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CERTIFICATE OF APPROVAL
AN INVESTIGATION OF THE EFFECT OF THE PROVISION
OF THE "IN DOUBT" RESPONSE ON THE VALIDITY
OF THE IOWA TESTS OF MUSIC LITERACY

This is to certify that the Ph.D. thesis of

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CHAPTER I

PURPOSE OF THE STUDY

Introduction

An important development in education has been the identification of behavioral objectives, as recently suggested by Mager.¹ After the objectives have been identified, effective and efficient means are needed to evaluate whether the desired objectives have been achieved. One method of making the necessary evaluation is through the use of standardized tests. Adequate standardized measures of achievement are available in most subject matter fields. However, standardized tests of music achievement are relatively few in number.²

A few researchers in music education, aware of the need for improved measures of music achievement, have identified specific objectives of music instruction and

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1. Robert F. Mager, Preparing Instructional Objectives (Palo Alto: Fearon Publishers, Inc., 1962).
 2. Several books contain information pertaining to music achievement tests. The most recent comprehensive source is: Paul R. Lehman, Tests and Measurements in Music (Englewood Cliffs, New Jersey: Prentice-Hall, 1968), pp. 58-69.

have constructed achievement tests based on these objectives.

Richard Colwell has designed the Music Achievement Tests,³ a battery of four tests, to determine the extent to which students are acquiring general skills which music teachers presume they are teaching. The test content is based upon the objectives of the elementary music program outlined in six leading basic series.

Edwin Gordon has specifically identified aural perception and music literacy as the main objectives of early instruction in music.⁴ He has designed a multi-level battery of music achievement tests, the Iowa Tests of Music Literacy (ITML),⁵ to measure achievement in tonal and rhythmic aural perception and in reading and writing tonal and rhythmic notation. Each of the six levels of ITML contains six subtests: Tonal Aural Perception, Reading Recognition, and Notational Understanding; and Rhythmic Aural Perception, Reading

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3. Richard Colwell, Music Achievement Tests (Chicago: Follett Publishing Company, 1965).
 4. Edwin Gordon, Psychology of Music Teaching (Englewood Cliffs, New Jersey: Prentice-Hall, 1971).
 5. Edwin Gordon, Iowa Tests of Music Literacy (Iowa City: Bureau of Educational Research and Service, Division of Extension and University Services, The University of Iowa, 1970).

Recognition, and Notational Understanding.⁶ All of the subtests are of the multiple-choice variety.

Purpose and Problem of the Study

A frequently voiced criticism of multiple-choice tests is that the students are encouraged to guess. A technique used to discourage guessing is to give students the opportunity to state frankly their lack of knowledge through the use of a "don't know" or an "in doubt" response. The "don't know" response is used wherever it is feasible in the Metropolitan Achievement Tests.⁷ The authors of the Metropolitan Achievement Tests suggest that although the "don't know" responses are not scored, a count of the "don't know" responses used provides additional information to the teacher regarding areas in which the class does not feel knowledgeable.

The "in doubt" response option is provided in all of the Aural Perception and Reading Recognition subtests

6. Edwin Gordon, Iowa Tests of Music Literacy Manual (Iowa City: The Bureau of Educational Research and Service, The University of Iowa, 1970), pp. 12-22 contain a detailed description of the content and design of the Iowa Tests of Music Literacy.

7. Walter N. Durost, et al., Metropolitan Achievement Tests (New York: Harcourt Brace Jovanovich, Inc., 1970).

of the Iowa Tests of Music Literacy. Question mark ovals are provided on the answer sheet so that the students need not guess answers. Students are instructed to mark the "in doubt" (?) response in case of genuine doubt. Gordon states that the "in doubt" response has value for the following reason:

Because every subtest consists of items of heterogeneous difficulty, it is possible that some students will periodically encounter items in each subtest which they cannot answer correctly, and therefore, they will mark the "in doubt" response as suggested on the tape recorded directions, for those items. By using this response, the student will be ready to listen to the next item which might be less difficult for him. As a consequence of this method of testing, a student should maintain a high degree of interest in taking the test.⁸

The test author makes no mention of the effect of the provision of the "in doubt" response on the validity of ITML. It would seem that Gordon believes that test results will be more valid when the "in doubt" response is provided, but he offers no data to substantiate this point of view. Therefore, the purpose of the present study was to collect objective data relevant to this issue. Specifically, the problem of this study was to investigate whether the provision of the "in doubt" response option on ITML actually increases the validity of the test.

8. Gordon, Iowa Tests of Music Literacy Manual, op. cit., p. 8.

Description of the Iowa Tests of Music Literacy

As indicated, the Iowa Tests of Music Literacy are comprised of six subtests. The subtests are divided into two main parts: Tonal Concepts and Rhythmic Concepts. Each of the main parts includes three subtests: Aural Perception, Reading Recognition, and Notational Understanding. The organizational design of ITML, including administration time, is presented in Table 1.

The complete battery of ITML consists of six levels. Each level contains corresponding subtests. The subtests, which are designed to measure parallel concepts at each level, become more complex from Level 1 through Level 6.

Each level of ITML is recorded on a separate monaural half track tape. The three Tonal Concepts subtests are recorded on side one of the tape, and the three Rhythmic Concepts subtests are recorded on side two of the tape. All of the test items are performed on the Moog Synthesizer by Professor Peter Lewis, a faculty member of the School of Music of the University of Iowa.

The school grade range for which each ITML level is specifically designed is presented in Table 2. Level 1, 2, and 3 norms are provided for elementary,

TABLE 1*

ORGANIZATION OF THE IOWA TESTS OF MUSIC LITERACY

Tests	Maximum Listening Time	Admini- stration Time
TONAL CONCEPTS		
Aural Perception (T1)	12 minutes	45 minutes
Reading Recognition (T2)	12 minutes	
Notational Understanding (T3)	12 minutes	
Total Tonal Concepts (T)	36 minutes	
RHYTHMIC CONCEPTS		
Aural Perception (R1)	10 minutes	45 minutes
Reading Recognition (R2)	10 minutes	
Notational Understanding (R3)	16 minutes	
Total Rhythmic Concepts (R)	36 minutes	

*The information provided in Table 1 was taken from the ITML Manual, p. 3.

TABLE 2*
 GRADE RANGES FOR THE IOWA TESTS OF MUSIC LITERACY

Levels	Grade Ranges
1 - 2 - 3	Elementary Grades (4, 5, & 6)
	Junior High Grades (7, 8, & 9)
	Senior High Grades (10, 11, & 12)
4 - 5 - 6	Junior High Grades (7, 8, & 9)
	Senior High Grades (10, 11, & 12)

*The information provided in Table 2 was taken from the ITML Manual, p. 3.

9. "Tonality" implies music which gives "loyalty to a tonic," as defined by Willi Apel, Harvard Dictionary of Music, 2nd ed. (Cambridge, Mass.: The Belknap Press of Harvard University Press, 1969), p. 855.

junior high, and senior high school students; Level 4, 5, and 6 norms are provided for junior high and senior high school students.

The types of tonality⁹ included in the Tonal Concepts subtests of ITML are major, minor, modal, and unusual. The test author refers to the major and harmonic minor modes as usual modes. The Dorian, Phrygian, Lydian, and Mixolydian modes, because of their less frequent use, are referred to as unusual modes. Patterns in unusual tonality bear no functional relationship to any mode and as a result, the "tonality" which they suggest is a matter of subjective opinion, according to Gordon. He refers to them as nontonal. The modes used in each level of ITML are outlined in Table 3.

The types of meter included in the Rhythmic Concepts subtests of ITML are duple, triple, mixed, and unusual. Music which moves in just duple meter, such as $\frac{2}{4}$, or in just triple meter, such as $\frac{6}{8}$, is considered to be in usual meter. Music which contains triplet figures in duple meter or duplet figures in triple meter is referred to as mixed meter. Music written in

9. "Tonality" implies music which gives "loyalty to a tonic," as defined by Willi Apel, Harvard Dictionary of Music, 2nd ed. (Cambridge, Mass.: The Belknap Press of Harvard University Press, 1969), p. 855.

TABLE 3
 MODES AND METERS COMPRISED IN EACH LEVEL OF ITML

Levels	Tonal	Rhythmic
1	Major Mode Minor Mode	Duple Meter Triple Meter
2	Major Mode Minor Mode	Duple Meter Triple Meter
3	Usual Modes Unusual Modes	Usual Meters Mixed Meter
4	Unusual Modes Nontonal	Usual Meters Unusual Meter
5	Major Mode Minor Mode	Mixed Meter Unusual Meter
6	Major Mode Minor Mode	Mixed Meter Unusual Meter

10. Complete ITML reliabilities, means, standard deviations, and standard errors of measurements are presented in the ITML Manual, pp. 100-105.

11. Vance Abbott, "A Study of the Validity of the Iowa Tests of Music Literacy," (Ph.D. thesis, The University of Iowa, 1971).

a meter such as $\frac{5}{8}$ or $\frac{7}{8}$ is classified as unusual meter. The meters used in each level of ITML are also outlined in Table 3.

The split-halves reliability coefficients of ITML, based on the scores of all the students who participated in the standardization program, were found to be generally in the .70's and low .80's for subtests, in the .80's and low .90's for total tests, and in the .90's for complete tests for all levels.¹⁰

In a study by Mohatt, students' scores on specific musical behavior measures were correlated with their corresponding test scores on all levels of ITML.¹¹ Validity coefficients ranging from .61 to .71 between composite ITML scores and overall validity criteria were reported.

10. Complete ITML reliabilities, means, standard deviations, and standard errors of measurements are presented in the ITML Manual, pp. 100-105.

11. James Mohatt, "A Study of the Validity of the Iowa Tests of Music Literacy," (Ph.D. thesis, The University of Iowa, 1971).