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**An investigation of the validity of the Advanced Measures  
of Music Audiation with junior high and senior high school  
students**

**Fullen, David Lloyd, Ph.D.**

**Temple University, 1993**

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**AN INVESTIGATION OF THE VALIDITY OF THE  
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WITH JUNIOR HIGH AND SENIOR  
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**A Dissertation  
Submitted to  
the Temple University Graduate Board**

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of the Requirements for the Degree  
DOCTOR OF PHILOSOPHY**

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**by  
David L. Fullen  
January, 1993**

## ABSTRACT

# AN INVESTIGATION OF THE VALIDITY OF THE ADVANCED MEASURES OF MUSIC AUDIATION WITH JUNIOR HIGH AND SENIOR HIGH SCHOOL STUDENTS

by David L. Fullen  
Doctor of Philosophy  
Temple University, 1993

Major Advisor: Dr. Edwin E. Gordon

The purpose of this research was to investigate the extent to which the Advanced Measures of Music Audiation (AMMA) is a valid test of music aptitude for secondary school students. The two problems of the study were to investigate the predictive validity of AMMA for junior high and senior high school students and to investigate the extent to which participation in choral ensembles affects scores on AMMA.

On three occasions the investigator administered AMMA to five junior high and four senior high school choirs. The results of the first administration were used to determine predictive validity. The first and

second administrations were used to estimate retest reliability. The first and third administrations were used to determine the effects of typical music instruction on students' AMMA scores.

During the last three weeks of music instruction, students sang two melodies. Their performances were recorded and rated independently by two judges using the same three-dimensional rating scale.

Predictive validity coefficients were .25 for junior high and .24 for senior high school students. The performance means of junior high school students with high scores on AMMA were significantly higher than the means of students with low scores. The same was true for the total performance means of senior high school students.

With regard to the effects of music instruction on AMMA scores, correlations of the Total test scores on the first and third administrations of AMMA were .71 for junior high and .82 for senior high school students. The mean differences between the first and third administrations of AMMA were non-significant.

The interjudge reliabilities for the rating scale were .94 for junior high and .95 for senior high school students. Retest reliability for Total test scores on AMMA was .72 for junior high and .81 for senior high school students.

It may be concluded that AMMA accurately predicts the music achievement of individual students. It predicts less accurately the music achievement of students who have similar levels of music aptitude. Further, it may be concluded that scores on AMMA are not sensitive to music instruction.



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## CHAPTER 1

### INTRODUCTION AND REVIEW OF THE LITERATURE

#### Introduction

Music education moved from relative security in the 1950s to confusion and change in the 1960s (Colwell, 1971). In the 1970s educators continued to search for a comprehensive music learning theory. Most teacher training programs focused on musical skill development rather than on the general knowledge necessary for teachers to be acquainted with objective and standardized tests. Music teachers still have no standard curriculum and no standard measures to use in evaluating students. Music educators have not discovered the balance of good instruction growing out of good evaluation (Colwell, 1971).

Educational measurement occupies a low priority in music education, especially in choral curricula. Conversations the researcher initiated with 12 church and college choral directors revealed a lack of interest in the objective measurement of individuals' vocal performance achievement, or music aptitude. Many of the church choir directors had hired section leaders, and school choir directors had found "star" singers who were exceptionally talented. The choir directors followed a traditional technique



in which section leaders were used as model voices which others imitated (Swan, 1973). Typically, the remainder of the choir included good “fill-in” voices. The choir directors were satisfied with the information they had received at the audition and were not interested in adapting instruction to meet the individual needs of choir members. They were occupied with teaching music literature for performances.

The author believes that the responses of the 12 directors are representative of many persons who conduct both large and small performance ensembles. The urgent responsibilities of the typical choral director contribute to the neglect of measurement. Along with the preparation and performance of music literature, these responsibilities include scheduling, advertising, transportation, and fundraising.

There are educators, choral and non-choral, who have assigned a high priority to objective measurement and evaluation of students. They believe effective group instruction must meet the needs of each student. A sincere response to this commitment leads to several important questions directors must ask. How can one know students’ potential for achievement? By what means can one identify how individuals are progressing musically and maintain realistic expectations for them? How does one adapt instruction to the individual differences of students in a performance ensemble (Taggart, 1989)?

## Music Aptitude

The nature of music aptitude remains clouded by confusion (Gordon, 1988a). For the purposes of this paper, it is defined as one's potential to learn music and perform musically. For musicians, music aptitude seems to be a key to the quality of their performance and repertoire (Gordon, 1971a). Differences in music aptitude terminology point to problems in its definition. The foundation of music aptitude is audiation, the ability to hear and understand music when the sound is not physically present (Gordon, 1989a). Through audiation one gives meaning to what is heard, thinking to learn and learning to think musically. The better one can audiate, the more one can achieve in music. Gordon (1987, 1988a, 1991) identifies six stages and seven types of audiation, accounting for all musical activities. In defining audiation, Gordon (1987, 1988a) distinguishes between audiation and each of the following: notational audiation, aural imagery, aural perception, recall, inner hearing, imitation, recognition, and memorization.

Music aptitude is often confused with music achievement. The nature of stabilized music aptitude (the music aptitude of persons over nine years of age) is more clearly perceived in contrast to music achievement (Gordon, 1989a). Since the early 1970s, researchers have generally accepted the use of the terms "aptitude" as potential to learn, and "achievement" as accomplishment, what one has learned (Gordon, 1971b).

Music aptitude (one's undeveloped capacity before formal training) provides the foundation for music achievement. All do not possess the same potential for achievement (Davies, 1978; Farnsworth, 1958; Gordon,

1987; Lehman, 1968; Shuter-Dyson, 1982). One's aptitude level may be considered one's upper limit for achievement (Gordon, 1987). Culver (cited in Gordon, 1988b/1965) describes music aptitude differences as variations in learning speed and depth of understanding. Révész (1954) defines music aptitude as essential traits established through measurement. Colwell (1970) observes that achievement improves with instruction more quickly than does aptitude. The distinction between music aptitude and achievement allows for association between the two. All music aptitude tests contain elements of achievement; all music achievement tests reflect some degree of one's basic aptitude for music, but the emphasis of the tests is different (Gordon, 1989a; Shuter-Dyson, 1982; Shuter-Dyson & Gabriel, 1981).

### Music Aptitude Testing

Music aptitude tests hold practical value. Through testing one can (a) identify students who can profit most from instruction in music and who can contribute most to school music activities, (b) diagnose students' musical strengths and weaknesses, allowing instruction to be adapted to their individual musical needs, and (c) assist parents and teachers in forming realistic expectations for students' music achievement (Gordon, 1988b). Gordon (1971a, 1988a) considers identification and diagnosis major purposes for any music aptitude battery. Aptitude tests offer the best means for measuring and describing music aptitude (Gordon, 1989b).

All too often, students with high music aptitudes who have had no opportunity to achieve in music are not encouraged to take music lessons. Students' achievement may more closely match their aptitudes when they use their music aptitudes to the fullest extent possible (Gordon, 1971a).

Scores on teacher-made rating scales can document student progress, but teachers still need an instructional method such as Gordon and Woods (1985) provided to guide their instruction and maintain sequential expectations for their students. Gordon's research into music aptitude answers how one adapts instruction to the individual differences of students by using learning sequence activities (Gordon, 1988a, 1988b/1965; Jordan, 1984, 1987, 1989; Taggart, 1989). Teachers may compare subtest scores on a music aptitude test to subtest scores on a music achievement test or rating scale to identify students who may not be achieving their indicated potential, and to maintain realistic musical goals for them.

The usual process of student evaluation is subjective, time-consuming, and exhausting for the teacher, and does not consider students' dynamic natures. Typically, the teacher may spend several months evaluating students' achievement, inferring the musical needs of students and formulating plans to meet their needs.

Teachers who administer music aptitude tests can anticipate students' needs earlier in the school year and adapt instruction to their individual differences with greater efficiency. Teachers who have music aptitude test results may hold private conferences with students to interpret their musical strengths and weaknesses, allowing them to ask questions. Students may thus receive insight into persistent musicianship problems they were powerless to understand and remediate.