. In 1923, a Rhythm test was added to the battery.

The second basic philosophy which influenced research in the measurement of musical aptitude is an omnibus theory, a concept offered by Gestalt psychologists. Advocates of this approach adhere to the premise that musical aptitude is more than a sum of special sensory abilities. The proponents contend that musical aptitude is a combination of mental processes. Mursell states:

We must not think of musicality as a faculty or an instinct, or a special ability or trait marked off from all other mechanisms of the mind and operated in isolation. Everything we know about the mind and its correlate, the central nervous system, indicates that it is not a congeries of separate faculties. On the contrary, whenever it is performing any significant task, it operates as a unit⁴

Many different capacities are involved in dealing with music, and these may be combined in many ways⁵

But the essential point is that musicality depends on and consists of an awareness of tonal-rhythmic configurations or tonal patterns and an emotional responsiveness thereto.⁶

4. J. Mursell, The Psychology of Music, (New York: W. W. Norton and Company, Inc., 1937) p. 321.

5. Ibid., p. 322.

6. Ibid., p. 323.

Herbert Wing is regarded to be the foremost proponent of this school of thought, and the Wing Standardised Test of Musical Intelligence⁷ incorporates this "perceptual approach." The test represents the viewpoint often supported by a contingent of Europeans who believe that musical aptitude is dependent upon a general factor which is highly related to intelligent and aesthetic problem solving.⁸ The Wing battery of seven subtests measures discrimination in Chord Analysis, Pitch Change, Memory, Rhythmic Accent, Harmony, Intensity, and Phrasing.

These two basic philosophies have influenced the design and development of all other musical aptitude tests, including the Musical Aptitude Profile⁹ (MAP) developed by Professor Edwin Gordon of the University of Iowa.

The development of MAP reflects eclecticism in regard to European and American theories of music test construction. The Gestalt influence is evident in that the battery precludes tests of auditory sensory

7. H. Wing, Standardised Test of Musical Intelligence, (Sheffield, England: City of Sheffield College, 1958).

8. J. Mainwaring, "The Assessment of Musical Ability," British Journal of Educational Psychology, 17:96, June, 1947.

9. E. Gordon, Musical Aptitude Profile, (Boston: Houghton Mifflin Company, 1965).

discrimination in favor of tests which require responses to musical configurations. On the other hand, the American philosophy of music test construction is evident in that the tests are designed to yield evaluations of relatively independent dimensions of musical aptitude. MAP consists of seven subtests: Melody, Harmony, Tempo, Meter, Phrasing, Balance, and Style.

II. STATEMENT OF THE PROBLEM

All published tests of musical aptitude, regardless of the philosophy which guided their development, have been developed primarily for use with children in grades four through twelve. No test has been extended below grade four because of the difficulty in developing valid tests for use with primary grade children. As a consequence, instruments which will evaluate musical aptitude in very young children are not available.

Concerning the importance of the early evaluation of abilities, Bruner states:

Evaluation is best looked at as a form of educational intelligence for the guidance of curriculum construction and pedagogy. The earlier in the curricula effort intelligence operations begin, the more likely are they to be of use.¹⁰

10. J. Bruner, Toward a Theory of Instruction, (Cambridge, Massachusetts: Harvard University Press, 1966) p. 163.

The significance of these statements is amplified by Bloom's assertion. He states:

. . . the first period of elementary school (grades 1 to 3) is probably the most crucial period available to the public schools for the development of general learning patterns. We are inclined to believe that this is the important growing period for academic achievement and that all subsequent learning in the school is affected and in large part determined by what the child has learned by the age of 9 or by the end of grade 3.¹¹

In line with current thinking, the writer adapted MAP for use with children six and seven years old. For the experimental test version, data bearing on validity, reliability, and practicability were of utmost importance. The specific problems of this investigation, therefore, were as follows: (1) to investigate aspects of the concurrent validity of the primary version MAP, and (2) to establish normative data for the interpretation of primary version MAP test scores earned by second and third grade children.

III. DESCRIPTION OF THE MUSICAL APTITUDE PROFILE

Tonal Imagery, Rhythm Imagery, and Musical Sensitivity are the three main musical factors measured by MAP. Two types of tests, both preference and non-preference, are

11. B. Bloom, Stability and Change in Human Characteristics, (New York: John Wiley and Sons, 1964) p. 110.

included in the test battery. The preference test, Musical Sensitivity, consists of three separate subtests: Phrasing, Balance, and Style. The two non-preference tests, Tonal Imagery and Rhythm Imagery, include subtests Melody and Harmony for the former and Tempo and Meter for the latter. The seven tests consist of musical examples composed by the test author. The performance of these examples by professional artists (Stuart Canin-violin, Charles Treger-violin, and Paul Clefsky-cello) is recorded on magnetic tape.

The tests are not concerned with historical or technical facts about music, but rather, they measure melody, harmony, rhythm, and musical sensitivity in a purely "musical way." Students are asked only to compare a selection with a musical answer and to decide if the selection and the musical answer are alike or different, exactly the same or different, or to decide which is indicative of a more musical performance. For each exercise, an "in doubt" response may be selected by the examinee, circumventing the problem of forcing students to respond to questions which they are not really capable of answering.

Eleven test scores are derived from MAP: one score for each of the seven subtests, a total score for each of the three main divisions, and a composite score

for the complete battery. Forty items (twenty pairs) of musical examples are included in each of the four non-preference subtests, and each section of the preference tests consists of thirty items of musical examples. The combined total is two hundred fifty test items.

The three main musical factors measured by the regular edition MAP are measured also in the primary version MAP. However, the primary version MAP contains only three subtests: Melody, Tempo, and Phrasing. Each of the three main divisions of MAP is represented by one of these subtests. Except for modified test titles, simplified directions, and increased time for the children to respond to items, the subtests of both the regular edition MAP and the primary version MAP are similar. The test titles for the primary version MAP were changed from Rhythm Imagery--Tempo, Tonal Imagery--Melody, and Musical Sensitivity--Phrasing to Rhythm, Melody, and Expression, respectively. It should be emphasized that item content (musical examples) for both the regular edition MAP and the primary version MAP is identical.

For the purpose of facilitating the use of the answer sheet by young children, the space for recording answers to the respective subtests is colored yellow, red, and blue. The preliminary directions for administering

the test, and particularly the recorded directions for taking the tests, refer to the subtests by name and color. Appendix A contains the simplified preliminary directions and the recorded directions; the experimental primary version answer sheet is included in Appendix B.

The three subtests of the primary version MAP are described in further detail below:¹²

Rhythm: The test consists of twenty paired musical examples (played on violin and tape recorded) in which the endings may be identical or contrasting in tempo. The subject is to indicate whether or not a change in the tempo has occurred in the repetition of the example. If no change in the tempo has occurred in the repetition of the example, the subject is asked to make a heavy mark in the oval under L(LIKE). If a change in the tempo has occurred in the repetition of the example, the subject is asked to make a heavy mark in the oval under D(DIFFERENT). If the subject is not sure whether a change of tempo has or has not occurred in the repetition of the example, he is asked to make a heavy mark in the oval under the ? mark (CANNOT DECIDE).

Melody: The test consists of twenty paired musical examples (played on violin and tape recorded), the second of which may or may not involve a melodic variation of the first. If the second musical example does not involve a melodic

12. Consult pages 7-12 of the MAP manual for descriptions of the subtests Harmony, Meter, Balance, and Style.

variation of the first, the subject is asked to make a heavy mark in the oval under L(LIKE). If the second musical example does involve a melodic variation of the first, the subject is asked to make a heavy mark in the oval under D(DIFFERENT). If the subject is not sure whether a melodic variation has or has not occurred in the repetition of the musical example, he is asked to make a heavy mark in the oval under the ? mark (CANNOT DECIDE).

Expression: The test consists of thirty paired musical examples (played on violin and tape recorded) contrasted in terms of musical expression. Such contrast may consist in changes of tone, tempo, and dynamics, or any combination of these variables. This subtest involves preference responses--that is, the subject is to indicate whether he prefers part one over part two of the paired example. If he prefers part one over part two, he is asked to make a heavy mark in the oval under 1. If he prefers part two over part one, he is asked to make a heavy mark in the oval under two. If he is not sure whether part one is better than part two, he is asked to make a heavy mark in the oval under the ? mark (CANNOT DECIDE).

Because the writer judged the Rhythm subtest to be easiest, it was placed at the beginning of the experimental primary battery. The Melody and Expression subtests were placed second and third, respectively. The total test takes one hour of administration time. The battery was recorded on three tapes so the test could be administered within the time limits of two 30-minute class periods.