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1965

THE UNIVERSITY OF OKLAHOMA

GRADUATE COLLEGE

AN OBJECTIVE PERFORMANCE-RELATED MUSIC ACHIEVEMENT TEST

A DISSERTATION

SUBMITTED TO THE GRADUATE FACULTY

in partial fulfillment of the requirements for the

degree of

DOCTOR OF EDUCATION

BY

PAUL MAX MANSUR

Norman, Oklahoma

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AN OBJECTIVE PERFORMANCE-RELATED MUSIC ACHIEVEMENT TEST

CHAPTER I

THE PROBLEM

Introduction

Group recognition and evaluation of instrumental music performers is a largely unexplored field of study[1]. Achievement evaluations are made but are individual in character rather than being group administered. The usual technique of performance evaluation is that of an individual audition. Auditions can vary from the extremely informal and brief check for wrong notes in a school band to the lengthy and comprehensive graduate recital of a university student.

In public schools the music director holds frequent auditions or try-outs. These auditions determine the student's rank within a section. They are used as a partial means of determining grades, choosing soloists, selection for special honors, and for assignment to ensembles. Upon attaining a fairly high degree of competence the student performer finds that auditions are the means of selecting

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[1] James A. Hoffren, "A Test of Musical Expression," Council for Research in Music Education Bulletin No. 2., (University of Illinois and Illinois State Department of Education, Winter, 1964), p. 33.

students for membership in district, regional, festival, clinic, and All-State honor groups[1]. Part and sectional assignments in these groups are sometimes made by further auditions.

If the college freshman elects to continue his music performance he finds that membership and assignment in the college bands, choirs, orchestras, glee clubs, and opera casts are determined by audition. If he seeks a music scholarship an audition will be required. If a music major, auditions will be required as final examinations each semester of applied music study. There will also be periodic proficiency examinations by a committee of faculty members as well as the faculty evaluations which follow recital appearances[2]. If he enters the field of professional music he must continue to audition in order to obtain and hold a position as a performer.

The value and effectiveness of the audition is not in question although there are some drawbacks to its use which will be noted later. Its efficacy is generally accepted by schools of music as has been indicated. Watkins has established that of all music tests in achievement "the individual performance tests alone have exhibited reliabilities high enough to differentiate individuals."[3] An individual performance test, of course, is an audition.

The shortcomings in the use of auditions stem from its very nature and not from its application and use. The audition is and

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[1]Letter to Oklahoma band directors from All-State Chairman of Oklahoma Music Educators Association. (Mimeographed, Nov. 26, 1963).

[2]Bulletin, School of Music, Indiana University, 1963-64, p. 35, ff.

[3]John G. Watkins, Objective Measurement of Instrumental Performance ("Contributions to Education, No. 860," Teachers College, Columbia University, New York: Bureau of Publications, 1942), p. 82.

can be used only on an individual basis--one performer at a time to be heard by one or more auditors. The briefest possible audition, to be reasonably valid, must be five to ten minutes in length in order to weigh tone quality, knowledge of keys and scales, technical facility, sight reading ability, musical expression, and rhythmic comprehension.

Summarily, the overwhelming problem in aural evaluation is one of time allocation for this purpose on the part of both student and teacher. One hypothetical case will illustrate this large consumption of time. In a moderately sized high school the band may number sixty members. If the director scheduled ten-minute auditions to evaluate each student it would require ten hours to hear every student in the band. If the auditions were scheduled during the regular band period and this rehearsal period were a full sixty minutes long it would require two weeks of class time to complete the auditions. Each student would have nine hours and fifty minutes of time unoccupied during these ten class periods. Obviously, this would be an impractical means of evaluation. In practice the director makes his evaluations during brief fragments of time allotted during rehearsals, and before and after school hours while coaching solos and ensembles or directing sectional rehearsals.

An illustration from the writer's experience will serve also to show the impracticality of using comprehensive auditions in a particular situation. While a graduate assistant with the University of Oklahoma Bands the writer was charged with the supervision and direction of the Air Force ROTC Band. This group met only once per week during the ROTC drill period. It was imperative that this band

begin to function without delay and begin learning the procedure and routine for a military parade and review. At the beginning of the school year instruments and music had to be assigned, part assignments made, and marching and playing rehearsals begun immediately. With only sixteen rehearsals per semester, barring cancellation of drill periods due to inclement weather, there was never sufficient time to audition the sixty to seventy-five members and make accurate part assignments. Fortunately, some of the band members were also members of the University Band. Their audition ratings were used to place these students on key parts through the various sections of the ROTC band. The ROTC students were assigned to parts after completing a simple questionnaire about their prior experience. Cursory auditions of perhaps thirty seconds duration were sometimes used to supplement the indications of the questionnaire.

The selection of outstanding instrumentalists for membership in the All-State band and orchestra of Oklahoma also utilizes the audition technique. The procedure for selection, in brief, is this: school music directors nominate students for auditions held to select personnel for these groups. These nominations include a brief summary of the student's achievements and a recommendation by the director. The names submitted are screened by the Selection Committee of the Oklahoma Music Educators Association. Approximately twice as many students as will be accepted for the All-State groups are invited by the Selection Committee to audition for membership. Audition centers are set up in five cities across the state and on a specified date the students report to the centers for audition. Each student performs a prepared piece of

music supplied to him by the selection committee at the time of his invitation. During the audition the student must perform at sight another brief composition, also supplied by the committee. All performers of like instruments play exactly the same music. These auditions are tape recorded and the student is identified upon the tape only by a number. At a later date all the tapes are assembled and edited to place the auditions in numerical order. They are then heard by the selection committee. The audition performances, identified only by number, are ranked by the committee and a cut-off point is made when the designated instrumentation of the band and orchestra is complete. The secretary of the association then refers to the code key of the audition numbers and notifies the selected students by mail.

Although this procedure is somewhat involved it is undertaken to eliminate as much subjectivity as possible from the selection process and ensure that final selection and part assignment be based on performance only. Age, grade, school size, and such other information are unknown to the auditors. Complete objectivity of audition evaluation is achieved by using a coded number identification system.

A subjective weakness in the above procedure may now be self-evident. This occurs at the point of nomination by the local school director and again when the decisions are made concerning whom shall be invited to audition. When writing an evaluation of a student's ability in a resume or summary form there are wide variations in both style and length. The files of the Oklahoma Music Educators Association contain recommendations varying from terse one-sentence comments to florid praise encompassing several paragraphs. The committee must

in turn make its decisions about invitations based on these widely varying recommendations. These two phases of the selection process are inherently subjective.[1]

Need for a Test

Several immediate areas of application suggest themselves for utilization of an objective group test that is directly related to audition-supported proof of music performance achievement. If such a test or instrument were extant it could be used experimentally in the areas noted below. Other applications may be suggested through its utilization in specific situations.

1) Such a test could be used in the public schools. It would supplement regular auditions and provide an immediate source of group evaluations for guidance and improved teaching.

2) It could be used by colleges in screening candidates who wish to audition for performance scholarships. In addition to a very substantial time-saving for the faculty an objective test score may stimulate good students to try for scholarships who may have had doubts about their achievement level.

3) The colleges could use such a test in evaluating incoming personnel among large performance groups and as a group guidance instrument. College utilization would primarily involve testing high school senior admission candidates and recent high school graduates.

4) In any case where time is the pressing need it may be used to make preliminary group, sectional, and part assignments.

5) Such an instrument could effectively and economically be used as a screening device to eliminate or negate subjective weaknesses in the selection process for the All-State band and orchestra.

It should be noted here that the suppositions are made about an instrument that is related or positively correlated with demonstrated

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[1] The writer feels it would serve no useful purpose to quote from specific recommendations. Interested and authorized personnel may contact the executive secretary of O.M.E.A. concerning these files.

music performance achievement. A group test can not directly measure performance achievement. A direct performance evaluation is, by definition, an audition, hence, impossible to administer simultaneously to a group.

Finally, if such an objective group test were available it in no wise should be construed to be a replacement for the individual audition technique. Its use in proper context would be to supplement auditions, make evaluations more meaningful, and enhance the teaching-learning process.

Statement of the Problem

The problem in this study is to construct, administer, and validate an objective type group instrument for the evaluation of public school wind instrumentalist performance achievement.

Hypothesis

It was hypothesized that there is no significant difference between the means of a performance-related achievement test administered to students nominated and accepted for membership in All-State Band or Orchestra and to students nominated but not accepted for membership.

Procedures

The study design included an exploratory pilot study, the development of a preliminary form of the test, and development of the final form of the test administered to the All-State Band and Orchestra candidates. Data analysis included estimates of validity, reliability, and a complete test item analysis. The biserial r correlation of test results with selection for membership in All-State Band and Orchestra by

audition, an independent outside criterion, was used to determine validity and as a basis for the *t* test of significance between means.

Limitations

The study was limited to a sample of high school students who had been invited to audition for membership in the Oklahoma All-State Band and Orchestra by the All-State Selection Committee of the Oklahoma Music Educators Association. All students in the sample were wind instrumentalists.

Definitions

All-State Band and Orchestra--the band and orchestra divisions of the Oklahoma All-State Music Festival, an annual honor convocation of the most proficient student musicians available from the high schools of Oklahoma.

Audition--an individual musical performance evaluation made by one or more auditors.

Performance-related test--an objectively scored group instrument that measures factors related to musical performance but does not require an actual performance evaluation.

Wind instrumentalist--a performer upon any standard orchestral or band brass wind or wood wind instrument.

CHAPTER II

SURVEY OF MUSIC TESTING

The Nature of Music

Recognition of the basic components of music is necessary to explain the difficulties involved in music evaluation caused by its intrinsically rather nebulous nature. Music, in simplest possible terms, consists of sound, movement, and structuralisms. Sunderman[1] provides this definition and points out these components are inextricably woven together, yet they particularly govern the nature of music being at one time an aesthetic art, an intellectual discipline, and an exceedingly technical craft. In essence we can then define a music performance as an application of technically accurate skills to an intellectually conceived form presented for aesthetic satisfaction in an aural medium.

This complexity of form and its temporal means of expression make testing and evaluation in music extremely difficult. Evaluation of music and music performance frequently involves highly subjective value-judgments. These value-judgments are necessarily subjective

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[1] L. F. Sunderman, "Philosophical Concepts," Music Education in Action, ed. Archie N. Jones (Boston, Mass.: Allyn and Bacon, Inc., 1960), p. 5.

because music is an art form, a non-verbal form of aural communication, and hence subjective in nature. Personal and socially acquired tastes profoundly affect value-judgments concerned with music and its performance and thus inhibit the success of instruments designed for musical evaluations. This is evidenced by the comparatively low validity and reliability indices reported for many of the published music tests. Super[1] indicates further that music tests are not as useful in vocational guidance as are the standardized tests in other areas. This subjectivity of taste concerning music may be effectively illustrated by the old adage, One man's meat is another man's poison, if paraphrased to: One man's music is another man's cacophony.

Predictive Testing

By far the largest body of works related to musical evaluations is in talent and ability testing. These tests attempt to measure the inherent ability of the subject and predict the probability of success or failure in music study. The empirical studies of Dr. Carl E. Seashore[2] may be considered basic to virtually all tests of this type. His work was psychologically oriented and may be regarded as atomistic in its nature. He identified and labeled twenty-five separate musical senses, actions, and feelings.[3]

In general, talent tests attempt to measure aural sensitivity

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[1]Donald E. Super, Appraising Vocational Fitness (New York: Harper and Bros., 1949), pp. 319-329.

[2]Carl E. Seashore, The Psychology of Musical Talent (New York: Silver, Burdett and Co., 1919).

[3]Ibid., pp. 7, 8.

to sounds. Specifically, the student being tested makes value-judgments about sound intensity, pitch, timbre, duration, and repetition. The sounds presented may be recorded as in the Seashore Measures of Musical Talents[1] and the Wheeler Musical Aptitude Test.[2] The former is on disc recordings; the latter is a tape recording. Others, such as the Whistler-Thorpe Musical Aptitude Test,[3] require the test materials to be presented from a piano or other instrument.

One fairly important difference between various talent tests is the choice of sounds for discrimination. Both the Seashore and Wheeler tests, for example, use pure fundamental tones without any overtones or harmonics. Those using the piano or orchestral instruments present more normal musical sounds with their accompanying overtone structure.

Categorically, all predictive talent tests are remarkably similar in basic construction. They present sounds and patterns in sound to the subjects being tested who must make value-judgments about these sounds based on their aural perception. Talent tests also are similar in purpose which is to identify innate talent and predict the probability of success in future musical achievement. A statement of purpose by the eminent British authority, Dr. Herbert D. Wing, will serve to illustrate this function of talent testing. "To pick out musically bright children at about the age of transfer to the secondary schools in order to give

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[1]Carl E. Seashore, Don Lewis, and Joseph G. Saetveit, Manual, Seashore Measures of Musical Talents (New York: The Psychological Corporation, Revised 1956).

[2]Ronald W. Wheeler, Jr., "A Study in the Measurement of Musical Aptitude" (unpublished Ed.D. dissertation, University of Oklahoma, 1959).

[3]Harvey S. Whistler and Luis P. Thorpe, Musical Aptitude Test (Hollywood: California Test Bureau, 1950).

them the opportunity . . . of coaching in an orchestral instrument."[1]

Enumeration and consideration of many more predictive talent tests could be undertaken here but the recent work of Pinkerton[2] makes this completely unnecessary. He has adequately summarized the current usage of talent tests in public schools.

Music Achievement Testing

As was noted in Chapter I, above, performance achievement testing consists largely of auditions with inherent subjectivity. Efforts to reduce this subjectivity have resulted in a number of achievement tests being devised in recent years. These objective measures of musical achievement fall into two primary classifications: 1) Objectively scored tests of verbalized material and symbols of music, and 2) Objectively scored tests of performance. The latter group may be subdivided further into: a) group tests in which the subjects evaluate performances, and b) individual performance tests evaluated by the administrator.

Several conclusions reached by Watkins in 1942 are yet largely valid today and merit inclusion here.

> More work has been done in devising ability tests than in developing achievement tests.
>
> In other fields ability tests have been validated against actual achievement, while in music only indirect measures of achievement have been available. This places the validation of the supposed ability measures on a subjective and unreliable basis.
>
> A few achievement tests in music have been developed. These are

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[1]Herbert D. Wing, "A Revision of the Wing Musical Aptitude Test," Journal of Research in Music Education, X, No. 1, (Spring, 1962) p. 39.

[2]Frank W. Pinkerton, "Talent Tests and Their Application to the Public School Instrumental Music Program," Ibid. XI, No. 1, (Spring, 1963), pp. 75-80.

> of two types: (1) paper and pencil tests designed to measure knowledge of musical symbols, (2) individual performance tests.
>
> The individual performance tests alone have exhibited reliabilities high enough to differentiate individuals. The group paper and pencil tests have been found to be more highly correlated with general mental ability as measured by intelligence tests than with any of the present-day ability tests.[1]

This void in achievement testing still exists although there have been some notable developments since the above study. Before taking up these developments for consideration it should be noted that the Watkins study is essentially a refinement of the audition technique. He devised a graded series of musical phrases to be performed at sight by wind instrumentalists. These "sight performances" were graded by an auditor using musical measures as units performed correctly or incorrectly. Even if many errors were committed in a single measure it was still scored as a single incorrect unit. Subjective bias in scoring was largely eliminated in this manner: "In the expression errors subjectivity is avoided by making the fact of response, and not the degree of response, the criterion."[2] While this practice raises the reliability index and enhances the scale's objectivity, it reduces the value-judgment to one of technical accuracy rather than complete musicality.

A progress report concerning a study now under way by Kenneth U. Gutsch[3] was very recently published. Financed by a federal grant, this project is also based, like Watkins' study, on sight reading.

---

[1] Objective Measurement of Instrumental Performance, p. 82.

[2] Watkins, Ibid., p. 48.

[3] Kenneth Urial Gutsch, "One Approach Toward the Development of an Individual Test for Assessing One Aspect of Instrumental Music Achievement," Council for Research in Music Education Bulletin No. 2, pp. 1 - 5.

The author, of the University of Southern Mississippi, seems to feel that further investigation of individual performance evaluation is fully warranted. The federal grant in support of the study would indicate considerable agreement with this premise exists.

An extremely interesting development in achievement testing has been the transfer of the value-judgment to the subjects being tested rather than being made by the auditor in the case of private auditions. In this technique musical performances are presented to the subjects being tested. As in talent testing these performances may be live or recorded. In the Aliferis Music Achievement Test[1] the materials involving melody, harmony, and rhythm are played on the piano and the students being tested select the proper musical notation based on what is heard. A recorded edition is also available.

A test devised by White[2] is similar to the Aliferis test but is tape recorded and does not permit live performance. It contains sixty musical items, thirty-seven on pitch and twenty-three on rhythm. The students select the correct notation from four examples provided on the test paper.

Another test has quite recently been developed which also uses recorded performances but the nature of the choices is quite different. This test presents several recorded passages from which

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[1] James Aliferis, Aliferis Achievement Test Manual, College Entrance Level (Minneapolis: University of Minnesota Press, 1954).

[2] Adolph Peter White, "The Construction and Validation of a Group Test in Music Reading for Intermediate Grades," (unpublished Ph.D. dissertation, University of Minnesota, 1963).

the subjects choose the most expressive performance. The author of this test, Dr. James A. Hoffren, used independent adjudicators of professional competency in validating his criteria. "Trained musicians manifested a significant consensus of opinion in standards of expressive performance."[1]

Hoffren's study should be considered highly meritorious for its significantly objective approach to a subjective problem area in urgent need of much more research. He offers a particularly stimulating analysis of the reasons underlying this great void in performance evaluation research:

> The obvious explanation for the lack of research in this area of expression tests is the difficulty of the task, since expression is such a subjective, nebulous facet of performance. These difficulties might be briefly enumerated. First, measuring these capabilities is difficult because the expressive elements are often personal, introspective, and subjective. Second, aesthetic qualities resist verbalization, and this may explain why expression is often taught by imitation where the student directly imitates the teacher's performance. Third, musical performance resists attempts at segmented analysis; the whole appears to be more than the sum of its parts--the separated elements are no longer musical. Fourth, music is apprehended in a time sequence, negating any attempt to "freeze" any one of its facets for more detailed analysis. A fifth reason for the lack of tests in this area is the inadequacy of the printed notation; expression is difficult to notate. Sixth, the lack of an absolute standard of beauty results in a lack of comparable quantitative methods of measuring the expressive process itself. Finally, music tests are especially sensitive to chance errors of measurements. Momentary lapses of attention are of no significance in dealing with visual materials, whereas the pace is arbitrarily determined for the subject in an aural music test.[2]

The group paper and pencil achievement tests such as mentioned

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[1]James A. Hoffren, "A Test of Musical Expression," Council for Research in Music Education Bulletin No. 2, p. 33.

[2]Ibid., p. 33.

by Watkins[1] above shall be considered very briefly. Their success is in measuring technical knowledge and understanding. Their failures are in regard to performance evaluation. As noted earlier they are more highly correlated with general mental ability than with musical ability.[2] The well-known "Graduate Record Examination" in music is this type of test. Norms are published annually for graduating college seniors but there is no indication that the test measures performance achievement. It is, essentially, a test in musicology, an intellectual discipline, and not a test of intrinsic musical values related to performance achievement. Larson suggests it would more properly be called an "Advanced Test in Musicology" because of its emphasis on the scholarly factors of music study.[3]

The California "Diagnostic Tests of Achievement in Music" is designed for use in public schools. Of ten sections, nine deal with printed notation and only one, the tenth section, is concerned with song recognition. Its value in measuring achievement is highly questionable as it primarily measures intellectual functions.[4]

Summary

The subjective and aesthetic qualities of music are inhibiting

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[1] Objective Measurement of Instrumental Performance, p. 82.

[2] Ibid.

[3] William S. Larson, Review of "Graduate Record Examinations Advanced Tests: Music," The Fifth Mental Measurements Yearbook, ed. Oscar K. Buros (Highland Park, N.J.: The Gryphon Press, 1959), p. 383.

[4] M. Lela Kotick and T. L. Torgerson, Diagnostic Tests of Achievement in Music (Hollywood; California Test Bureau, 1950).

factors affecting the success of musical evaluation techniques. By far the largest field of investigation has been in predictive testing. A number of predictive ability tests have been developed which have rather high reliability coefficients but validity coefficients generally are somewhat lower.

Musical achievement testing has not been investigated as thoroughly as musical talent and ability testing. Group paper and pencil tests have not been effectively validated with performance achievement although new techniques introduced very recently appear quite promising. Auditions and individual performance tests are in quite general use and appear to be the most satisfactory method of evaluating performance achievement yet developed. Individual performance testing requires a great amount of time for its administration and frequently suffers from excess subjectivity. It may thus be safely concluded from the literature and from current practice in musical evaluation that group performance achievement testing is a largely unexplored field.

CHAPTER III

DEVELOPMENT OF THE TEST

Procedure

Construction of the test began in the fall of 1960 while the writer was a graduate assistant with the University of Oklahoma Bands. Problems encountered in auditioning bandsmen suggested practical usages for an objective group performance instrument. The particular requirements and organization of the University Bands were well suited for a pilot study to investigate a trial test form.

The principal advantage lay in the fact that all students accepted for membership in the University Bands were required to audition. Each audition was scored on a mimeographed check sheet and retained in the permanent files. Each bandsman had demonstrated his performance proficiency, aptitude, and interest by auditioning and enrolling in the University Band. It was decided to construct an instrument designed to measure skills in achievement apart from performance but with the assumption that test scores would correlate positively with audition performance ratings.

An analysis of factors contributive to success in musical performance achievement was attempted. These were factors related to learning which assist a performer and contribute to his success but are not completely within the realm of subjective evaluation. If the

learning area was considered largely subjective but certain aspects of it could be evaluated objectively it was not eliminated.

The first area selected was knowledge and understanding of musical terms. Technically, a performer must understand terminology in order to perform effectively. The performance would be evaluated primarily in a subjective way but would include the consideration of objectively discrete qualities. This may be illustrated by the Watkins[1] scoring technique noted earlier. If at a given point in music the expression, piu mosso, is encountered the performer must speed up slightly to inject more motion. The quality of this acceleration is not under consideration; rather, the fact of acceleration at a given point must be demonstrated. Ignorance of the term's meaning and its proper application would ultimately be reflected in performance by maintaining the same speed or by slowing down.

The second area considered contributive to performance success was experience and familiarity with much music literature. It was felt that extensive familiarity with music is essential to the development of performance proficiency. Although a performance must be evaluated subjectively, the fact of familiarity with music literature can be demonstrated and measured objectively.

The third field of learning selected was musical notation. This area of knowledge is nearly always evaluated only by an audition performance. In effect, the performance is rated and not the understanding of notation. As performance is literally impossible without comprehension

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[1] Objective Measurement of Instrumental Performance, p. 48.

of symbols and notation, (except by mimicry), it was decided to attempt to measure these skills objectively apart from an actual performance. No other learning areas were considered applicable or necessary for the construction of this test.

It was decided to use a completely objective form to facilitate speed of administration and ease of scoring. This eliminated the possibility of using short answers or simple recall items. It was felt that university bandsmen selected for the trial administration could easily discriminate between a simple right answer and even a cleverly contrived wrong answer. For this reason, and also to discourage guessing, the alternative choice style of test item was eliminated from consideration. A complete use of multiple choice items was decided upon in order to use many plausible distractors. This style of test construction was considered more suitable for measuring understandings as well as knowledge.

Test items relative to these three areas of learning were constructed based on the specific skills indicated in the table of specifications found in Table No. 1 below. The left hand column

TABLE 1

TABLE OF SPECIFICATIONS

Student Achievements	Areas of Learning		
	Terms	Literature	Notation
Knowledges	X	X	X
Understandings	X		X
Application of Skills			X

lists the skills necessary for performance. The three columns to the right indicate the musical materials to be incorporated in the test as they pertain to achievement.

A test of fifty items was constructed with four subdivisions. One section dealt only with musical terms and definitions. Two parts of the test were related to music literature; one emphasizing the names of composers and the other their compositions. The fourth section contains a brief excerpt from an original condensed band score.

The validity of a music test is often quite difficult to confirm, establish, or refute due to music's aesthetic nature. In order to provide inherent content validity appropriate to the material two criteria were used. First, only terms which are in common usage along with their definitions as found in a musical glossary[1] were used. Secondly, only well-known composers and their compositions were listed. All items, names, and terms were checked in reference works for popular consumption as well as in the technical works such as Groves'.[2] The novel band score may be considered an exception; however, standard terms are used in describing and interpreting it.

It must be noted here that all questions had a clearly right answer except those relative to the novel band score. In this part the student is to examine the score, analyze it to the best of his ability, and then select what appears to be the most logical answers as they pertain to performance.

---

[1] "Glossary of Music Terms," School of Music, University of Oklahoma (mimeographed, no date).

[2] Groves' Dictionary of Music and Musicians, fifth ed., Eric Blom, editor, (London: Macmillan and Co., Ltd., 1954).

The Pilot Study

The University of Oklahoma Bands consist primarily of two distinct organizations. The Symphonic Band is a select group with limited instrumentation and membership. The Concert Band is unlimited and serves as a training and feeder organization for the Symphonic Band. The Concert Band is normally made up primarily of freshman students functioning at a performance level equivalent to many public high school bands.

An appropriate opportunity arose to administer the pilot form of the test to the Concert Band during a class period in which some members of the Symphonic Band were also performing with the Concert Band. The test was given to this group in a single administration. The test papers of all percussionists were eliminated from consideration and several more eliminated from overlarge sections to provide a sample proportionate to the band's normal instrumentation.

The test was scored and an item analysis made using the upper and lower quartiles. The test proved a little too difficult with a Difficulty P of 43 %. The mean for all discrimination ratings was computed at .258. Three items showed a negative discrimination and six had no power of discrimination. The reliability correlation for a sample of 36 tests was computed using the chance halves technique corrected by the Brown-Spearman prophecy formula. An r of .64 was obtained which is considered moderately effective for group guidance and evaluation.[1] The standard deviation for the test was 5.3 raw

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[1]Super, Appraising Vocational Fitness, pp. 319-329.

score points with a standard error of measurement of 1.8. This form of the test, entitled "Music Achievement Test," may be found in Appendix A.

An attempt to correlate the scores with audition ratings was unsuccessful. No satisfactory method was devised to quantify the check sheet ratings. Numerical values were often misleading and did not agree with performance audition rankings. The problem in quantification seems to lie in subdivided categories contained in the check sheet and a necessity for weighting certain abilities evaluated by the adjudicator.

Several observations about the pilot test results must be reported even though not statistically supported. Some students with rather low test scores had received excellent audition ratings. Conversely, the reverse was also true; some with high test scores were rated low in the audition. This was the exception as most scores seemed to match the audition ratings rather well when both results were ranked. Ranking of audition results was rather subjective as a numerical quantification was unsuccessful, as noted above.

It was felt that Sections A, B, and C measured only knowledge of terminology and of music literature. This knowledge, as measured by this test, does not appear to correlate directly with performance achievement. An interested non-performer could easily be possessed of sufficient knowledge to make a high score. These sections measure a function of intelligence rather than performance-related skills; thus, they suffer from the same weakness in construction and application as do other paper and pencil achievement tests of this type. Therefore, this type of construction was rejected as being inadequate for the development of a performance-related test. No further usage

of this category of test item was attempted in developing the new evaluation instrument.

The most stimulating results of the pilot study were noted in Section D, which utilized the novel band score. As this section contained only ten items it was too brief for separate and conclusive statistical treatment. The entire band staff concurred, however, in the opinion that results in this section were more consistent with audition ratings than were the other three sections. Several features of this section of the test were noted as promising guides for further test development. The particular attributes of this style test are enumerated as follows:

1) The material requires the student to silently read the music as if he were actually engaged in performance.

2) Answer choices can be graded as to relative suitability. An absolute right answer is not essential as the student may choose the answer that seems to be the most plausible or effective.

3) Inferences and deductions about the questions can only be based on the musical example provided and by the direct application of personal skills and knowledges to the music.

4) The use of original music prohibits the possibility that some might be familiar with the phrase as might happen if standard musical literature were used.

5) The format would permit development as a group test with its subsequent timesaving advantages over individual auditions.

Development of a New Test

A new test was then begun using these guides to construction. All possible answer choices were to necessitate judgements by the student about tempo, articulation, dynamics, phrasing, style, rhythm, or tonality. Selection of the proper answer would be determined by a deductive infer-

ence from the actual notation of a complete musical phrase.

No attempt was made to measure knowledge of musical terms. Test items were constructed so that a basic understanding of terminology would be required in order to select the most appropriate answer. The primary emphasis on all items was directly related to some aspect of performance skill. Performance skill is, in effect, the ability of one to read, comprehend, and interpret musical notation through acquired skills. Music reading and comprehension bear an integral relationship to and with performance. Mursell emphasizes the importance of reading music as follows: "Music reading is not a separate, segregated stunt, or skill, or knack. It is applied musical understanding. To read music and to understand music are two aspects of the same process."[1] (emphasis Mursell's.)

The condensed band score from the preliminary test was retained. Four brief melodies were selected for additional test items. All are original and unpublished and therefore not previously known to any possible testee. In addition, four novel performance situations were devised, one of which also used notation. In order to use the deductive inference technique more effectively it was decided to use alternate choice items completely. Each was prepared as a complete statement in sentence form. This technique forces the student to accept or reject every choice after due consideration.

This test, in tentative form, was evaluated by three professors in the University of Oklahoma School of Music. Following this evaluation

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[1] James L. Mursell, Music Education Principles and Programs. (Morristown, N. J.: Silver Burdett Co., 1956), p. 140.

the test was reduced in size to 126 items from the total of over 150 items. This form of the test was organized into two major divisions with five subdivisions in Section I and four subdivisions in Section II. It was entitled the "Wind Instrumentalist Inventory Scale" as it was limited to use by wind instrumentalists. The word "scale" was used to allay the fears of students who feel threatened by the word "test." "Inventory" suggests the purpose of the test as being a summary rating of performance skills.

To test the reliability of this instrument it was administered on February 24, 1962, to the Oklahoma All-State Band. This group had been selected in a manner similar to that described above in Chapter I. Tests of six percussionists were discarded and two students did not hand in completed tests. This left one hundred tests to be scored and evaluated.

The key for grading the tests was prepared by the writer in conjunction with five professors in the University of Oklahoma School of Music. A tally of all test answers was made after scoring with this key. A second key was prepared based on this tally and the tests were rescored. The tally was also used for making an item analysis.

A correlation index between Sections I and II was computed first. An r of -.03 was found indicating no relationship between the musical notation section and the items in the section of novel situations. There was no other indication of correlation within Section II or of correlation with any measured or ranked factor. Section II was then dropped from consideration in all further data treatment and analysis.

Section I of the test showed an internal consistency index between

the odd and even halves of $r_{12} = .56$. A correlation of .46 was obtained between the tally key and the original key. This figure is a validity index with an outside criterion of professional adjudication.

Item analysis revealed the test's power of discrimination was rather low although this was expected with such a highly selected group. Only six of the eighty items in Section I showed a negative power of discrimination and two had no power of discrimination.

Two unsuccessful efforts to validate and extend these findings by a less restricted administration were made. The first attempt involved a plan to test all band seniors in a random representative sample of 26 high schools. This test administration was carried out through the mails but a return of less than ten per cent forced abandonment of the plan.

The second effort was delayed until the 1962-63 school year following the selection of the 1963 All-State groups. It was hoped that an excellent return would provide sufficient data to validate the 1962 findings and complete the present study. Test materials were sent to the band director in every high school which had one or more students accepted for audition by the All-State Band Selection Committee. Two hundred forty-five students were sent tests, through their band directors, and one hundred forty-seven were administered and returned. Although tests were returned from some seventy-five per cent of the ninety-six participating schools, they amounted to only sixty per cent of the number of students who auditioned.

Although this was a fairly large return it was felt that the results were inadequate to complete the study but more than ample to

validate the 1962 findings. These tests were scored twice using the 1962 keys and a correlation computed. This r of .64 is a validity coefficient with an external criterion, the pattern of response of the 1962 All-State Band members.

For several reasons it was decided to revise the test. All the test booklets still contained Section II which was no longer being used. Six test items still had a negative discrimination and others seemed quite weak as indicated in the item analysis, and needed revision. The test did not conform to the field patterns appropriate to usage of IBM machine scoring techniques. Finally, the desired sample of students selected to audition for All-State membership would not be available again until the next school year of 1963-64.

The basic format of Section I was retained in the revised test. Section II was, of course, eliminated. The same four melodies and the condensed band score were retained. Eleven test items were eliminated, six new items were added, and forty-four were slightly revised in wording. This form of the test was fixed at seventy-five items in order to utilize machine scoring answer sheets more effectively. Tests using IBM answer sheets are normally constructed with items in multiples of fifteen as each scoring field contains fifteen test numbers.

The title of "Wind Instrumentalist Inventory Scale" was retained for the new form. Hereafter it will be referred to as Form II and the 1962 test will be referred to as Form I. Form I and Form II may be found in Appendix B and Appendix C respectively.

CHAPTER IV

ADMINISTRATION OF THE TEST TO THE 1964 ALL-STATE CANDIDATES

Procedure

Revision and mimeographing of Form II of the "Wind Instrumentalist Inventory Scale" was completed in the fall of 1963. The Selection Committee of the Oklahoma Music Educators Association completed its planning for the 1964 All-State Band and Orchestra in November. Lists of students selected to audition were prepared for mailing in late November. The Selection Committee approved the writer's plan to test all candidates for All-State at the time of audition. A mimeographed letter describing the procedure and purpose of the test was included with the selected list and audition schedule mailed to each instrumental music director in the one hundred six participating schools.

Regional auditions were held on Dec. 7, 1963, in five cities--Norman, Durant, Tulsa, Enid, and Lawton. A sufficient number of test booklets, IBM answer sheets, electrographic pencils, and test manuals were sent to each audition center for all wind instrumentalists being auditioned. Personal friends had been asked to supervise the testing in each center except Norman where the writer administered the test. A virtually complete return was obtained from Durant, Lawton, Enid, and Norman. The test was not administered in Tulsa because of a shortage

of facilities and personnel to administer the test.

Two hundred forty-six completed tests were obtained from three hundred fifty students scheduled to audition. One hundred twelve of the two hundred forty-six students were selected for membership in the All-State Band and Orchestra. This amounts to more than seventy-eight per cent of all the wind instrumentalists in these two groups. This figure is somewhat less than had been hoped for but is sufficiently large to be representative of the population and provide adequate data for statistical treatment.

The key for Form II was developed as the revision of the test took place. As noted earlier only six new items were added and eleven were eliminated. Other changes were relatively minor and were undertaken to strengthen some ambiguous statements or to require more thought before choosing an answer.

All test blanks were checked visually for heavy black answers and clean erasures, then scored on an IBM test scoring machine. No questions were weighted and no correction formula was used. Raw scores were simply the number right. Test scores were checked for accuracy with pre-scored answer sheets at periodic intervals. A "Rights plus Wrongs" check was made on each test while in the machine. All papers that did not check at seventy-five items were inspected and scored with an overlay visual key.

After grading the tests they were then transcribed to IBM punch cards. The first three digits on these cards were used as the identification number. The last two digits recorded the total raw score. The intervening seventy-five digits were used to record the

seventy-five test items as correct or incorrect. A "1" indicated a correct answer, a space an incorrect answer, and an asterisk the unattempted items. The full set of two hundred forty-six cards was inspected visually and punches counted to ensure that each card was correct and the indicated score was in agreement with the number of punches.

A second set of IBM cards was prepared containing all available personal information about each candidate. This information falls into several categories and is presented in Tables 4,5,6, and 7.

A chance-halves key was also prepared on the odd and even numbered items of the test in order to obtain a reliability index of internal consistency. Item 1 was ignored and not counted in order to make the two halves of equal length.

Forty-nine students had also been administered Form I of the test during the 1962-63 school year. These scores were compared with the scores on Form II to obtain an indication of the degree of equivalence between the two forms.

Statistical Data

The full set of IBM cards was printed out on an IBM Accounting Machine to provide a full visual check and control on the collected data. The cards were run through a sorting machine to obtain the reported totals for all items. Separate totals, where needed, were obtained by using separate card sorts for those students selected for All-State membership and for those who auditioned but were not selected for band or orchestra by the audition committee.

As indicated in Table 2, the highest score for both groups

TABLE 2

1964 ALL-STATE CANDIDATES FREQUENCY DISTRIBUTION AND CENTILE RANK

Raw Score	Frequency	Cumulative Frequency	All-State Frequency	Unselected Frequency	Centile Rank
63	1	246	1	0	99
62	2	245	2	0	99
61	1	243	0	1	99
60	1	242	1	0	98
59	6	241	4	2	97
58	5	235	4	1	95
57	4	230	3	1	93
56	8	226	6	2	90
55	10	218	5	5	87
54	12	208	6	6	82
53	10	196	7	3	78
52	7	186	4	3	74
51	12	179	8	4	70
50	18	167	10	8	64
49	12	149	6	6	58
48	17	137	7	10	52
47	10	120	6	4	47
46	20	110	9	11	41
45	16	90	6	10	33
44	9	74	1	8	28
42	22	65	6	16	22
42	8	43	2	6	16
41	10	35	6	4	12
40	6	25	0	6	9
39	5	19	0	5	7
38	2	14	1	1	5
37	3	12	0	3	4
36	5	9	1	4	3
35	1	4	0	1	1
34	1	3	0	1	1
33	2	2	0	2	1

$Mean_X$	= 48	$Mean_A$	= 50	$Mean_B$	= 46
$Median_X$	= 48	$Median_A$	= 50.5	$Median_B$	= 46.5
$Mode_X$	= 43	$Mode_A$	= 50	$Mode_B$	= 43
Reliability r_{12}	=.62	Validity $r_{bis.}$	=.42	Validity $r_{pbis.}$	=.34
σ_X	= 6.07	σ_A	= 5.59	σ_B	= 5.85

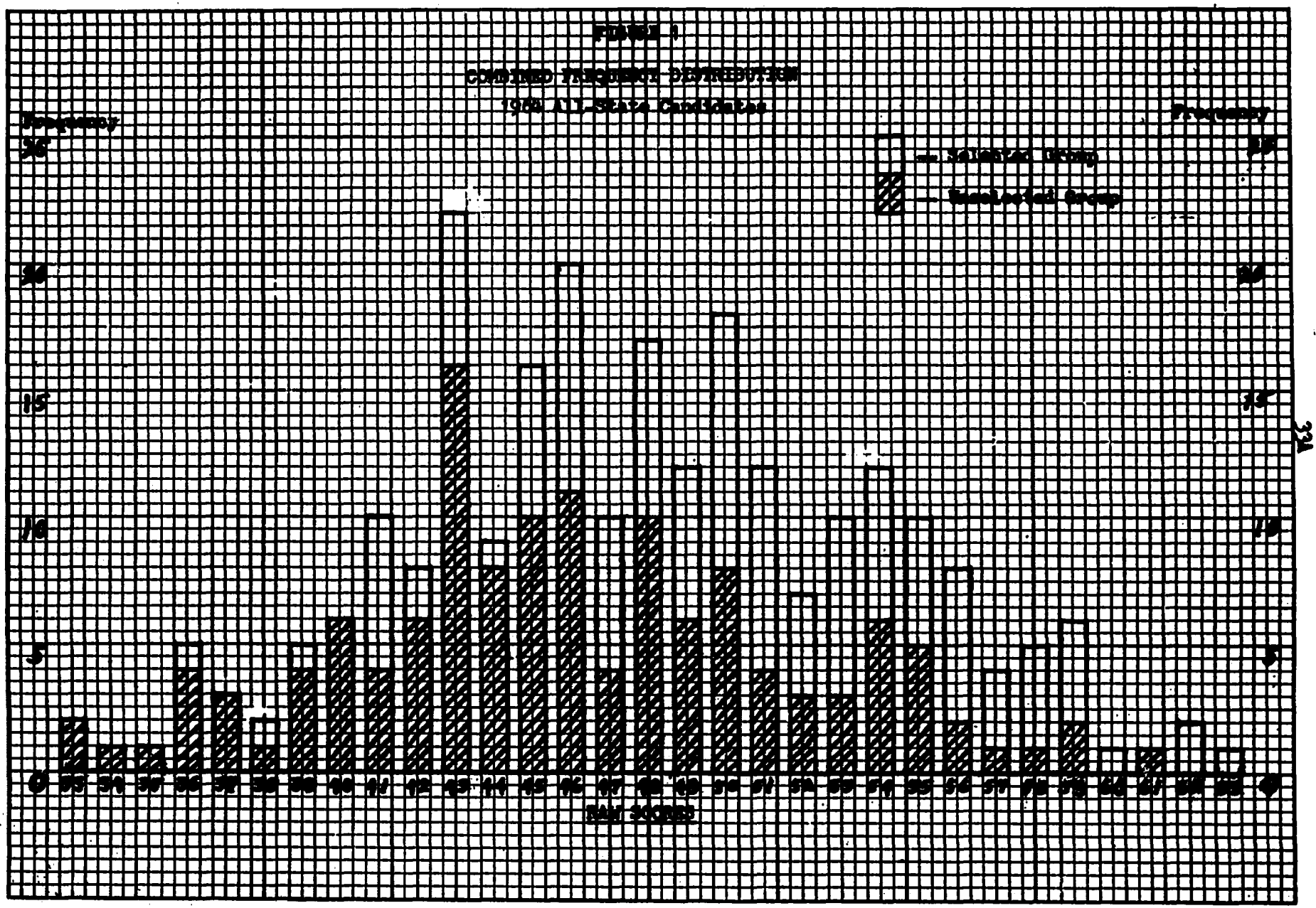
Standard Error of Measurement (S.E.$_M$), S.E.$_M$ = 3.79

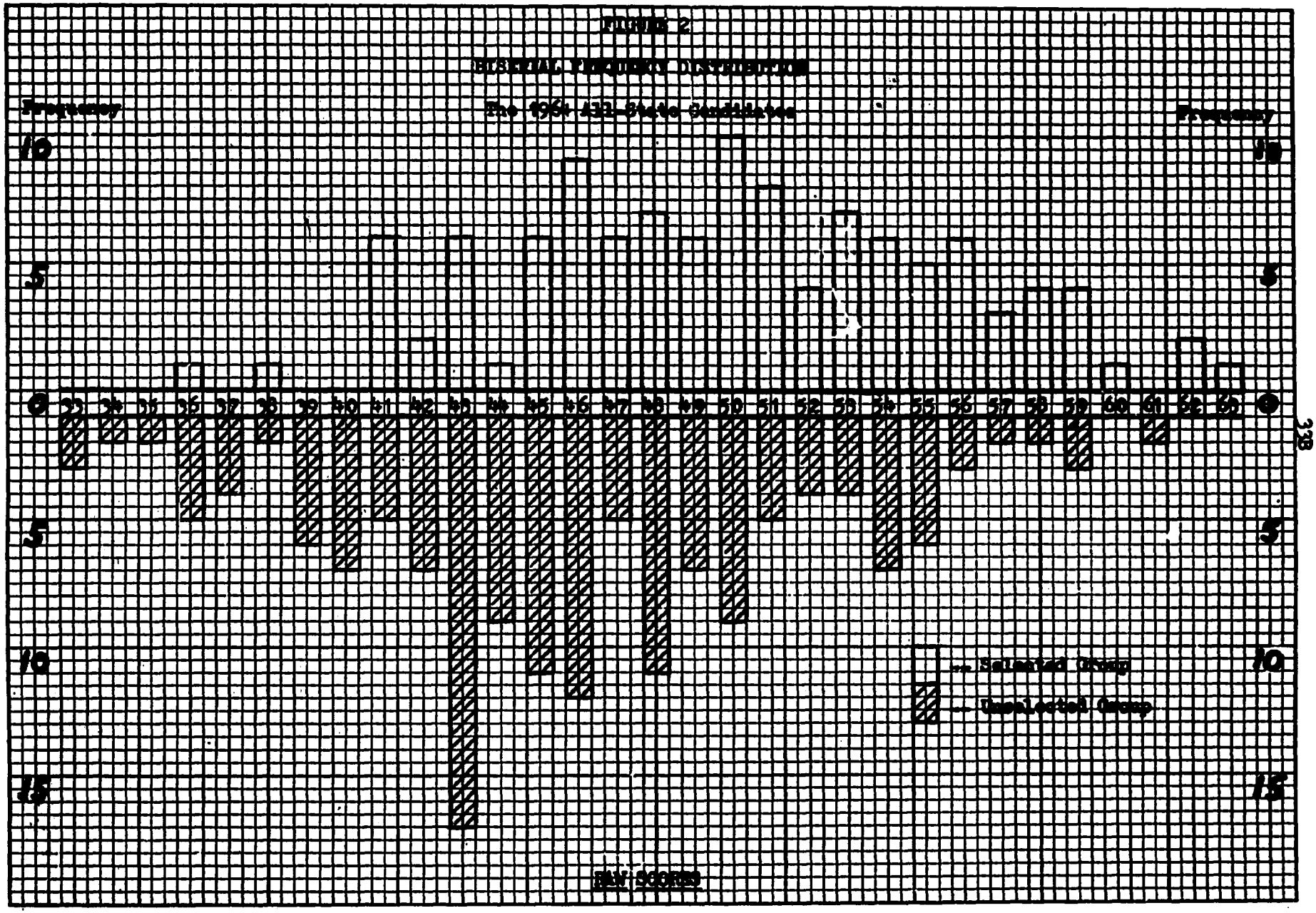
was 63 and the lowest was 33 giving a range of 30. The range of the All-State group was 27 and that of the non-selected group was 28. The full test mean and median coincided at 48 but the mode of the full distribution was at 43 or five scores below the mean. The selected group mean and mode coincide at a score of 50. The unselected group mean was at 46 with the mode at 43.

Examination of the combined frequency distribution shown in Figure 1 will show the distribution approaches a normal curve but has a positive skewness. The selected group has a negative skewness in opposition to a considerable skewness in a positive direction by the unselected group. The two distributions may be compared in the biserial frequency distribution illustrated in Figure 2.

The reliability index of internal consistency for the full test was computed at $\underline{r} = .617$ which is rounded to .62. This is the chance-halves correlation corrected by the Brown-Spearman prophecy formula. The index of .62 is a slight improvement over Form I which had an index of $\underline{r} = .56$.

Two biserial correlations were computed. The first index was computed with the assumption the two groups were approximately normal in distribution and the scores were continuous and rectilinear. The formula for this correlation is: $r_{bis.} = \frac{M_p - M_q}{\sigma_t}\left(\frac{pq}{u}\right)$ where M_p is the mean of the selected group, M_q is the mean of the unselected group, $\underline{p}$ and $\underline{q}$ are the respective percentages of the total number of students in each group, σ_t is the standard deviation of the total group, and $\underline{u}$ is the height of the ordinate separating the two percentages in a normal distribution. The computed $r_{bis.} = .42$.


FIGURE 1
COMBINED FREQUENCY DISTRIBUTION
1980 All-State Candidates
Frequency
Frequency
= Selected Group
= Nonselected Group
NAI SCORE


FIGURE 2
SERIAL FREQUENCY DISTRIBUTION
The 1964 432 State Candidates
Frequency
Frequency
10
5
5
10
15
... Selected Group
— Unselected Group
RAW SCORES

The second biserial correlation was computed with an alternate assumption that All-State selection is a discrete dichotomous factor. This type of correlation is known as a point biserial r and is computed with this formula: $r_{pbis.} = \frac{M_p - M_q}{\sigma_t} (\sqrt{pq})$. Again, M_p and M_q are the means of the All-State and unselected groups, respectively. Sigma$_t$ is the standard deviation of the total group. The letter p represents the percentage of the total sample selected for All-State membership and q is the percentage of the total that was not selected for All-State membership. The computed $r_{pbis.} = .34$.

The biserial correlations are the heart of this study as they are product-moment correlations between two variables, the test scores and All-State audition results. As such, they are to be interpreted in the same manner as other product-moment correlations. The figures obtained indicate a positive relationship between the two variables. As the audition selection process was completely independent from the testing process it may be used as an outside criterion. This makes the biserial r correlation an indication of the test's validity. In combination with the reliability r of .62, it may be concluded the test has real value for group guidance and placement evaluation. The extent of the test's value and its accuracy will be noted later after considering evaluation of data by significance tests.

Significance Tests

A test of significance is necessary to determine whether the observed difference between the selected and the non-selected groups is a real difference or whether the difference might be due to chance.

The two groups may be considered independent samples as they are not matched in any way and the performance of any individual in either group had no effect on the performance of any individual in the other group. Under these circumstances a t test for significance of the difference between means of independent groups is appropriate. This test for significance assumes a normal distribution but considerable departure from normality does not invalidate the test.[1] As the two frequency distributions approach normality this test for significance between means is quite satisfactory.

Two formulas were used to compute the t as a precaution against possible errors. They are as follows:

$$t = \frac{M_1 - M_2}{\sqrt{\sigma M_1^2 + \sigma M_2^2}} \qquad \text{or} \qquad t = \frac{M_1 - M_2}{\sqrt{\left(\frac{\Sigma x^2 + \Sigma y^2}{N_1 + N_2 - 2}\right)\left(\frac{N_1 + N_2}{N_1 N_2}\right)}}.$$

M_1 and M_2 are the means of the two groups, σM_1^2 and σM_2^2 under the radical is the standard error of the difference between means, Σx^2 and Σy^2 are sums of the deviations squared, and N_1 and N_2 are the total number in each group. The first formula resulted in a t of 5.842; the second formula yielded a t of 5.837, a negligible difference.

A Table of t is entered at ∞ degrees of freedom as the degrees of freedom = $(N_1 + N_2 - 2) = (112 + 134 - 2) = 244$. The largest finite number for degrees of freedom in the table is 120. The value of t at the .01 level of confidence is 2.576. The computed t far exceeds this value, therefore the null hypothesis must be rejected. It must be

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[1] Robert H. Koenker, Simplified Statistics (Bloomington, Illinois: McKnight and McKnight Publishing Co., 1961), p. 87.

concluded that the difference between the two groups, as measured by the Form II test, did not occur by chance. Considerable weight is added to this conclusion by the fact that the computed t exceeds the 3.291 value of t required for a .001 level of significance.

Further testing for significance was confined to individual item analysis. For this purpose the Phi coefficient is used as it is designed to evaluate the relationship between two dichotomous variables. The two variables in this study are selection for All-State membership and obtaining the correct answer for each one of the seventy-five test items. The Phi coefficient bears the relationship to Chi square of $\chi^2 = N\phi^2$ as it is computed from the cells of a two by two table. The degree of freedom is therefore always one.

As seventy-five Phi coefficients were computed they are incorporated in the Item Analysis Table, Table 3, immediately below. The table includes an ordinary item analysis of the full test using the high twenty-five per cent of the test papers and the low twenty-five per cent. The tests were placed in ranked order and the high and low groups taken at sixty-two in each group. These are noted in the table as "Low" and "High."

The "P" column contains the percentage of correct answers while the "D" column is the index of discrimination. Column "A" contains the percentage of correct answers among all the selected group and column "B" contains the percentage of correct answers among the unselected group. The Phi column contains the Phi coefficient. The remaining two columns contain the equivalent Chi square values and the level of significance from a table of Chi square. Since the test consists in its entirety of alternate choice items, all levels of significance from .10 to .01 are

TABLE 3

ITEM ANALYSIS TABLE

Item	Low	High	P (%)	D	A (%)	B (%)	ϕ	χ^2	Sig.
1	47	61	89	.23	95.5	86.4	.155	5.881	.02
2	50	61	91	.18	95.5	84.3	.149	5.41	.02
3	48	58	95	.16	81.9	83.5	-.021	.098	-
4	47	58	86	.18	81.9	81.9	.00	.00	-
5	26	54	67	.46	80.1	57.1	.245	14.054	.01
6	31	48	65	.28	69.3	58.9	.108	2.695	.10
7	35	58	76	.38	87.1	71.6	.198	9.234	.01
8	53	59	92	.10	97.3	88.8	.163	6.64	.01
9	15	22	32	.11	29.4	31.3	-.020	.098	-
10	41	42	68	.01	68.7	64.1	.048	.566	-
11	21	34	62	.21	49.1	42.1	.070	1.200	-
12	34	33	55	-.01	54.0	54.1	.007	.012	-
13	16	29	37	.21	33.9	31.3	.028	.172	-
14	27	39	54	.21	47.3	55.2	-.079	1.476	-
15	52	59	91	.11	94.6	89.5	.111	2.952	.10
16	55	59	94	.07	98.2	91.7	.143	4.92	.05
17	44	53	78	.15	86.4	78.3	.105	2.695	-
18	30	30	48	.00	46.4	50.7	-.043	.455	-
19	36	54	75	.29	82.7	67.1	.177	7.564	.01
20	35	47	67	.20	75.0	63.4	.153	5.658	.02
21	43	55	80	.20	85.7	73.8	.145	5.166	.05
22	36	45	66	.16	66.9	60.4	.067	1.104	-
23	36	51	71	.25	71.1	71.6	-.005	.006	-
24	30	47	63	.28	79.2	59.7	.210	10.78	.01
25	45	57	84	.20	87.5	82.8	.065	.984	-
26	36	52	72	.26	75.4	76.1	-.008	.014	-
27	32	51	68	.31	80.3	66.4	.156	5.904	.02
28	30	51	66	.34	77.6	65.6	.132	4.182	.05
29	33	52	70	.31	80.3	70.1	.117	3.444	.10

TABLE 3--Continued

Item	Low	High	P (%)	D	A (%)	B (%)	ϕ	χ^2	Sig.
30	33	52	70	.31	81.2	67.1	.159	6.150	.02
31	50	53	84	.05	86.6	79.1	.098	2.360	-
32	43	50	76	.11	83	70.8	.142	4.960	.05
33	24	31	45	.11	37.5	49.2	-.118	3.444	.10
34	32	48	66	.26	75.0	59.7	.161	6.292	.02
35	53	57	90	.07	91.9	86.5	.086	1.82	-
36	33	53	70	.33	78.5	67.9	.119	3.444	.10
37	45	56	83	.18	85.7	85.0	.009	.020	-
38	53	57	90	.07	89.2	84.3	.072	1.279	-
39	23	41	52	.30	58.9	47.0	.105	2.706	.10
40	13	14	22	.01	16.2	26.8	-.128	3.993	.05
41	10	13	19	.05	14.2	23.1	-.112	3.075	.10
42	11	30	34	.31	35.7	26.8	.095	2.239	-
43	13	30	35	.28	37.5	30.5	.073	1.304	-
44	27	30	46	.05	36.6	44.3	-.079	1.509	-
45	23	37	49	.23	44.1	48.5	-.044	.463	-
46	42	53	78	.18	83.4	74.6	.107	2.795	.10
47	42	55	80	.21	77.6	74.6	.036	.310	-
48	33	50	68	.28	72.3	61.9	.110	2.955	.10
49	27	48	62	.34	64.8	54.5	.105	2.711	.10
50	16	44	49	.46	49.0	46.2	.028	.191	-
51	25	24	40	-.01	43.7	38.0	.058	.816	-
52	19	43	51	.39	54.9	39.5	.154	5.788	.02
53	32	58	74	.43	82.7	74.6	.098	2.329	-
54	29	54	68	.41	81.9	67.9	.160	6.288	.02
55	18	13	25	-.08	26.7	26.1	.005	.007	-
56	40	57	79	.28	83.9	74.4	.116	3.274	.10
57	29	45	61	.26	62.1	46.2	.159	6.163	.02
58	30	36	54	.10	45.4	53.7	-.082	1.653	-
59	31	44	61	.21	57.7	54.1	.037	.324	-
60	34	58	75	.39	84.5	67.9	.192	9.013	.01

TABLE 3--Continued

Item	Low	High	P (%)	D	A (%)	B (%)	ϕ	χ^2	Sig.
61	32	46	64	.23	66.9	53.7	.134	4.437	.05
62	38	37	61	-.01	64.5	69.1	-.049	.583	-
63	22	32	43	.15	42.7	45.8	-.031	.240	-
64	21	40	50	.31	53.2	44.7	.084	1.710	-
65	17	36	43	.31	43.9	44.3	-.004	.004	-
66	34	48	67	.23	72.8	72.9	.000	.000	-
67	27	41	56	.23	58.7	55.2	.035	.298	-
68	34	49	68	.25	66.9	66.6	.003	.002	-
69	46	58	85	.20	90.9	81.8	.129	4.050	.05
70	39	53	75	.23	78.5	70.4	.093	2.097	-
71	33	45	64	.20	65.7	60.6	.053	.688	-
72	23	41	52	.30	59.0	50.0	.091	2.012	-
73	23	29	43	.10	45.9	38.6	.076	1.320	-
74	40	48	72	.13	75.8	64.3	.125	3.788	.10
75	41	53	77	.20	77.6	75.1	.029	.221	-

considered important enough for inclusion in the table.

Several variations in discrimination will be noted by comparing the percentages of correct answers in the two full groups with the upper and lower quartile index of discrimination. These differences are caused by the second and third quartiles which are not considered in the index of discrimination but their effect appears in the percentages of correct answers in the selected and non-selected groups listed in columns "A" and "B" of Table 3.

Four test items have a negative discrimination but over the full distribution fifteen items have a negative Phi coefficient. Two

of the negative Phi coefficients are significant at the .10 level and one is significant at the .05 level of confidence. Sixty test items have positive Phi coefficients and thirty-four of these are significant at the .10 level or better. It would appear that a reversal of the key for the three negatively significant items would slightly enhance the test's power of discrimination.

With the present key some eighty per cent of the test items show some positive discrimination between the selected and unselected groups. This explains quite well why the full test is significant at the .01 level but has a somewhat low reliability index and biserial correlation. The direction of discrimination is positive and extensive throughout the test but the degree of discrimination is not so sharply defined.

Forty-nine of the two hundred forty-six students who had been tested had also been administered Form I of the test as candidates for the 1963 All-State groups. A comparison of the scores on Form I and Form II by these students was undertaken to obtain an indication of test equivalence and stability. As this subsample is rather small, and possibly not representative, the results are not considered positively conclusive. They are included here only to support the pattern of positive correlation and discrimination previously established.

A reliability coefficient between the two sets of scores was computed at $r_{xy} = .375$. This may be considered a coefficient of equivalence between the two forms. The 1963 tests were also compared to the key or pattern of response of the 1962 All-State Band. This correlation was computed at $r = .64$ which indicates that Form I was moderately stable and reasonably valid. Both of these correlations

are significant at the .01 level of significance with N = 49, as taken from a table of values of the correlation coefficient for different levels of significance.[1]

Any firm statistical inference regarding the full administration of Form II based on these forty-nine cases would be largely indefensible. It may be concluded only that the pattern of response of these forty-nine students was quite similar to that of the 1962 All-State Band pattern of response. In turn, the extent of test equivalence between Form I and Form II is positive, but only moderate in degree, as indicated by an uncontrolled sample of forty-nine cases. No further conclusion can be warranted or implied from such a sample of a small and uncontrolled size. To reiterate, these correlations are included because the 1963 administration of Form I was a part of the preliminary study and the results agree with and support the statistical significance figures established for the administration of Form II.

Additional Descriptive Data

The students who auditioned and were tested on Dec. 7, 1963, represented seventy-six Oklahoma high schools. The number of students who were auditioned ranged from one to twenty-one per school. These schools were classified according to enrollment size in agreement with the O.M.E.A. system of classification for music contests. Table 4 illustrates the number of students per classification and their audition results.

School size seems to have some effect upon performance

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[1]Koenker, Ibid., p. 145.

TABLE 4

SCHOOL SIZE AND AUDITION RESULTS

School Classification	Number of Applicants	Not Selected	All-State Band	All-State Orchestra
AA	90	39	36	15
A	43	22	15	6
BB	27	15	10	2
B	34	18	16	0
C	13	11	2	0
DD	29	20	9	0
D	10	9	1	0

(Key to Classification code: AA = 1,000 up; A = 750 - 999; BB = 500 - 749; B = 300 - 499; C = 150 - 299; DD = 85 - 149; D = 84 down. All of these classifications are based on average daily attendance.)

proficiency as many more students were invited to audition from Class AA than from any other classification. The rate of selection by audition does not appear to favor any class except that no orchestra personnel were selected from the four smaller classifications. This is to be expected as the smaller schools do not have orchestras; only bands. Class C and D schools placed only three of twenty-three applicants in the All-State Band. All other classes had approximately half of their applicants selected to All-State.

Successful audition also seems to hinge to some degree upon age, grade in school, and years of playing experience. Students in the upper two grades were predominant in both the selected and unselected groups. The factor of age is illustrated in Table 5.

All candidates were in the tenth, eleventh, and twelfth grades. Students in the ninth grade are eligible to audition if they attend a

TABLE 5

AGE OF ALL-STATE CANDIDATES

Age of Candidates	All-State Band and Orchestra	Unselected Candidates
15	16	23
16	38	48
17	54	49
18	4	13
Unknown	0	2

four-year or six-year high school and if grade nine is included in the compilation of average daily attendance for classification purposes. None were invited to audition by the selection committee. Students in the twelfth grade dominate both groups, as shown in Table 6.

TABLE 6

GRADE IN SCHOOL OF ALL-STATE CANDIDATES

Grade in School	All-State Band and Orchestra	Unselected Candidates
10	18	24
11	39	48
12	55	60
Unknown	0	2

Less consistency is seen in the years of playing experience among the applicants. Some schools begin instrumental instruction as early as the fourth grade. Others withhold organized instruction in instrumental music until the junior high school level. Considerable

variance in experience among the candidates reflects these differences in administrative policies from school to school.

TABLE 7

YEARS OF EXPERIENCE OF ALL-STATE CANDIDATES

Years of Experience	All-State Band and Orchestra	Unselected Candidates
2	1	3
3	2	5
4	15	14
5	20	27
6	28	34
7	24	27
8	15	21
9	7	3

The data in Tables 4, 5, 6, and 7 completes the presentation of pertinent material describing the 1964 All-State candidates. This type of information lends itself well to the Chi square test for the significance of difference. Chi square was computed for every observed frequency in the four tables. No value of Chi square was significant at the .01 level of confidence. Chi square is significant at the .02 level for students from Class AA high schools. Also in Table 4 the observed frequency for Class D high school students is significant at the .05 level, corrected by the Yates formula for small cases. No other difference in any other table was significant.

The significance of the difference for the Class AA schools may be largely explained by the greater incidence of orchestras in large high schools. This was noted in the text above when Table 4

was presented. The value of Chi square as a test of significance is not reliable when either the observed or the expected frequencies is less than five.[1] Even when corrected by the Yates formula the Chi square for Class D is inconclusive as all the frequencies are quite low. It may be concluded, therefore, that age, grade, school size, and years of experience did not contribute significantly to the observed differences between the selected and unselected groups.

Summary

The Wind Instrumentalist Inventory Scale, Form II, was administered on Dec. 7, 1963, to two hundred forty-six candidates for the 1964 Oklahoma All-State Band and Orchestra. These candidates were chosen through the nominating and selection process required by the Selection Committee of the Oklahoma Music Educators Association. Final selection to the All-State Band and the All-State Orchestra was made by anonymous tape recorded performance auditions.

Statistical treatment included the computation of a chance-halves reliability index of internal consistency, biserial correlations between the means of the selected and unselected groups, the t test for significance of the difference between means, a complete item analysis using the Phi coefficient, and the Chi square test for significance of the difference in frequencies of categorized physical characteristics. Correlation coefficients range from fair to moderate but all are significant at the .01 level of confidence. Physical characteristics are not significant between the groups.

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[1] Koenker, Ibid., p. 122.

CHAPTER V

CONCLUSIONS

Effectiveness of the Test

The present study was undertaken upon an extremely homogeneous sample. Every candidate had been evaluated and recommended to the All-State Selection Committee by his instrumental music instructor. Each was considered competent enough to meet the performance requirements necessary for membership in the All-State Band or Orchestra. This evaluation by the local director had also been concurred in by the Selection Committee as manifested in the invitation to audition. The auditioning musicians possibly represent the top three or four percent of all wind instrumentalists in high schools across the state of Oklahoma.

Because of this homogeneity of the sample obtained through the rigid screening and selection procedure the null hypothesis of no significant difference was fully justified. Yet, the hypothesis was not supported and had to be rejected. The demonstrated statistical significance suggests that the test would possibly be more effective and the measured differences more significant in a heterogeneous sample of more divergent performance achievement levels.

A study of the data in Table 2 will indicate the effectiveness of the test as a screening device. A comparison of the frequencies of

selection to All-State with Centile rank show that the higher the numerical score the greater the probability of selection. Note that Q_1, the lower Quartile, falls between C 22 and C 28. The cumulative frequency is 65, of whom only 16 were selected to All-State membership. Q_4 begins with a raw score of 53 and contains 60 scores. A total of 39 students in this quartile were selected. Q_3 contains 35 selected candidates and Q_2 contains 22 selected candidates. The rate of selection in Q_4 is 65% while in Q_1 the rate of selection is 25%.

Another indication of the test's effectiveness is by comparing the distribution to a normal curve. Some 62% of the All-State group had scores above the mean rather than the usual 50% to be found in a normal distribution. In terms of the Standard Deviation nearly 16% of a normal distribution will be minus one S.D. or below. Only eight cases, comprising 7% of the selected group, had numerical scores more than one S.D. below the mean. By extending downward only one more raw score frequency and taking a score of 41 as a lower limit, only two selected students would fall outside this range. In practical terms this means that over 98% of those students eventually selected to the All-State groups scored 41 or higher on Form II of the "Wind Instrumentalist Inventory Scale."

As was suggested in Chapter I, above, a most important projected utilization of the test would be in screening large groups of students to identify competent musical performers. The results of the study indicate that the test can be rather effective as a screening and selection device. With the sample identified in this study a cut-off score of 41 raw score points would have ensured the audition of 98% of those who were finally selected to All-State while reducing the number

of auditions by ten per cent. At ten minutes per audition the reduction by twenty-five students represents a possible time saving of four hours and ten minutes for the original taping, less tape editing, and again as much less time for the auditioning committee.

This is, however, not the primary purpose of the test. It is theorized that the subjective process of student nomination by instrumental music instructors and the state Selection Committee is liable to bias and subjective errors in judgment. Errors in selection and nomination have been made in the past and some schools, perhaps as a consequence to errors of the past, do not participate in the All-State activities. Excellent performers in these schools are denied the opportunity of participation and recognition that accompanies All-State selection.

Members of the Selection Committee and a number of other state instrumental music instructors have expressed to the writer considerable desire to obtain additional participation so that the All-State groups might be more representative and that many more students be afforded the opportunity to audition. By eliminating or negating one subjective selection process it may be assumed that additional participation may be encouraged and secured.

A projected plan for utilization by the Oklahoma Music Educators Association Selection Committee is outlined briefly as follows. First, the local instructors would simply select the students they wish to nominate. No subjective evaluation or letter of recommendation would be required. All students nominated would then be administered the "Wind Instrumentalist Inventory Scale," excepting percussionists and

string players. The details of administration would be planned and supervised by the state Selection Committee. The tests would be scored by machine, Standard Deviation computed, and a cut-off score determined at or near one S.D. below the mean. All students scoring above this point would then be invited to audition and the procedure for selection thenceforth would be identical to the present system of selection.

The ultimate result of initiating such a screening procedure should not be a reduction in the number of auditions but an increase in the number of students selected for the audition procedure. The increase should result in two ways. First, the elimination of bias and subjective components in selection would stimulate greater participation by state high schools. Secondly, the test has been shown to be definitely performance-related and performance achievement alone would be the criterion of audition nomination.

Critical Evaluation

Although the direction of discrimination is distinct, in a positive direction, and significant at the .01 level of confidence, the degree of discrimination manifested by the .42 biserial correlation is perhaps not as high as might be desired. However, considering the extremely homogeneous nature of the sample tested, it must be concluded that the results of the study are most satisfactory. A much higher correlation would be expected from a test administration using a very heterogeneous sample.

A thorough study of the item analysis data found in Table 3 suggests that further revision of some test items should be undertaken.

Over a period of time the revisions would result in a complete elimination of negatively discriminating items and some increase in the level of difficulty.

Additional forms of the test need to be constructed. Some alterations in format should be investigated as possible means of improving the test. The style of answer could be modified from the forced choice of "agreement" or "disagreement" to graded choices permitting gradations in degree of agreement or disagreement. This technique has been valuable in constructing scales evaluating interest patterns and psychological patterns of response of highly selected and homogeneous groups of people. The vocational interest tests by Kuder[1] and Strong[2] are excellent examples of this type test item and the response pattern validation technique. The response pattern of a highly selected group or of professional musicians would serve as the criterion for standardization of such a new form.

Several limitations in performance evaluation techniques were enumerated by Hoffren.[3] Some of these difficulties are minimized in the "Wind Instrumentalist Inventory Scale" by being performance-related rather than a test of performance. First, the student's choices have been previously verbalized as technical elements of performance rather than aesthetic elements. Second, the time sequence of apprehension

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[1]G. Frederic Kuder, Kuder Preference Record--Occupational, Manual, (Chicago, Ill.: Science Research Associates, 1956).

[2]Edward K. Strong, Jr., Strong Vocational Interest Blank for Men, Revised, Form M, (Palo Alto, Calif.: Consulting Psychologists Press, 1946).

[3]Hoffren, "A Test of Musical Expression," p. 33.

for aural materials is eliminated. The student may read and re-read the music as often as necessary. This also minimizes the possibility of errors arising from lapses of attention. The music is presented visually rather than aurally; hence, the pace of comprehension is not arbitrarily predetermined. Third, there is no attempted notation of expressive and aesthetic qualities pertaining to the music itself; rather, the aesthetic attributes are suggested as relative only to the performance of the music.

Summary and Recommendations

Form II of the "Wind Instrumentalist Inventory Scale" has been shown to possess a fair to moderately high degree of effectiveness in tests of significance and correlation in a highly selected and homogeneous sample. The degree of discrimination within the instrument can probably be improved through continued utilization and minor modifications in form and content. Alteration of answer format to present a gradation in degrees of response rather than a simple forced choice might enhance the power of discrimination and the indices of reliability and validity.

It is recommended that additional forms be devised and used by the Oklahoma Music Educators Association in conjunction with the selection process now in use for the All-State Music Festival. It is felt that the present test delineates quite clearly the path for further exploration in objective performance-related evaluation. Additional forms and experiments should be devised for evaluating percussionists, vocalists, and string instrumentalists.

Further investigation is also suggested in usage of the test

in public schools and in colleges and universities. Discriminatory ability of the test in a heterogeneous grouping has not been demonstrated. An experimental study should be devised to evaluate possible uses for the test among performers of widely discrepant abilities.

Finally, it is hoped that the present study has identified and established a new technique in performance evaluation. The fact that there has been little research in group performance evaluation, as was noted in Chapter II, should not be a deterrent to further valid research studies. The writer most emphatically suggests that if a valid, realistic goal can be identified then the means to attain that goal is a logical possibility. Kvaraceus[1] supports this concept that a desired end, clearly defined, provides a point of reference in the search for a means to attain the specific end. He further contends that this is a valid and effective technique for developing and for improving concepts in evaluation. In turn, as the evaluation method improves it becomes a technique of establishing and defining the relationships between ends and means.

This has been attained in the present study. The end, a valid rating of performance ability was defined. A means of obtaining this rating was constructed and validated by means of a completely independent external criterion. The "Wind Instrumentalist Inventory Scale," Form II, is a performance evaluation instrument by virtue of being performance-related. Although not a direct evaluation means

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[1]William C. Kvaraceus, "Evaluation as a Key Process for Establishing the Relationship Between Ends and Means," The Journal of Education. CXLI, No. 1, (Oct., 1958), pp. 17-19.

for assessing musical performance achievement it does provide an indirect technique for estimating performance achievement. Moreover, it is also a group instrument, a distinctly advantageous characteristic for all screening purposes.

It is further hoped that by identifying and validating this principle of the evaluation of performance-related factors, rather than evaluating performance alone, that some contribution to the improvement of teaching and learning processes has been made.

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APPENDIX A

MUSIC ACHIEVEMENT TEST USED IN THE PILOT STUDY

MUSIC ACHIEVEMENT TEST

A Musical Terms

Below is a list of musical terms. Following each term is a group of definitions. Select the one definition which most accurately explains the term. Place the corresponding letter in the blank provided.

****

EXAMPLE:

B I Ma Non Troppo: a. little by little; b. but not too much so; c. in the style of; d. in like manner.

___ 1. Fermata: a. firmly; b. prolonged indefinitely; c. with animation; d. heavy, ponderous.

___ 2. Adagio: a. very slow and broad; b. moderately slow; c. at ease, slow and tranquil; d. moderately moving.

___ 3. Allegretto: a. less fast than Allegro; b. slightly faster than Allegro; c. moderately slow; d. quick, lively.

___ 4. Ritenuto: a. gradually softer; b. gradually longer; c. gradually slower; d. gradually softer and slower.

___ 5. Stringendo: a. gradually faster and louder; b. suddenly longer; c. gradually faster; d. suddenly faster and louder.

___ 6. Morendo: a. gradually faster and louder; b. suddenly softer and slower; c. dying away; d. gradually more and more.

___ 7. Piu Mosso: a. less motion; b. drawn together; c. martial; d. more motion.

___ 8. Andante Cantabile: a. moderately slow and lyrical; b. moderately fast and lyrical; c. lively but singing; d. quite slow and singing.

___ 9. Allegro con gusto: a. lively and boisterous; b. fast and delicately; c. quickly with taste; d. lively with precision.

___ 10. Allegro giusto: a. lively and boisterous; b. fast and delicately; c. quickly with taste; d. lively with precision.

___ 11. Pesante: a. heavy, plodding; b. in peasant style; c. plain and unadorned; d. jolly and playful.

___ 12. Volti Subito: a. return to the sign; b. return to the beginning; c. turn quickly; d. turn back quickly; e. incomplete.

___ 13. L'istesso Tempo: a. the first time; b. the same speed; c. the slower speed (listless); d. the last time.

___ 14. Vivace assai: a. lively enough; b. vividly and clearly; c. very lively; d. not too lively.

___ 15. Tempo Rubato: a. in borrowed time; b. in peasant or country style; c. in a stretched-out rhythm; d. in a hurried manner.

B Music Literature

This section contains a list of musical compositions. Following each title is a group of composer's names. Select the correct composer and place the appropriate letter in the blank provided.

******

___ 16. Bolero: a. Ravel; b. Debussy; c. Granados; d. Grieg.

___ 17. Great Gate at Kiev: a. Prokofieff; b. Tschaikovsky; c. Moussorgsky; d. Khachaturian.

___ 18. Barnum and Bailey's Favorite: a. J.P. Sousa; b. Henry Fillmore; c. Harold Walters; d. K.L. King.

___ 19. Italian in Algiers: a. Resphigi; b. Rossini; c. Verdi; d. Puccini.

___ 20. Grand Canyon Suite: a. Fauchet; b. Grainger; c. Bennett; d. Grofe.

___ 21. Folk Song Suite: a. Ralph Vaughn Williams; b. Gustav Holst; c. Frank Erickson; d. Harold Walters.

___ 22. Water Music: a. Schubert; b. Mendelssohn; c. Haydn; d. Handel.

___ 23. Sheherezade: a. Prokofieff; b. Shostokovitch; c. Rimsky-Korsakov; d. Stravinsky.

___ 24. Carmen: a. Bizet; b. Debussy; c. de Falla; d. Liszt.

___ 25. Men of Ohio: a. J.P. Sousa; b. E.F. Goldman; c. K.L. King; d. Henry Fillmore.

___ 26. First Suite in E Flat: a. Henry Purcell; b. Gustav Holst; c. Ralph Vaughn Williams; d. Edward McDowell.

___ 27. The Liberty Bell: a. E.F. Goldman; b. Richard Rodgers; c. Kenneth J. Alford; d. J.P. Sousa.

___ 28. Tulsa: a. Donald Moore; b. Donald Gillis; c. Roy Harris; d. Morton Gould.

___ 29. George Washington Bridge: a. William Schuman; b. Robert Shaw; c. Harold Walters; d. Forrest L. Buchtel.

___ 30. Divertimento for Band: a. Borodin; b. E.O. Caneva; d. Philip Lang; d. Vincent Persichetti.

C Music Literature

This section contains a list of composers' names. Following each name is a group of composition titles. Select the one title not written by the composer and place the appropriate letter in the blank provided.

****

___ 31. J. S. Bach: a. St. Matthew Passion; b. Samson; c. Brandenburg Concerto; d. Toccata and Fugue in D minor.

___ 32. J. P. Sousa: a. Manhattan Beach; b. The Last Days of Pompeii; c. On the Mall; d. Hands Across the Sea.

___ 33. Igor Stravinsky: a. The Firebird; b. Petrouchka; c. Song of the Nightingale; d. Suite Francaise.

___ 34. Aaron Copland: a. New World Symphony; b. Lincoln Portrait; c. Appalachian Spring; d. An Outdoor Overture.

___ 35. Tschaikovsky: a. The Nutcracker; b. The Sorcerer's Apprentice; c. Marche Slav; d. Pathetique Symphony.
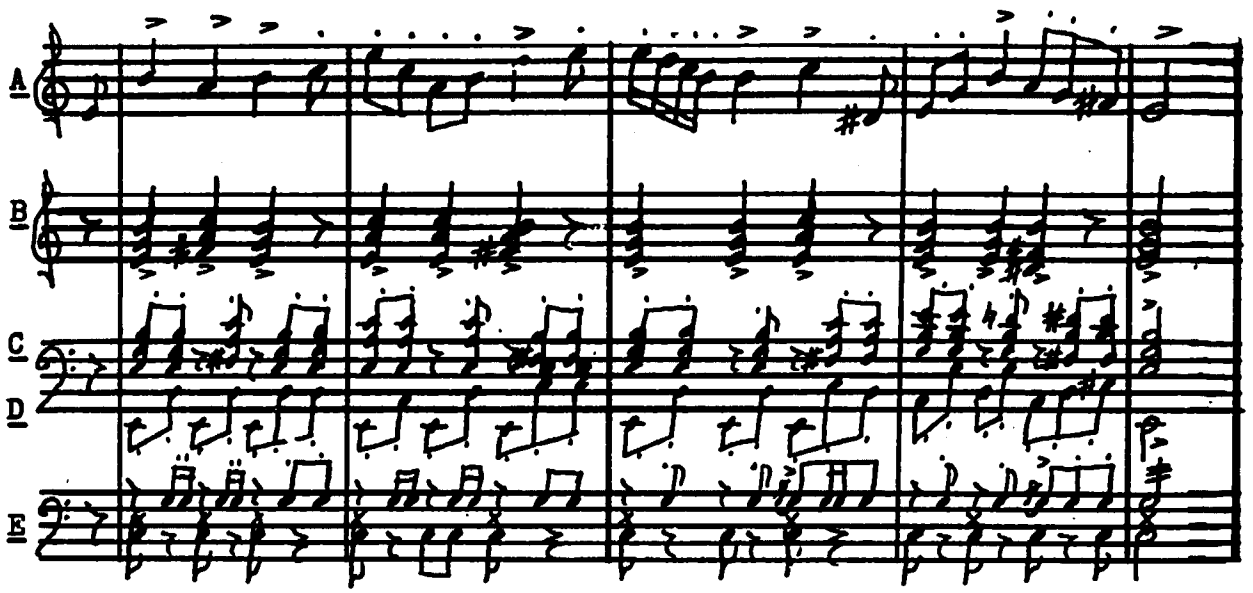
___ 36. Haydn Wood: a. A Manx Overture; b. Mannin Veen; c. Knightsbridge March; d. The Seafarer.

___ 37. Ludwig von Beethoven: a. Eroica Symphony; b. Moonlight Sonata; c. Choral Symphony; d. Unfinished Symphony.

___ 38. Richard Wagner: a. Till Eulenspiegel; b. Tristan and Isolde; c. Tannhauser; d. The Flying Dutchman.

___ 39. Morton Gould: a. Toccata for Band; b. Pavanne; c. An American Salute; d. Jericho.

___ 40. Frank Erickson: a. Black Canyon of the Gunnison; b. Symphony for Band; c. Autumn Silhouette; d. Air for Band.



D Music Notation

Examine carefully this excerpt from a condensed band score. Then select what seems to be the most plausible answer for each of the following questions about the music. Place the letter of the answer you select in the blank provided.

****

___ 41. The most likely time signature for the above excerpt should be: a. 2/4; b. 3/4; c. 7/8; d. 2/4 + 3/8; e. 9/8.

___ 42. The most logical tempo designation should be: a. Largo; b. Allegro Vivo; c. Allegretto; d. Adagio; e. Prestissimo.

___ 43. An equivalent metronome marking would be approximately: a. ♩ = 48; b. ♩ = 72; c. ♩ = 160; d. ♩ = 104; e. ♩ = 128.

___ 44. Perhaps a better way of marking the tempo for a metronome setting would be: a. ♪ = 160; b. ♪ = 208; c. ♪ = 96; d. ♩ = 96; e. ♩. = 72.

___ 45. No key signature is given. The principal tonality is: a. E minor; b. G major; c. B minor; d. C major; e. G minor.

___ 46. The A line is primarily: a. contrapuntal; b. harmonic; c. melodic; d. rhythmic; e. none of these.

___ 47. The B lines are primarily: a. contrapuntal; b. harmonic; c. melodic; d. rhythmic; e. none of these.

___ 48. If scored for full band the C parts would probably be played by: a. high woodwinds; b. high brass; c. low woodwinds; d. low brass.

___ 49. The percussion parts (E) help to emphasize particularly the a. A part; b. B parts; c. C parts; d. D parts.

___ 50. The most suitable stylistic marking would be: a. molto pesante; b. con calore; c. leggiero secco; d. meno affettuoso.

APPENDIX B

WIND INSTRUMENTALIST INVENTORY SCALE, FORM I

WIND INSTRUMENTALIST INVENTORY SCALE

NAME_____ INSTRUMENT_____ PART_____ CHAIR_____
(please print all information with last name first)

SEX_____ AGE_____ GRADE IN SCHOOL_____ YEARS OF BAND EXPERIENCE_____
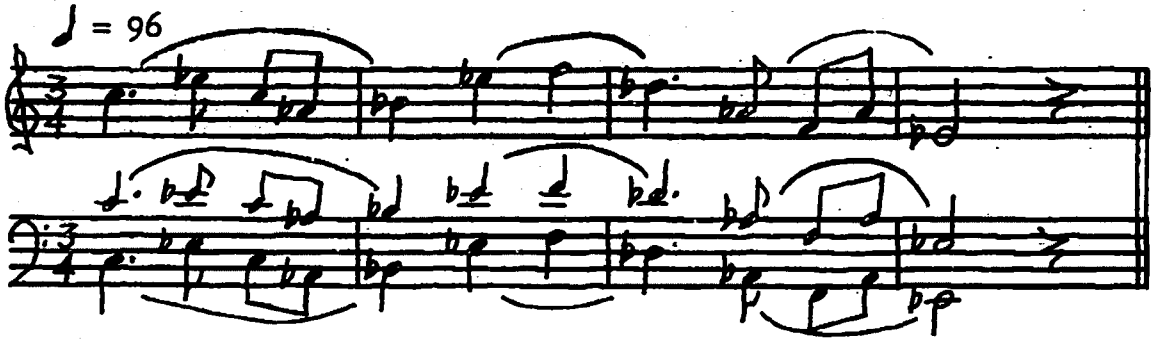
NAME OF SCHOOL_____ DIRECTOR_____

HOME ADDRESS_____ _____
(number & street) (post office)

SECTION I

DIRECTIONS: In this section are several music fragments. They appear in both treble and bass clef. Consider each as a melody for your instrument. Read them silently to yourself and do not sing, whistle, or hum them audibly. Then read the statements about these music phrases and use your own experience and training as a performer to decide whether each statement is accurate. Many suggested answers are not necessarily either "right" or "wrong." Mark a plus sign (+) in the blank if you "agree with the statement; a zero (0) in the blank if you "disagree" with the statement. If you have been provided with a machine scoring answer sheet mark the first space if you "agree" with the statement and the second space if you "disagree." Use only a soft leaded pencil and make all marks heavy and black.

#1



___ 1. This melody should be played in a marcato style.

___ 2. This melody should be played in a legato style.

___ 3. The style suggests a soft dynamic level.

___ 4. The style suggests a loud dynamic level.

___ 5. This melody requires strict rhythmic accuracy in performance.

___ 6. This melody would permit a relaxed and free rhythmic performance.

___ 7. The effectiveness of this passage would depend upon success in obtaining a cantabile style of performance.

___ 8. This melodic outline requires very accurate pitch placement.

___ 9. The first note should be played broadly.

___ 10. The first note should be slightly detached.

___ 11. The climax of this melody is on the third beat of the second measure.
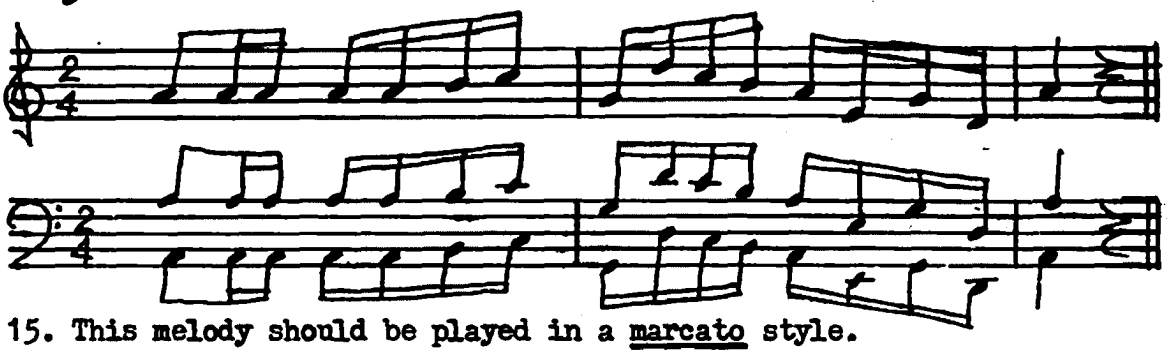
___ 12. These rhythmic patterns would be more difficult if the meter were changed to a rapid 6/8.

___ 13. The dotted quarter notes receive greater emphasis than the moving quarters and eighth notes.

___ 14. The first note in the second measure should be held for full value.

♩ = 108

#2



___ 15. This melody should be played in a marcato style.

___ 16. This melody should be played in a legato style.

___ 17. The style suggests a soft dynamic level.

___ 18. The style suggests a loud dynamic level.

___ 19. This melody requires strict rhythmic accuracy in performance.

___ 20. This melody would permit a relaxed and free rhythmic performance.

___ 21. The effectiveness of this passage would depend upon success in obtaining a cantabile style of performance.

___ 22. This melodic outline requires very accurate pitch placement.

___ 23. The first and last notes should be played with extra emphasis.

___ 24. The first and last notes should be played detached or staccato.

___ 25. This melody does not contain a melodic climax.

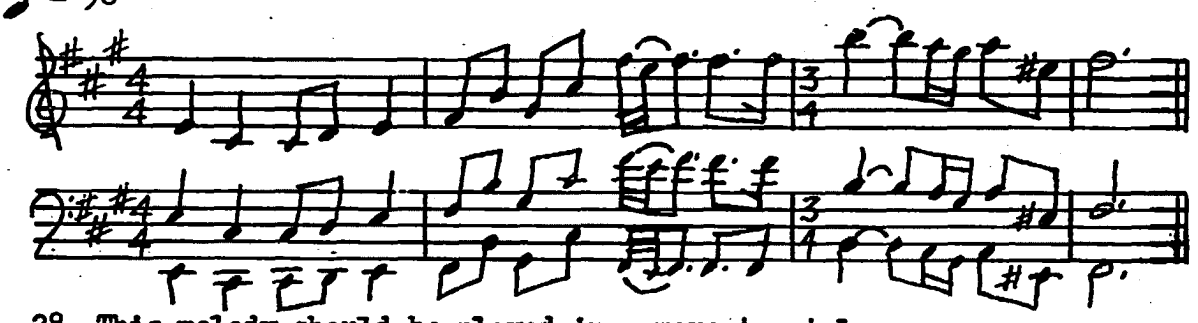
___ 26. The notes in this melody should be held for full value.

___ 27. This music provides less rhythmic interest than melodic interest.

* * * * * * * * * *

♩ = 96

#3



___ 28. This melody should be played in a marcato style.

___ 29. This melody should be played in a legato style.

___ 30. The style suggests a soft dynamic level.

___ 31. The style suggests a loud dynamic level.

___ 32. This melody requires strict rhythmic accuracy in performance.

___ 33. This melody would permit a relaxed and free rhythmic performance.

___ 34. The effectiveness of this passage would depend upon success in obtaining a cantabile style of performance.

___ 35. This melodic outline requires very accurate pitch placement.

___ 36. The first two notes should be played broadly with extra emphasis.

(Melody No. 3, continued)

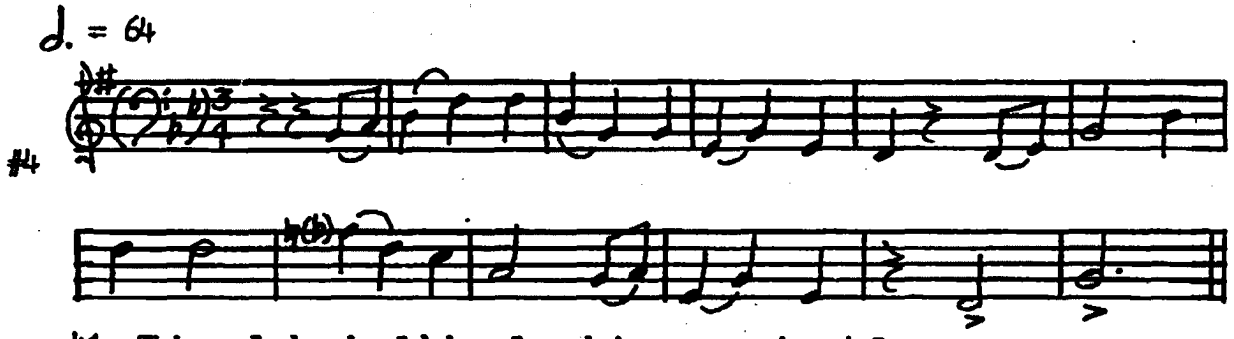
___ 37. The first two notes should be slightly detached.

___ 38. This excerpt does not contain a melodic climax.

___ 39. The change of meter in the third measure adds rhythmic interest.

___ 40. The first note of the third measure should be the softest in dynamics.

* * * * * * * * * *



___ 41. This melody should be played in a marcato style.

___ 42. This melody should be played in a legato style.

___ 43. The style suggests a soft dynamic level.

___ 44. The style suggests a loud dynamic level.

___ 45. This melody requires strict rhythmic accuracy in performance.

___ 46. This melody would permit a relaxed and free rhythmic performance.

___ 47. The effectiveness of this passage would depend upon success in obtaining a cantabile style of performance.

___ 48. This melodic outline requires very accurate pitch placement.

___ 49. The indicated articulations help provide a humorous, awkward effect.

___ 50. The half note in the seventh measure receives less emphasis than the quarter note in that measure.

___ 51. Number 50 is true because the quarter note falls on the beat.

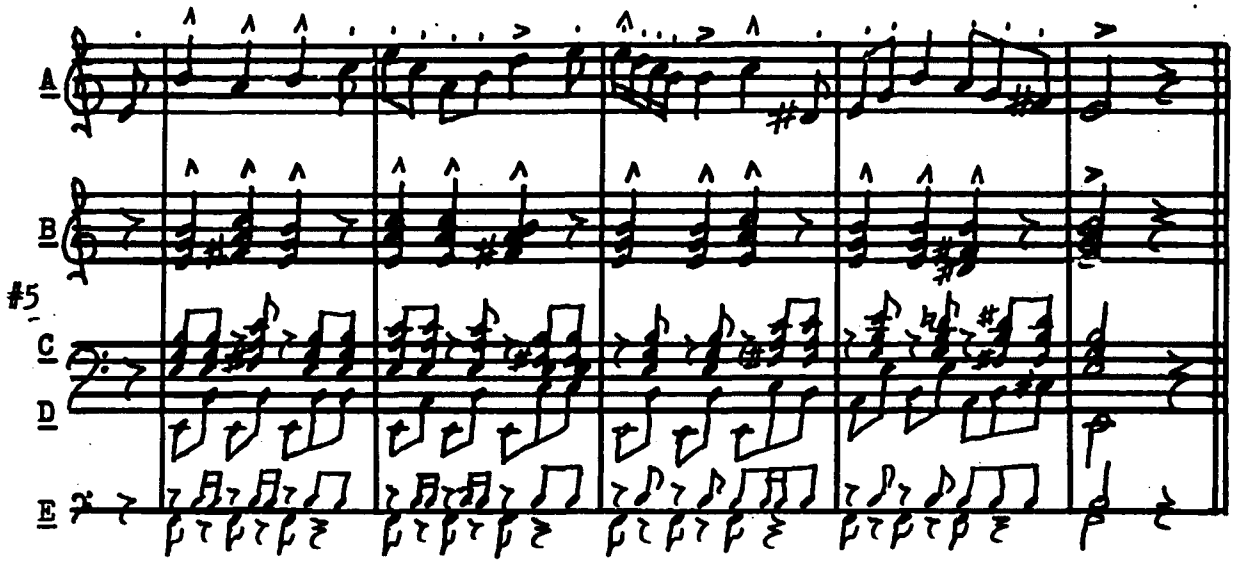
___ 52. Number 50 is false because the half note is really syncopated.

___ 53. This melody does not contain a melodic climax.

___ 54. The notes in this melody should be slightly detached and spaced.

___ 55. The rhythmic interest of this melody is greater than its melodic interest.

* * * * * * * * * *



(Note that no meter signature, key, or tempo designation is given for the condensed band score above. Base your answers entirely upon your interpretation of the music as you read it to yourself silently.)

___ 56. A logical meter signature for this excerpt might be 2/4 + 3/8.

___ 57. A meter signature of 7/8 might be better than an equivalent mixed signature of 2/4 + 3/8.

___ 58. Stylistic markings indicate a tempo designation of Andante or slower.

___ 59. This music could be performed in 3/4 meter with one minor change in the notation.

___ 60. If the metronome marking were ♩ = 104 a suitable tempo term might be Allegretto.

___ 61. A practical metronome setting for this music could be ♪ = 208.

___ 62. The metronome setting for a dotted quarter beat note would be two-thirds that of ♪ = 208. (Approximately ♩. = 139)

___ 63. Prestissimo in 7/8 meter is equivalent to Allegretto in 2/4 + 3/8.

___ 64. Dolce Cantabile would be an appropriate marking for this melodic line.

___ 65. The bass line should not be played marcato.

___ 66. There is a definite countermelodic effect between the melody and the bass line.

___ 67. The absence of a key signature indicates a tonality of C major.

___ 68. The F♯ accidentals make a strong sound leading to G major.

___ 69. The predominant key sound is in E minor.

___ 70. This excerpt is not in a definite key.

___ 71. The C parts would probably be played by lower brasses in normal band scoring.

___ 72. This excerpt would be more effective scored for woodwinds alone than for brasses alone.

___ 73. This excerpt would be more effective scored for brasses alone than for woodwinds alone.

___ 74. The number of parts involved would require that the excerpt be scored for full band.

___ 75. The B parts define and support the principal harmony.

___ 76. The E parts (percussion) emphasize both the melodic and bass rhythms.

___ 77. The conductor should attempt to obtain a rather grotesque and novel style of performance.

___ 78. As a performer you would expect the conductor to use a basic three-beat baton pattern while conducting this music.

___ 79. As a performer you would expect the conductor to use a basic four-beat baton pattern with a shortened fourth beat.

___ 80. The A part, or melody, would probably be played eventually by nearly every instrument in the band; if you were playing the entire score.

* * * * * * * * *

SECTION II

DIRECTIONS: In this section of the inventory scale are several paragraphs describing novel situations. Read each situation and imagine that you are the player involved. Again, the suggested answers are not necessarily "right" or "wrong." Simply decide whether you agree or disagree with each of the statements.

Situation A

Belvue is a small town of about 2,000 population. The high school band director has been teaching here for eight years. He has resigned unexpectedly to manage a family business because his father is severely ill.

Assume that you are a senior member of this high school band. The last home football game will be played in just four days. The Board of Education has hired a new director but he will not begin work for another week. Your band has had a very successful season thus far but now you have no director to prepare your final marching appearance of the year.

Listed below are several possible actions you and the other band members could take. Mark a plus sign (+) in the blank if you consider the suggested action a desirable possibility in these circumstances. Mark a zero (0) in the blank if you disagree with the statement or feel the action would not be appropriate. (With machine answer sheets mark the first space for plus (+), the second space for zero (0).)

___ 81. Cancel the band's appearance at this game.

___ 82. Have the seniors plan and prepare a new show for this game.

___ 83. Leave the game appearance and plans up to the Drum Major.

___ 84. Repeat a show used at an early season game in a nearby town.

___ 85. Present a new show prepared for this game by the former director but not yet rehearsed.

___ 86. Leave the decision up to your high school principal.

___ 87. Ask the principal to appoint a teacher to supervise rehearsals while the Drum Major conducts.

___ 88. Arrange with a nearby college to have a senior music student direct this appearance.

___ 89. Have all the seniors conduct in rehearsal and select one to direct your final performance.

___ 90. Cancel the week's rehearsals and report to school an hour later each day. (The band meets during the first period.)

___ 91. Make the rehearsal into a study period supervised by an off-duty teacher.

___ 92. Plan to play only in the stands and do not attempt a half-time field performance.

___ 93. Plan only a half-time concert standing at mid-field in a block band formation.

___ 94. Have the band seniors, officers, and Drum Major plan a definite course of action. Then ask the principal for his help.

___ 95. Present several plans to the entire band and abide by a majority decision.

___ 96. Have all the seniors act as a committee of student conductors to prepare and conduct their last game performance.

* * * * * * * * * *

Situation B

The South High School Band is playing a concert. In one composition you have a long rest in 3/4 meter, then a single measure of rest in 4/4 meter, and another long rest in 3/4 meter before your next entrance. You always check your count at the 4/4 measure by glancing up to watch the conductor's change in beat pattern.

You look up at what you think is the proper count and the conductor continues to beat a 3/4 pattern. You then fail to hear an entrance cued in your part. Your count and the director's beat do not match. Either you or the director has missed the 4/4 measure and is lost.

Mark the appropriate blanks as before to indicate whether you agree or disagree with the following statements. Each statement is either an action you might attempt or a decision to make in this situation.

___ 97. Continue your old count and make your next entrance by this count.

___ 98. Check your count with a nearby player.

___ 99. Drop your count and watch for a 4/4 measure to begin a new count.

___100. The director missed the meter change because you hear a third beat as you see his first beat.

___101. You missed the meter change because you hear a third beat as you see a first beat.

___102. Stop counting and wait for the director to cue your next entrance.

___103. Your next entrance is doubled in another section. Wait until you hear it and then sneak in softly.

___104. Make your next entrance fortissimo at approximately the right place and force the band and director back together.

___105. Sneak in softly several times if necessary until your part sounds right with the rest of the band.

* * * * * * * * *

Situation C

You have been selected by your director to play a short sixteen measure solo during your band's football half-time performance. Both the music and the marching have been well rehearsed. You have played the solo many times but have always used the music. Just as you move into position for the solo formation your music falls to the ground. The introduction for the solo is already being played and you have about eight seconds to decide what to do.

Mark the appropriate blanks as before to indicate whether you agree or disagree with the following statements.

___106. Pick up the music and run into place.

___107. Ask a bandsman near you to pick up your music and hold it so you can see the solo music.

___108. Ask someone near to pick up the music and hand it to you.

___109. Close your eyes and try to fake the solo.

___110. Yell at someone nearby with music to play the solo.

___111. Watch the conductor (or Drum Major) and trust your memory.

___112. Signal the Drum Major to cut the music off and move on into the next formation.

* * * * * * * * *

Situation D



This melodic line is a short solo cadenza. Assume that you are playing this cadenza in your band's concert selection at the state contest. For some reason you miss the slur into the fourth note and play an obviously wrong note that sounds almost like a squawk. (Brass players may assume that a valve or slide hung briefly; woodwind players may assume that a pad leaked momentarily or the embouchre slipped slightly.)

Mark the appropriate blanks as before to indicate your agreement or disagreement with the following statements as suitable reactions to this kind of unexpected situation.

___113. Stop immediately and begin the cadenza again.

___114. Play the 3rd and 4th notes again and then continue the cadenza.

___115. Continue as if you had made no mistake.

___116. Attack the 4th tone again as quickly as possible and hold the fermata a little less than usual.

___117. Jump to the 5th note and play it as a fermata before continuing.

___118. Ignore the expression marks and play the cadenza again very deliberately and slowly to avoid wrong notes.

___119. Begin the cadenza again but ignore the articulation marks in order to avoid wrong notes.

___120. Finish the cadenza playing faster than usual so that additional errors, if any, would be less noticeable to the judges.

___121. Nudge the second chair player and ask him/her to play the cadenza.

___122. Skip the solo and nod to the conductor to go ahead.

___123. Skip to the last note of the cadenza and play a long fermata.

___124. Stop and wait for your director to decide what to do.

___125. Look at the judges to see if they are writing criticisms before you decide what to do.

___126. Put your instrument down as a signal for someone with a cue to play the cadenza.

* * * * * * * * *

APPENDIX C

WIND INSTRUMENTALIST INVENTORY SCALE, FORM II

LETTERS TO MUSIC DIRECTORS

WIND INSTRUMENTALIST INVENTORY SCALE

NAME_____INSTRUMENT_____PART_____CHAIR_____
(Last, First, Initial - - - Please Print)

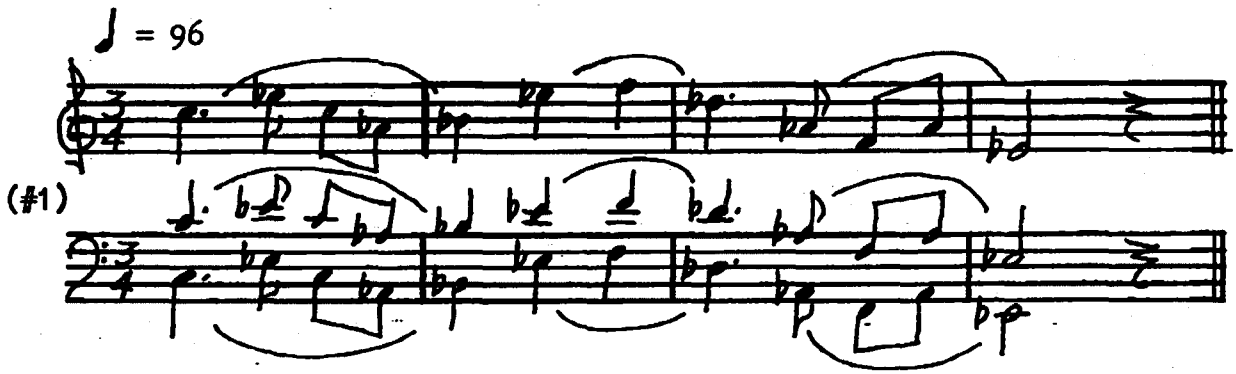
SEX_____ AGE_____ GRADE IN SCHOOL___ YEARS OF BAND EXPERIENCE_____

NAME OF SCHOOL_____ DIRECTOR_____

HOME ADDRESS_____ _____
(number & street) (post office)

DIRECTIONS: This evaluation scale is based on several music fragments in different styles and keys. They appear in both treble and bass clef. Consider each one as a melody for your instrument and read the melody in the proper clef and register you normally play. Read this music silently and do not whistle, sing, or hum them audibly. Then read the statements about these musical phrases and use your own experience and training to decide whether each statement is accurate. Many suggested answers are not necessarily either "right" or "wrong." Simply decide whether you agree with each statement or disagree. If you think the statement is correct mark the first space for the question on the answer sheet; if you disagree mark the second space. Make all marks heavy and black with a soft pencil and mark only one space per question.

(If machine scoring answer sheets are not available mark a plus sign (+) for "agree" or a zero (0) for "disagree" in the blanks of the test booklet.)



___ 1. This melody should be played in a rather marcato style.

___ 2. This melody should be played in a rather legato style.

___ 3. The melody suggests a fairly soft dynamic level.

___ 4. The melodic style suggest a fairly loud dynamic level.

___ 5. This phrase would require a strict rhythmic accuracy in performance.

___ 6. This melody would permit a tempo rubato style of performance.

___ 7. A cantabile style of playing would be helpful in making this melody very effective and pleasant to hear.

___ 8. This melodic outline would require very good intonation.

___ 9. The first note in each measure receives a slight emphasis above the rest of the melody.
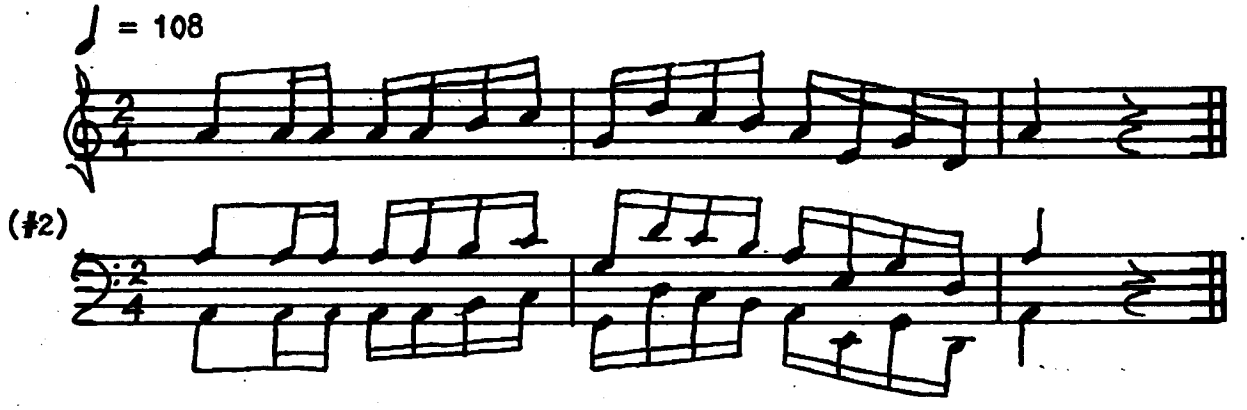
___ 10. These phrase endings should be lightly detached or separated.

___ 11. The melodic climax is the first note of the third measure.

___ 12. This phrase would be rather difficult if the meter signature were changed to a rapid 6/8.

___ 13. All the quarter notes in the second measure should be held for their full value.

___ 14. This phrase is not in a clearly defined key.



___ 15. This melody should be played in a rather marcato style.

___ 16. This melody should be played in a somewhat legato style.

___ 17. The style suggests a moderately loud dynamic level.

___ 18. The melody would not be clear if played at a very loud dynamic level.

___ 19. A cantabile style of performance is not essential to perform this phrase effectively.

___ 20. Precise intonation is less important than accurate rhythm in this particular musical phrase.

___ 21. The first and last notes should be played with more emphasis than the sixteenth notes in this phrase.

___ 22. The first and last notes should be slightly detached or staccato.
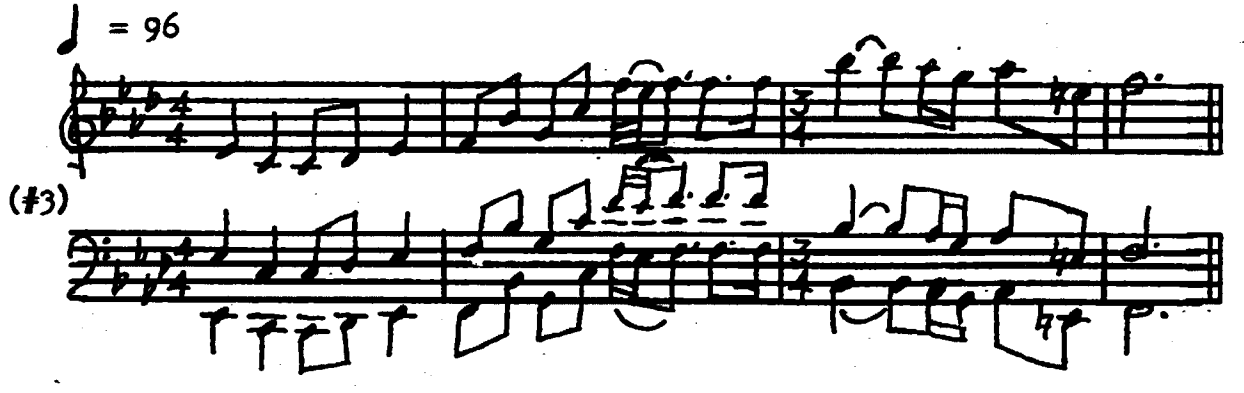
___ 23. This melody does not contain a true melodic climax.

___ 24. The notes in this melody should be held for their full value.

___ 25. This melody provides less rhythmic interest than melodic interest.

___ 26. These even rhythm patterns would not permit a rubato style performance.

* * * * * * * * * *



___ 27. This melody should be played in a rather marcato style.

___ 28. This melody should be played in a rather legato style.

___ 29. The musical style suggests a fairly soft dynamic level.

___ 30. The musical style suggests a fairly loud dynamic level.

___ 31. This phrase would require strict rhythmic accuracy in playing.

___ 32. This melody would permit a relaxed and free rhythmic performance.

___ 33. Accurate pitch placement would be more important than precise rhythm in playing this melody.

___ 34. A cantabile style of performance would be less effective than a bravura style in playing this melody.

___ 35. The first measure should be rather broad with slight accents.

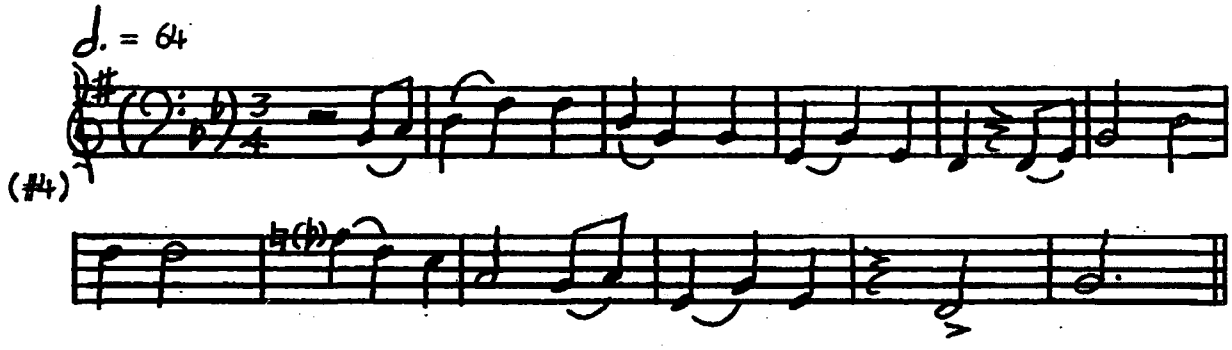
___ 36. A melodic climax is not clearly defined in this phrase.

___ 37. The change of meter at the third measure increases tension and adds melodic interest.

___ 38. The first note of the third measure should be the softest in dynamics.

___ 39. The character of this phrase suggests it is more suitable for woodwind instruments than for brasses in performance.

* * * * * * * * * *



___ 40. This melody should be played in a somewhat marcato style.

___ 41. This melody should be played in a somewhat legato style.

___ 42. The style and articulations suggest a very soft dynamic level.

___ 43. The style and articulations suggest a moderately loud dynamic level.

___ 44. This melody would require a strict rhythmic accuracy.

___ 45. The rhythmic effects indicated would not permit a rubato style of performance.

___ 46. The effectiveness of this passage would be enhanced by a cantabile style of performance.

___ 47. The general effect and sound of this melody is very similar to that of folk songs.
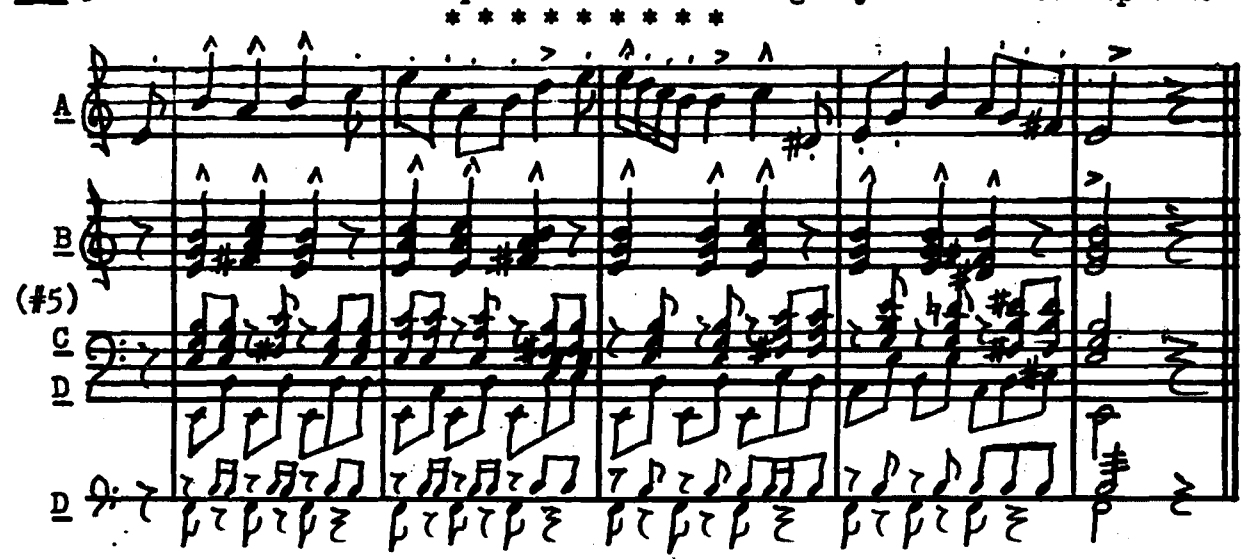
___ 48. The half note in the seventh measure receives less emphasis than the quarter note in that measure.

___ 49. Number 48 is correct because the quarter tone falls on the beat.

___ 50. Number 48 is incorrect because the half note is actually syncopated.

___ 51. The melodic climax is quite strong in this melody.

___ 52. Most notes in this phrase should be slightly detached and spaced.



(Note that no meter signature, key or tempo designation is given for the condensed band score above. Base your answers entirely upon your interpretation of the music as you read it to yourself silently.)

___ 53. A logical meter signature for this excerpt could be 2/4 + 3/8 or 7/8.

___ 54. Stylistic markings indicate a tempo of Andante or slower.

___ 55. This music could be performed in 3/4 time without changing any notes at all by making a small addition to each measure.

___ 56. If the metronome marking were ♩ = 104 a suitable tempo term might be Allegretto.

___ 57. Another practical setting for the metronome would be ♪ = 208.

___ 58. The metronome setting for the dotted quarter beat note would be two-thirds that of ♪ = 208. (Approximately ♩. = 139.)

___ 59. Prestissimo in 6/8 could be equivalent to Allegretto in 3/4 time.

___ 60. Dolce cantabile would be an appropriate marking for this melodic line.

___ 61. The bass line should not be played in a marcato style.

___ 62. There is a distinct countermelodic effect between the melody and the bass line.

___ 63. The F♯ accidentals make this excerpt sound in G major.

___ 64. The absence of a key signature indicates this phrase is in the key of C major.

___ 65. The predominant key sound of this phrase is E minor.

___ 66. The predominant key sound of this phrase is B minor.

___ 67. This excerpt is not in a definite key.

___ 68. The (C) parts would probably be played by low brasses in normal band scoring and part writing.

___ 69. The (B) parts define and support the principal harmony.

___ 70. The (C) parts support the rhythm more than the harmony.

___ 71. The (E) parts (percussion) emphasize both the melodic and bass rhythms.

___ 72. The conductor should attempt a rather novel and awkward effect in performing this music.

___ 73. The conductor should use a basic three-beat pattern with a longer third count when conducting in this rhythm.

___ 74. The conductor should use a basic four-beat pattern with a shortened fourth count when conducting in this rhythm.

___ 75. The (A) part, or melody, would probably be played eventually by nearly every instrument in the band if you were playing the entire score.

* * * * * * * * *

WIND INSTRUMENTALIST INVENTORY SCALE

Manual and Directions

TO THE DIRECTOR: Please examine a copy of the test booklet and become familiar with the format and content. The inventory scale does not attempt to measure musical knowledge as such but does attempt to measure a student's application of knowledge to problems related to reading and performing new music. The basic premise in construction of this scale is that students of similar performance abilities on any of the melodic instruments will select similar patterns in their responses to the suggested inferences.

This edition is the third version of the test. In its present form it contains 51 fewer items than the previous edition administered to the 1962 All-State Band and half the candidates for the 1963 All-State Band. As in the previous edition only alternate choices are provided. Many of the statements are neither "right" nor "wrong." The student is to decide only whether he agrees with the statement or disagrees with it. A choice should be made on every item as there is no penalty for guessing other than natural odds against picking the correct answer.

DIRECTIONS: A machine scoring answer sheet is provided with each test booklet. Have all students fill in the required information at the top of both the booklet and the answer sheet. Also have all students fill in the name of the instrument each plays in the "Name of Test" blank beneath the instructor's name.

When students have completed the information blanks read aloud the directions in the booklet while they read silently. Explain carefully that they are to mark the first space opposite the question number if they "agree" with the statement; mark the second space opposite the question number if they "disagree" with the statement. Marks should be heavy and black and must be made only with a soft leaded pencil.

Spaces 3, 4, and 5 are to be left blank on all questions.

Then say aloud: "I will not explain musical terms or give any help after we begin. The only help I can give now is to pronounce words and explain procedures. There is no time limit but you are to work as rapidly as possible. Most of you should be finished in fifteen to twenty minutes. Remember to use only a soft-leaded pencil and make the marks heavy and black. Are there any questions?"

Pause for a moment, then say: "You may begin."

Take up the test booklets and answer sheets as the students complete the test. Please check to make sure each student has placed his name on the answer sheet. Return all test materials to All-State headquarters with the audition tapes.

In any event you should run short of materials have some students write directly on the test booklets or use some booklets twice or more by putting all needed information on the answer sheet only.

NOTE: PERCUSSIONISTS DO NOT NEED TO TAKE THE TEST.

632 Villa Dr.
Norman, Okla.
Nov. 25, 1963

Dear Band Director:

A brief objective-type test will be administered to all students who audition for the 1964 Oklahoma All-State Band. The test will be given at the five audition centers to all candidates before their auditions. This test will not in any way affect any student's acceptance or placement in the 1964 All-State Band.

Actual administration of the test will require only about twenty minutes and will be given at very frequent intervals; usually within a half hour of any group's arrival at the audition center. Please check with the audition chairman for your time when you report to the center. All materials necessary will be furnished for your students as the test is scored on IBM answer sheets.

This test is part of a research project for a doctoral degree. The study began in 1960 with a preliminary form administered to University of Oklahoma band members. An extended and revised form was given to the 1962 All-State Band, and to seniors and juniors of several schools. Another revision will be used for the 1964 All-State Band candidates.

Preliminary statistical treatment thus far indicates that objective test ranking can correlate positively with audition ranking. Statistical significance has not yet been established but will be determined with the results from the 1964 All-State Band applicants.

I feel this study may have great value for future activities of O.M.E.A. Such a test as this, with fairly high validity and reliability indices, can be quite useful in selecting candidates to audition for All-District Bands, All-State Band, college scholarship awards, and other such means of student recognition. At the very least it could help make auditions more effective, more accurate, and perhaps less time-consuming.

I thank you in advance for your help and cooperation. I am most appreciative of the assistance given me in the past two years by so many Oklahoma school band directors.

Sincerely yours,

Paul M. Mansur

OKLAHOMA MUSIC EDUCATORS ASSOCIATION-UNIVERSITY OF OKLAHOMA
FOURTEENTH ANNUAL ALL STATE HIGH SCHOOL BAND

February 6,7,8, 1964

November 26, 1963

Dear Band Director:

Enclosed please find a list of students who have been selected to participate in the regional auditions on December 7, 1963, with audition centers, times and places. The regional auditions will be tape recorded by teams of band and orchestra directors using tape-recording equipment of high quality. On January 4, 1964, a band committee will study the Band tapes and select the 120-125 players for the 1964 All-State Band. On the same date an orchestra committee will study the Orchestra tapes and select wind and percussion players for the 1964 All-State Band. On the same date an orchestra committee will study the Orchestra tapes and select wind and percussion players for the 1964 All-State Orchestra. IF A STUDENT LISTED IS UNABLE TO PARTICIPATE, PLEASE NOTIFY THE O.U. BAND OFFICE AT ONCE (JE 6-0900 - Extension 2020 - Norman).

Music to be prepared for the auditions is enclosed. Please distribute this music to your students immediately. The music need not be memorized. Students will be required to turn in the music at the conclusion of their audition. Reading ability will be tested on an original piece of music. All flute players who double on piccolo are requested to bring their piccolos to the regional auditions. Caution your students about the need to be well prepared. Competition will be very keen. Instruments should be in perfect working order, well-lubricated valves and slides, good reeds, etc.

Students will report to the regional audition centers listed below: NORMAN (O.U.), DURANT (HIGH SCHOOL), TULSA (NATHAN HALE H.S.), ENID (HIGH SCHOOL), AND LAWTON (HIGH SCHOOL).

Yours very truly,

(signed)

Gene A. Braught, Chairman
Oklahoma All-State Band