

Measurement & Evaluation

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Two New Tests of Music Aptitude: *Advanced Measures of Music Audiation and Audie*

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Advanced Measures of Music Audiation

As the *Musical Aptitude Profile* was being developed from 1958 to 1965, many recorded test questions that demonstrated good item characteristics were nevertheless found to be unsuitable and had to be discarded. The reason was that they

were too difficult for students in grades four through twelve, the population for whom the test was being standardized. At that time, consideration was given to using those questions in a music aptitude test designed specifically for college and university students. The idea was abandoned, because a market survey indicated that the majority of music administrators and professors would not use such a test. They believed that they could, if they so desired, subjectively assess "musical talent" better than an objective

test. Moreover, administrators and professors were confusing music aptitude with music achievement, and they were not clear as to how they could use the results of a music aptitude test if they were available to them. The concept of the comparative

reliability and validity of their subjective judgments of music achievement with objective

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music aptitude test results appeared to be of little concern.

As a result of various factors, particularly higher education admission standards and procedures and students' individual musical differences, students' music potential is steadily becoming of more and more interest to administrators and professors alike. Persons responsible for college and university music instruction are realizing that perhaps music aptitude, the potential for achieving in music, is a more important factor for predicting future

Edwin E. Gordon, *Advanced Measures of Music Audiation*, Chicago: GIA, 1989.

Edwin E. Gordon, *Audie*, Chicago: GIA, 1989.

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success in performing and appreciating music than is current music achievement itself. Also, the need to adapt instruction to each student's individual needs as indicated through objective procedures is becoming a goal of high priority.

Given the current circumstances, the time seemed right to embark upon the development of the *Advanced Measures of Music Aptitude* (AMMA) for college and university students. Current evidence gathered suggested that college and university personnel supported the development of such a test and that they would use it if it met the following specific criteria.

1. The audiation of music, not imitation, memorization, or the discrimination of musically isolated pitches or durations, should be the integral element of the test.
2. The test should be recorded.
3. The test should be designed to be administered to a group of students or to an individual student.
4. The answer sheet should be designed for electronic scoring as well as for hand scoring.
6. Students should not have to read or write music in order to take the test.
7. Students should not need to perform vocally or instrumentally to take the test.
8. Students should not need to be familiar with the theory of music or the history of music in order to take the test.

9. All music in the test should be specially composed for the specific purposes of the test.
10. All music in the test should be performed by a professional musician.
11. The reproduction of the music on the test should be of the highest technical quality obtainable under practical conditions.
12. Students should enjoy listening to the test.
13. The test should provide students with educational

19. Students should not be forced to respond to a test question when they are uncertain of the correct answer.
20. The test should demonstrate acceptable statistical properties.

Of all the criteria requested, brevity was the most difficult to satisfy. A unique scoring procedure was developed so that the overall administration time of the *Advanced Measures of Music Audiation* takes less than 20 minutes. Nevertheless, every student receives a *Tonal* score, a *Rhythm* score, and a *Total* score. The brevity of the test notwithstanding, each of the three scores is reliable (.80 and higher). That is

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14. A variety of tonalities and meters should be included in the test questions.
15. The test should be eclectic, incorporating the best aspects of Gestalt and atomistic test theories.
16. The test should be suitable for assessing a wide variety of music aptitudes.
17. The test questions should not be arranged from "easy" to "difficult". Rather, item difficulty should vary throughout the test to stimulate and maintain student interest.
18. The types of abilities required to answer the test questions should not be so complex as to require abilities extraneous to music aptitude.

accomplished by scoring each answer sheet four times. Scores are not corrected-for-guessing. Scores are adjusted as a result of a student's confusing the tonal and rhythm dimensions of music.

The *Advanced Measures of Music Audiation* is on a cassette recording. Included on the tape are the directions for taking the test, three practice exercises, and the thirty questions that constitute the test. Each test question, which was programed on an Apple Macintosh computer and performed by a professional musician on a Yamaha DX-7 synthesizer, consists of a short musical statement followed by a short musical answer. The number of each test question is announced on the tape before the music is heard. The student is asked to decide whether the musical statement and the musical answer are the same or



different for each test question. If the musical answer is different from the musical statement, the student is asked to then decide whether the difference is a result of a tonal change or a rhythm change. There may be one or more tonal changes in a musical answer or there may be one or more rhythm changes in a musical answer. Never, however, are there both a tonal change and a rhythm change in a musical answer.

When evaluated with wisdom and judgment, test results on the *Advanced Measures of Music Audiation* may serve as an objective aid to professors' subjective judgments with regard to 1) determining every student's potential for meeting the standards outlined by a faculty and 2) adapting instruction to the individual musical needs of each student.

The *Advanced Measures of Music Audiation* was standardized in the 1988-89 school year in a carefully planned and executed program. With regard to an overview of the standardization program, a representative sample of college and university music majors and non-music majors was selected through the use of sampling procedures based upon demographic information contained in the 1986-87 Heads Music Data Summaries of the Higher Education Arts Data Service (HEADS). The report was prepared for the National Association of Schools of Music (NASM). A representative sample of 5,336 students enrolled in 54 institutions of higher education in 27 states par-

ticipated in the standardization program.

Norms for undergraduate and graduate music majors and undergraduate nonmusic majors, in addition to technical information and statistics which includes preliminary validity data, are reported in the test manual. There are ongoing predictive validity studies. The largest, a longitudinal study, was initiated in September, 1989 at Temple University. The final collection of the data will begin in May, 1990, and the results will be published early in 1990 in monograph form.

"Audie is the first objective test of music aptitude that has been designed expressly for children 3 and 4 years old."

During the course of the standardization program, the *Advanced Measures of Music Audiation* was administered to 872 high school students. The test was found to yield reliable results for students in grades 9 through 12. Since that time, more than a thousand seventh and eighth grade students have taken the test. The results look so promising that norms will soon be published for middle school students. That the same test encompasses enough variability to reliably measure the music aptitude of students as young as twelve years old and those beyond thirty years old supports the position that the test emphasizes the measurement of music aptitude rather than music achievement.

Audie

Audie is the first objective test

of music aptitude that has been designed expressly for children 3 and 4 years old. Actually, it consists of two games, a *Tonal* game and a *Rhythm* game, that encourage young children to audiate. Each game takes between 5 and 10 minutes to play. *Audie* is a character on a cassette recording that talks and sings short songs, including one special short song. The object of each game is for the child to say "yes" when *Audie* sings the special song and to say "no" when *Audie* sings another song.

The *Tonal* game is recorded on one side of the cassette and the *Rhythm* game is recorded on the other side. The directions for playing each game are recorded on both sides.

The test is used with children individually. After a child becomes familiar and comfortable with the games, and at his or her pleasure, the parent or preschool teacher marks the child's verbal answers on one of the game sheets. The child is never forced to play a game or to give answers if he or she chooses not to do so. The correct answer for each of the ten questions on each game are reinforced after the song for each question is heard.

Children need to audiate to give correct answers. Audiation is different from imitation and memorization. Audiation is the ability to hear and to **comprehend** music for which the sound is no longer present or never has been present. The results derived from *Audie* can be used to monitor a child's musical strengths and weaknesses in terms of how well he or she is continually

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learning how to audiate. Given that information, the parent and preschool teacher can expose the child to the most appropriate music environment for developing his or her musical growth.

Music aptitude is developmental until children are approximately nine years old. That is, music aptitude, which has its basis in audiation, is a product of innate capacity and early environmental music influences. The younger a child is when appropriate music experiences are accorded him or her, the greater the chances are that his or her tonal and rhythm aptitudes will develop to their highest possible levels. Tonal and rhythm aptitudes are the only two developmental music aptitudes that have thus far been identified and quantified.

Results on *Audie* assist a parent and preschool teacher in knowing when and how to encourage a child's musical growth. Parents and teachers who use *Audie* should be able to see children grow musically when the games are used in conjunction with other musical experiences.

Technical information in terms of test statistics is reported in the booklet that is included in the package that contains the cassette, pads of game sheets, and profile cards. There are no norms. Only three categories - high, average, and low - are provided. Brief suggestions, based upon the author's seven years of research and experience in teaching children as young as eighteen months old, for building a child's foundation in music are also included in the booklet.

Editors' Desk

As always, your thoughtful writing submitted for publication in the Special Research Interest Group Newsletter in Measurement and Evaluation is welcomed and appreciated.

Coming in the Summer issue: a report on *Arts Propel*, the Measurement and Evaluation SRIG session held at this past national MENC conference in Washington.

The SRIG M&E newsletter is moving to Boston University. Address all correspondence and address changes to:

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