

A PREDICTIVE VALIDITY STUDY
OF THE
PRIMARY MEASURES OF MUSIC AUDIATION

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ABSTRACT

Two groups of kindergarten students were administered the Primary Measures of Music Audiation (PMMA) prior to beginning Suzuki violin lessons. After one semester of training, PMMA was readministered and the students' violin performances were tape-recorded and rated for tonal and rhythm achievement. The PMMA Tonal subtest was found to have high diagnostic validity. The PMMA Rhythm subtest demonstrated only a moderate degree of diagnostic validity. The PMMA Composite score was found to have high predictive validity. The data from the readministration of PMMA suggest that rigid rhythm training may have a negative effect upon the developmental rhythm aptitude of kindergarten children.

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CHAPTER I

PURPOSE OF THE STUDY

Introduction

Music psychologists historically have held different views about the nature of musical aptitude and its development in children. Seashore considered musical talent to be an inborn trait which manifests itself in early childhood.¹ He offered a theory of specifics delineating component traits. For Seashore, musical ability was an effective grouping of fundamental sensory and motor capacities which could be isolated and measured.² He believed the gifted musician to be an individual with an inherited genetic constitution that was exceptionally responsive to sound.³

Schoen differentiated between musicality (reception) and talent (production), though he supported Seashore's atomistic approach.⁴ He believed that musicality and talent were independent, with an individual potentially possessing more of one than the other. Schoen emphasized that music-

¹Carl E. Seashore, The Psychology of Musical Talent (New York: Silver Burdette, 1919).

²Carl E. Seashore, Psychology of Music (New York and London: McGraw Hill Book Company, 1938).

³Carl E. Seashore, Why We Love Music (Philadelphia: Oliver Ditson, 1941).

⁴Max Schoen, The Psychology of Music (New York: W. W. Norton and Company, 1940).

ality reflects sensitivity while talent reflects capacity. Further, he believed that the development of musical talent becomes observable from about age six.

Mursell followed a gestalt approach which came to be known as the omnibus theory.⁵ He considered musicality to be the awareness of the tonal and rhythmic configurations and the emotional responses to them. Revesz supported this holistic view but differentiated between musical aptitude and talent, considering them to be varying degrees of the same phenomenon -- talent being aptitude to a higher degree.⁶ He suggested that musical aptitude may be revealed as early as age two. Like Mursell, he saw musical behaviors as inseparably connected with the affective domain, and therefore was opposed to atomistic analyses.

Lundin followed a behavioral approach and considered musical talent to be the result of previously acquired skills.⁷ He rejects Seashore's and Schoen's explanation of inborn traits, as well as Mursell's notion of inherited mental processes. He believes that musical ability is the

⁵James Mursell, The Psychology of Music (New York: W. W. Norton and Company, 1937).

⁶Geza Revesz, Introduction to the Psychology of Music (Norman, Oklahoma: University of Oklahoma Press, 1953).

⁷Robert Lundin, An Objective Psychology of Music (New York: The Ronald Press, 1954).

result of a long process of interaction with musical stimuli. Lundin concludes that musical responses are a function of both biological potentials and acquired behaviors. Explanations of the nature of musical abilities have continued to be controversial. Schuter maintains a holistic view similar to that held by Mursell and Revesz.⁸ Zuckerkandl restated Schoen's view of separate "listening" and "doing" components.⁹ Farnsworth supports Lundin's environmental focus on a sociological basis.¹⁰ Blackling introduced ethnomusicological considerations.¹¹

Gordon has clearly differentiated between musical aptitude (capacity) and achievement (skills).¹² His Musical Aptitude Profile (MAP) incorporates aspects of both the atomistic and omnibus views.¹³ The predictive validity of that measure for students nine years old and older has been established over a period of time. The most important of these studies is a longitudinal predictive validity study

⁸Rosamund Schuter, The Psychology of Musical Aptitude (London: Methuen and Company, 1968).

⁹Victor Zuckerkandl, Man the Musician (Princeton: Princeton University Press, 1973).

¹⁰Paul R. Farnsworth, The Social Psychology of Music (Ames, Iowa: Iowa State University Press, 1959).

¹¹John Blackling, How Musical is Man? (Seattle and London: University of Washington Press, 1973).

¹²Edwin Gordon, The Psychology of Music Teaching (Englewood Cliffs, N.J.: Prentice Hall, 1971).

¹³Edwin Gordon, Musical Aptitude Profile (Boston: Houghton Mifflin, 1965).

published in 1967.¹⁴

Considerable progress has been made toward the identification of the musical aptitude of children younger than nine years of age. A primary level version of the Musical Aptitude Profile was developed by Harrington for use with second and third grade children.¹⁵ It was found, however, to have low reliability. Research by DeYarman indicates that musical aptitude does not continue to develop beyond age nine, and it may begin to stabilize as early as the kindergarten level.¹⁶ Gordon has recently developed the Primary Measures of Music Audiation (PMMA), a musical aptitude test for kindergarten and primary grade children.¹⁷ That measure represents an important step toward a more complete understanding of the nature and development of musical aptitude.

Gordon (1979) has reported the reliability and construct validity of the Primary Measures of Music

¹⁴Edwin Gordon, "A Three Year Longitudinal Predictive Validity Study of the Musical Aptitude Profile," Studies in the Psychology of Music, Vol. 5 (Iowa City: University of Iowa Press, 1967).

¹⁵Charles J. Harrington, "An Investigation of the Primary Level Musical Aptitude Profile for Use with Second and Third Grade Students," Journal of Research in Music Education 17 (1969):359-368.

¹⁶Robert DeYarman, "An Exploratory Analysis of the Development of Rhythmic and Tonal Capabilities of Kindergarten and First Grade Children," Experimental Research in the Psychology of Music: Studies in the Psychology of Music 10 (1975):1-23.

¹⁷Edwin Gordon, Primary Measures of Music Audiation (Chicago, G.I.A. Publications Inc., 1979).

Audiation in the PMMA Manual. Split-half reliabilities range between .90 and .92 for the composite scores for children in kindergarten through grade three. Test-retest reliabilities for children in the same grades range between .73 and .76. Composite scores on the Primary Measures of Music Audiation and the Musical Aptitude Profile correlate .71, corrected for attenuation. While such congruent validity is indirect, it does offer strong objective evidence of the validity of the Primary Measures of Music Audiation.

Flohr reports that teachers may expect young children to achieve significant increases in their Primary Measures of Music Audiation scores as a result of short term music instruction. He attributes this to the sensitivity of the PMMA to children's developmental aptitude.¹⁸ Norton has used the Primary Measures of Music Audiation to assess the music aptitude of young children to ascertain the interrelationships among music aptitude, IQ, and auditory conservation.¹⁹

As the use of the Primary Measures of Music Audiation increases, objective information about its predictive validity becomes more necessary. The usefulness of the Primary

¹⁸John W. Flohr, "Short-Term Music Instruction and Young Children's Developmental Music Aptitude," Journal of Research in Music Education, Vol. 29, No. 3 (1981):219-223.

¹⁹Doris Norton, "Interrelationships among Music Aptitude, IQ, and Auditory Conservation," Journal of Research in Music Education, Vol. 26, No. 4 (1980):207-217.

Measures of Music Audiation for the profession is contingent upon its ability to provide teachers with objective predictive information. The purpose of this study is to investigate the predictive validity of the Primary Measures of Music Audiation with beginning violin students at the kindergarten level who are taught with the Suzuki method.

Problems of the Study

The two problems of the study are:

1) To determine the degree to which the Tonal, Rhythm, and Composite scores on the Primary Measures of Music Audiation predict the tonal, rhythm, and overall achievement of beginning violin students at the kindergarten level.

2) To determine the effects of the training upon the developmental music aptitude of the students.

CHAPTER II

REVIEW OF RELATED STUDIES

Introduction

Very few predictive validity studies of musical aptitude measures are reported in the literature. Four studies are reviewed in this chapter. Stanton, the author of The Eastman Experiment, considered the predictive validity of Seashore's Measures of Musical Talent, but sought no measure of performance achievement with which to correlate the aptitude scores. The Royal Marine School of Music Study, reported by Wing, was designed to investigate the predictive validity of the Standardized Tests of Musical Intelligence. Achievement ratings were elicited from instructors rather than being derived from an objective measure of achievement. The Three Year Longitudinal Predictive Validity Study of the Musical Aptitude Profile, by Gordon, is an extensive and detailed study that demonstrates the overall predictive validity of the Musical Aptitude Profile. The Plymouth Meeting Study, reported by Gordon, is the only previous study designed to investigate the predictive validity of the Primary Measures of Music Audiation. It differs in significant ways from the present study.

The Eastman Experiment

The Measures of Musical Talent, by Carl E. Seashore, were administered to 285 ten year old students who were enrolled in the Eastman School of Music Preparatory Division. These students received a one-half hour weekly instrumental lesson and a one-half hour weekly musicianship class for a period of three years, after which the Measures of Musical Talent were readministered. Changes in scores between the first and second administrations of the Measures of Musical Talent were not very different. Because the amount and quality of training apparently had minimal effect upon the retest scores, it was concluded that the Measures of Musical Talent measured musical capacity (aptitude) apart from achievement.

The predictive validity of the Measures of Musical Talent was based upon the results of that study. The predictive validity, however, was not considered on the basis of the relationship of the Seashore tests to performance achievement, but rather in terms of what was called the students' talent profiles.

...the prediction is ventured that a child with high musical capacities at ten years of age will tend to have high capacities at thirteen years of age and will continue to hold his relative rank in the group during development.²⁰

²⁰Hazel Stanton, "The Measurement of Musical Talent: The Eastman Experiment," in Studies in the Psychology of Music (Iowa City: University of Iowa Press, 1935):127.

The Eastman Experiment differs from the present study in that no attempt was made to systematically report the degree to which scores on the aptitude measure predict the performance achievement of students.

The Royal Marine School of Music Study

The Wing Standardized Tests of Musical Intelligence were administered to 223 junior musicians at the Royal Marine School of Music.²¹ The students were then rated on their general musical achievement by their instructors as being average, above average, or below average. There was a positive significant correlation between the ratings of the instructors and the students' scores on the Standardized Tests of Musical Intelligence. There was a low correlation between 1) the instructors' ratings and the students' general aptitude, and 2) between the instructors' ratings and the age of the students.

The students' test scores were also compared to their success in learning to play an instrument. Of those who did well in learning to play an instrument, 1 out of 27 did poorly on the tests and 5 others were borderline. Of those who made minimal progress on their instruments, 2 of 28 were well over the borderline on the tests and 4 others were

²¹G. De C. Newton, "Selection of Junior Musicians for the Royal Marine School of Music: An Evaluation of H. D. Wing's Test," Senior Psychologist's Department, British Admiralty, 1959, reported in H. D. Wing, Tests of Musical Ability, 2nd ed. (Cambridge: Cambridge University Press, 1970):87-89.