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AN ASSESSMENT PROCESS EVALUATION.

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GRADUATE COLLEGE

TROMBONE PERFORMANCE AT THE COLLEGIATE LEVEL: AN ASSESSMENT PROCESS EVALUATION

A DISSERTATION

SUBMITTED TO THE GRADUATE FACULTY

in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

BY

WILLIAM RICHARD HASKETT

Norman, Oklahoma

1979

TROMBONE PERFORMANCE AT THE COLLEGIATE LEVEL:

AN ASSESSMENT PROCESS EVALUATION

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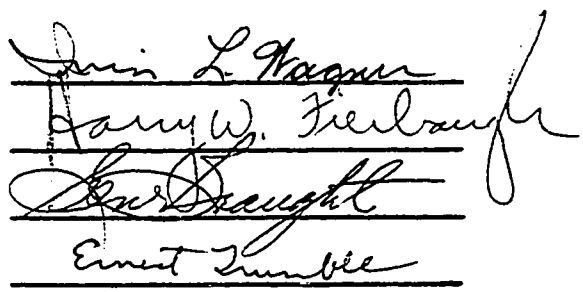

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Chapter 1

INTRODUCTION

Need for the Study

"Evaluation is an integral part of any intelligent human endeavor. . . . The music-education enterprise can be no exception. . . ."[1] All aspects of music education, however, do not submit to equal ease of evaluation. Certain areas of student achievement such as the knowledge of music fundamentals are relatively easy to measure due to their objectivity. Conversely, musical performance, because of its complexity and partially subjective nature, is much more difficult to evaluate. Music educators do agree on the duration of a whole note in a given meter, but they do not always agree on a standard for a musical performance.

Development of musical performance evaluation techniques has been slow due to the paucity of research in that area.[2] The applied music teacher is usually required to construct his own measures, relying upon unique experiences

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[1]Charles Leonhard, "Evaluation in Music Education," Basic Concepts in Music Education, ed. Nelson B. Henry (Chicago: University of Chicago Press, 1958), p. 311.

[2]Paul Lehman, Tests and Measurements in Music (Englewood Cliffs: Prentice-Hall, Inc., 1968), p. 71; Clifford K. Madsen and Charles H. Madsen, Jr., Experimental Research in Music (Englewood Cliffs: Prentice-Hall, Inc., 1970), p. 6.

for standards and guidelines. As a result, many ". . . applied music exams and auditions are rated rather haphazardly through general impressions"[1] and are notoriously unreliable.[2] The process of musical performance evaluation must be improved by development of techniques derived through more systematic procedures.[3]

The National Association of Schools of Music[4] and the Music Educators National Conference[5] have cited a need for performance evaluation and competency levels. Individuals have also spoken to this issue.[6] The outgrowth of this stated need, however, consists of only three measures idiomatic to specific instruments at specific levels that

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[1]William E. Whybrew, Measurement and Evaluation in Music (Dubuque, Iowa: Wm. C. Brown Publishers, 1962), p. 173.

[2]Richard Colwell, "Musical Achievement," Music Educators Journal, 57 (April, 1971), 42.

[3]Whybrew, p. 166.

[4]Guidelines for Junior College Music Programs (Washington: National Association of Schools of Music, 1972), p. 17; Carl M. Neumeyer, ed., By-Laws and Regulations-1959 (Washington: National Association of Schools of Music, 1959), p. 37.

[5]Teacher Education on Music (Washington: Music Educators National Conference, 1972), p. 23.

[6]Lehman, p. 71; Whybrew, p. 177; Richard Colwell, "The Development of the Music Achievement Test Series," Council for Research in Music Education, 23 (Fall, 1970), p. 57; John Goodrich Watkins, Objective Measurement of Instrumental Performance (New York: Columbia University, Bureau of Publications, 1952), p. 82.

strive for objectivity.[1] None are available commercially. Furthermore, there is only one objective, published evaulation instrument applicable to band instruments and adaptable for use at different levels of achievement.[2] These four measures are designed for use at the secondary school level; no performance measure for a specific instrument has hitherto been developed for a specific college population. The dearth of musical performance evaluation instruments is evidence for the need for investigation in this area.

The trend in music evaluation is toward measuring actual musical functions,[3] supplanting many of the traditional pencil and paper achievement and aptitude tests with performance-based measures. In some instances the traditional jury format has been amended to include student performance of works prepared without faculty assistance.[4]

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[1]Harold Fred Abeles, "An Application of the Facet-Factorial Approach to Scale Construction in the Development of a Rating Scale for Clarinet Music Performance" (PhD dissertation, University of Maryland, 1971); John B. Boulton, "A Performance Test of Flute Tone Production, Intonation, and Dexterity" (PhD dissertation, University of Kansas, 1974); Robert W. Kidd III, "The Construction and Validation of a Scale of Trombone Performance Skills" (PhD dissertation, University of Illinois, 1975).

[2]John G. Watkins and Stephen E. Farnum, The Watkins-Farnum Performance Scale for All Band Instruments (Winona, Minnesota: Hal Leonard Music, Inc., 1954).

[3]Whybrew, p. 177.

[4]Allen Winold, "Critical Observations Concerning the Preparation of Candidates for Doctoral Degrees in Performance," College Music Society Symposium, 7 (Fall, 1967), 99-100.

Winold recommends this practice for students in their senior year.[1] Concurrent with the growth of interest in objective musical performance evaluation is the increasing practice of stating the objectives in behavioral terms.

The paucity of research and development in the area of instrumental music performance evaluation and the trend toward the use of performance-based evaluation procedures indicate the timeliness of the present study, which represents an attempt to construct and validate an assessment process and instrument for undergraduate trombonists enrolled in their last semester of required applied study.

Purpose of the Study

The purpose of the study was to: 1) objectify the summational skills level (SSL) considered necessary for students' completion of baccalaureate trombone study requirements; 2) identify commensurate repertoire and other assessment means appropriate for use in the evaluation process; and 3) construct and evaluate an assessment process and instrument corollary to the above procedures.

Definition of Terms

Evaluation. The process of determining the extent to which the objectives of an educational endeavor have been attained.[2]

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[1]Winold, p. 100.

[2]Leonhard, p. 310.

Behavioral objective. A statement or example specifying a skill (behavior) the student is to acquire after having completed a course of study.[1]

Summational skills level. Performance ability empirically established as typical for college students enrolled in their last semester of required applied trombone study.

Student population. Music education majors whose principal instrument is trombone, and who are currently enrolled in their final semester of required trombone study.

Respondent population. College trombone instructors whose principal instrument is trombone.

Trombone. The tenor or bass trombone.

Limitations of the Study

The respondent population consisted of senior college trombone instructors whose principal instrument is trombone. The student subject population was comprised of music education majors whose primary instrument is trombone and who are enrolled in their terminal semester of required applied trombone study. The evaluation instrument was designed to

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[1]Elliot W. Eisner, "Instructional and Expressive Objectives: Their Formulation and Use in Curriculum," Instructional Objectives in Music, comp. T. David Boyle (Vienna, Virginia: Music Educators National Conference, 1974), p. 50.

be administered to the student population during this period. The evaluation instrument measured musical achievement via the performance medium only; paper and pencil measures, and the like, were not within the scope of the study.

Design of the Study

The study was based on Leonhard's three steps of evaluation of an educational endeavor. They are: 1) the identification, formulation and validation of objectives; 2) the collection of data relevant to status in relation to these objectives; and 3) the interpretation of the data.[1]

Step I: Identification, Formulation and Validation of Objectives

A. Forty-nine college trombone instructors provided the data for the formulation of the SSL and identification of commensurate repertoire.

B. The repertoire data were examined for frequency of mention.

C. The preliminary evaluation instruments were constructed.

D. The preliminary instruments were administered to thirty members of the student population in a pilot study.

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[1]Leonhard, p. 310.

E. The responses were judged by a panel of three authorities.

F. The instruments were scored and the data compiled.

G. The evaluation instruments were revised in accordance with the data provided through the above procedures.

H. The final forms (one each for tenor and bass trombones) were constructed.

Step II: The Collection of Data Relevant to Status in Relation to These Objectives

A. The final forms were administered to thirty different members of the student population.

B. The responses were judged by three authorities.

C. The instruments were scored and the data compiled.

Step III: The Interpretation of the Data

A. Measures of central tendency, reliability and validity were computed, reported and interpreted.

B. Conclusions concerning the efficacy of the assessment process and the evaluation instruments were reported.

Summary

The need for the study was indicated by the paucity of objective musical performance evaluation instruments and by the absence of measures for specific instruments at specific levels for college students.

The purpose of the study was to: 1) determine the summational skills level (SSL) considered necessary for fulfillment of applied music requirements for music education majors whose principal instrument is trombone; 2) identify commensurate repertoire and other assessment means appropriate for evaluation of the SSL; and 3) construct and validate an assessment process and instrument corollary to the above procedures.

Relevant terms were defined. The evaluation instruments are performance-based; paper and pencil items, and the like, were excluded from the study.

Chapter 2

REVIEW OF RELATED LITERATURE

The study was concerned with the development of two manuals, one each for tenor and bass trombone, to evaluate the performance skills of music education majors whose principal performance medium is trombone, and who are currently enrolled in their final semester of required baccalaureate applied trombone study. The current chapter reports on literature related to the problem. Included is a discussion of behavioral objectives. Also included is a review of evaluation instruments and processes related to the present study.

Behavioral Objectives

A crucial issue facing education today is that of accountability. Some critics have said that educators have taught too long without clearly defining concepts of their objectives and without establishing reliable procedures for ascertaining whether or not the content is actually learned.[1] Statements of observable, measurable objectives in behavioral terms appear to be a means for effecting

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[1]Elaine H. Waggener, "Accountability: Do Behavioral Objectives Help?" School and Community, 61 (April, 1975), 15.

accountability. Evaluation is based on the extent to which the student is able to exhibit the desired behaviors.

Many articles have been written the last two decades about behavioral objectives. Also, many terms including educational objectives, operational objectives, performance objectives, and measurable objectives have become ambiguous, since the connotations of each have changed since inception.[1] All, however, do specify that learning has occurred.[2] Mager divides the objectives into three parts: 1) the terminal objectives are decided upon; 2) the procedures, context and methods relevant to the objectives are chosen; and 3) the student's performance is measured according to the objectives originally selected.[3] "Thus, three key ideas: the behavior or action, the conditions or context, and the extent or level of performance, are commonly encompassed in the term 'Behavioral Objective.'"[4]

Early concern for and application of behavioral objectives in education was primarily confined to the

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[1]W. James Popham, "Objectives '72," Phi Delta Kappan, 53 (March, 1974), 432.

[2]J. Michael Palardy and James E. Eisle, "Competency-Based Education," The Clearing House, 46 (May, 1972), 546; Rudolf E. Radocy, "Behavioral Objectives in Music: Shall We Continue?" Music Educators Journal, 60 (March, 1974), 39.

[3]Robert F. Mager, Preparing Instructional Objectives (Belmont, California: Fearon Publishers, 1962), p. 1.

[4]Miriam B. Kapfer, "Behavioral Objectives in Music Education," Educational Technology, 11 (August, 1971), 31.

areas of technical training and mathematics. In the mid to late 1960s music educators became aware of their potential. The Tanglewood Symposium participants spoke to the issue of measuring musical behaviors and recommended that ". . . evaluative devices for the measurement of musical behaviors be developed at every level . . . including higher education."[1] Also recommended was the development of criteria for assessing musical behavior.[2] In 1970 the Music Educators National Conference National Examination Board adopted thirty-five objectives focusing on current problems in music education. Eight were given priority attention. One of the eight stated "Assist teachers in the identification of musical behaviors relevant to the needs of their students."[3]

Writers on the use of behavioral objectives differ in opinions as to flexibility. Kruth, for instance, prefers rather rigidly defined objectives.[4] Most writers, however, feel that the objectives should be more broad-based and flexible to allow for each student's uniqueness as a

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[1]"Implications for the Educational Process and for Evaluation," Music Educators Journal, 51 (November, 1967), 79.

[2]Ibid.

[3]Francis M. Andrews, "Goals and Objectives for Music Education," Music Educators Journal, 57 (December, 1970), 24.

[4]Edwin C. Kruth, "Practice--What Do We Mean?" Instrumentalist, 24 (November, 1971), 52.

learner and performer.[1] Regelski provides five criteria for well-written behavioral objectives:

> 1) The materials, media and other limitations and guidelines, if appropriate, will be given; 2) The learner population will be specified; 3) The specific variable will be chosen to elicit covert behavior; 4) The content (knowledge, skill or feeling response) will be selected; and 5) The specific kind of overt behavior that should result is specified. Overt behavior is the major source of evaluation.[2]

Two additional elements of some well-written behavioral objectives are provided: 1) "The criteria by which an acceptable level of proficiency is ascertained," and 2) "A time limit may be imposed."[3] The present study utilizes all of the above criteria with the exception of the third criterion. Covert behavior is not applicable to a performance examination since it cannot be measured effectively.

Summary

The trend toward accountability and the use of behavioral objectives in American education has caused educators to re-examine their teaching techniques, materials

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[1]Joe Lars Klingstedt, "Philosophical Basis for Competency-Based Education," Educational Technology, 12 (November, 1972), 10; Palardy and Eisle, p. 548; Richard K. Weerts, "The Role of the Studio Teacher in the Development of the Instrumentalist," The American Music Teacher, 16 (September-October, 1966), 32-33; William C. Willett, "Rigid Curricular Structure: Debilitant to the Teaching-Learning Process," NACWAPI Bulletin, 20 (Summer, 1972), 58-59.

[2]Thomas A. Regelski, Principles and Problems of Music Education (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1975), pp. 246-47.

[3]Regelski, pp. 247-48.

and evaluation methods. The result should be a more systematic approach to teaching and evaluation. The implications for the studio teacher are obvious; he should utilize more objective-based planning and evaluative processes. The present study represented an attempt to objectify a national summational skills level and commensurate repertoire and to use these data for the construction and validation of two objective evaluation instruments.

Evaluation Instruments Related to the Present Study

There has been little research and development in the area of objective measurement of musical performance. A search of the literature revealed seven studies relevant to the present thesis.

Mansur[1] constructed an objective paper and pencil achievement test for the purpose of evaluating high school level instrumental music performance. It was theorized that a score on this test, when positively correlated with demonstrated performance achievement, would provide a reliable estimate of performance proficiency.

The test, titled Wind Instrument Inventory Scale (WIIS), presents original phrases for the student to read silently as if preparing for a performance. Following each phrase are several deductive inferences regarding the music about which the student is instructed to agree or disagree.

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[1]Paul Max Mansur, "An Objective Performance-Related Music Achievement Test" (PhD dissertation, The University of Oklahoma, 1965).

The WIIS was administered to one hundred and twelve members of the Oklahoma All-State Band and Orchestra.

The author reports a split-halves reliability of .62. A point biserial coefficient of .34 between the All-State selection and the WIIS was also reported. A possible cause of the low correlations, according to Mansur, is the homogeneity of the test group. He suggests that the WIIS can be useful as a screening device, for preliminary placement, and for group guidance. Further suggested is that the instrument be used in conjunction with assessment of actual musical performances.

A study by Gutsch[1] sought to determine an individual's instrumental music achievement by sight-reading rhythm patterns. Developed for fifth grade students and above, the test employed three hundred flash cards, with each containing a rhythmical problem of one or two measures in length. Two equivalent forms were constructed, which yielded a Pearson Product-Moment Correlation of .924. Of the several factors studied, the relationship between age and test score was the highest, at 99.03 per cent. Gutsch concluded that the major influence of age and scores is the result of greater age allowing for more experience.

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[1]Kenneth U. Gutsch, "Instrumental Music Performance: One Approach Toward Evaluation," The Journal of Educational Research, 59 (April, 1966), 377-80.

Watkins[1] developed an objective performance evaluation instrument for cornet. Twenty-three method books were used as the basis for the author's composition of four equivalent forms of the preliminary test. Each form contained sixteen melodies arranged in order of increasing difficulty. The forms were administered to one hundred and five subjects. The types of errors to be scored were limited to pitch, time, change of tempo, expression, slur, rests, holds and pauses, and repeats. Only one error per measure could be noted. Through item analysis, two equivalent final forms of fourteen melodies each were constructed.

The final forms were administered to one hundred and fifty student subjects. The subjects sight-read the final forms, were allowed to practice the forms for one week, and were retested. Reliability coefficients for the final forms were .953 for the sight-reading performance scores, and .947 for the practiced performance scores.

The only published objective performance evaluation instrument is the Watkins-Farnum Performance Scale for All Band Instruments (WFPS).[2] An outgrowth of the above cited study, the WFPS was published in 1954. The WFPS does not measure the total performance, but only those aspects of

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[1]John Goodrich Watkins, "Objective Measurement of Instrumental Performance" (PhD dissertation, Columbia University, 1942).

[2]John G. Watkins and Stephen E. Farnum, Watkins-Farnum Performance Scale for All Band Instruments (Winona, Minnesota: Hal Leonard Music, Inc., 1954).

performance previously cited. Tone quality (including vibrato), intonation and musicianship are excluded from the test.

Abeles[1] constructed a rating scale to measure junior high level clarinet performance. A five-point Likert-type scale was developed from ninety-four descriptive statements gleaned from a literature search and from essays written by seventeen instrumental music instructors describing memorable clarinet music performances. A thirty-item test was developed, comprised of six factors: interpretation, time, rhythm-continuity, intonation, tempo and articulation. Each factor contained five descriptive statements concerning each of the six factors.

Interjudge reliability estimates for three sets of judges evaluating three different sets of ten performers were reported as .939, .949 and .978. Two possible sources of inflation are given: 1) the heterogeneity of the sample (the subjects came from four schools); and 2) ". . . the added cues provided by all performances involving different pieces of music."[2] The criterion-related validity coefficients were higher than .80 for each of the three sets of performers.

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[1]Harold Fred Abeles, "An Application of the Facet-Factorial Approach to Scale Construction in the Development of a Rating Scale for Clarinet Music Performance" (PhD dissertation, University of Maryland, 1971).

[2]Abeles, p. 69.

The items contained in the "interpretation," "rhythm-continuity" and "tempo" factors were the most reliable. "Tone" was the weakest factor. The lack of clear definitions for adjectives such as "thin, natural and shallow"[1] might account for the poor reliability of the "tone" factor. Also, recording and play-back equipment must be suspect. The "intonation" factor was not objectively evaluated, since no pitch analysis device was used. However it must be stated that this instrument was designed for use by music instructors who could certainly respond with accuracy to descriptive statements such as "Bad intonation," "Played out of tune," "Tended to be sharp," "Tended to be flat," and "The intonation was unreliable."[2]

The Abeles study is a worthwhile contribution to the development of objective musical performance evaluation procedures. A possible weakness is inherent in some descriptive statements that are used in a facet-factorial research design.

Boulton[3] developed a performance evaluation instrument for junior and senior high school level flutists. Three areas of perfcrmance were evaluated: tone production, intonation and dexterity. The author formulated behavioral

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[1]Abeles, pp. 80-82.

[2]Abeles, pp. 79-81.

[3]John B. Boulton, "A Performance Test of Flute Tone Production, Intonation and Dexterity" (PhD dissertation, University of Kansas, 1974).

objectives in the three areas and validated them via a questionnaire completed by one hundred and two college and public school music instructors in Kansas. These data formed the basis for the construction of the pilot test. The scoring of the test did not follow a set pattern. The tone quality items, for instance, were scored by the examiner choosing the appropriate number of a horizontal scale numbered from zero to ten. Three examples of tone quality ranging from poor to ideal were pre-recorded and played for the scorer. These anchoring examples provided sources for immediate comparisons for the scorer, thus improving reliability. The intonation subtest was scored by comparison with a strobotuner, with the differences being recorded in cents. Vibrato was scored by comparison with a metronome. Pre-recorded models were provided the student subjects in the "Embouchure Flexibility" and "Tongue and Finger Flexibility" subtests. The students listened to the models and then tried to duplicate the performances heard on the tape recording.

The pilot test was administered by four persons to one hundred flutists. Several minor adjustments in the test and procedures were made prior to the final test administration. Fourteen testors and one hundred and eleven junior and senior high students were involved in the administration of the final form.

Boulton reports a test-retest reliability estimate using one judge as ranging from .88 on the dexterity subtest

to .40 on the intonation subtest. Repeated scoring reliability for one judge auditioning live and recorded versions of the same performance ranged from .78 to .99 among all sections. Content validity is based on an approval rate of over 70 per cent of the one hundred and two questionnaires returned.

The inclusion of an example-anchored scale for the tone quality subtest is unique to this instrumental music performance evaluation instrument. This procedure could be used more extensively in other performance evaluation instruments to reduce scorer subjectivity.

Kidd[1] developed an instrument to evaluate specific trombone performance skills for elementary and junior high school students. An examination of the forty-three available trombone solos in Grades I and II of the Selective Music Lists of 1963 revealed fifty different skills in the areas of range (high and low), articulation (single and legato tonguing) and slide technique (operation of the slide and "F" attachment together or separately).

Four preliminary forms of fifty excerpts each were constructed, which were administered to thirty student trombonists. Each excerpt was short, usually consisting of one musical phrase. The responses were tape recorded and adjudicated by a panel of three professional trombonists.

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[1]Robert Lee Kidd III, "The Construction and Validation of a Scale of Trombone Performance Skills" (PhD dissertation, University of Illinois at Urbana-Champaign, 1975).

Items indicating the smallest average deviation from the mean were retained for inclusion in the final forms. The two final forms were administered and judged in the same manner.

Kidd reports interjudge reliability for the two forms as .923 and .910. Both coefficients were found to be significant at the .001 level. The equivalent-forms reliability was .985. Criterion-related validity was determined by computing the Spearman Rank-Order Correlation Coefficient of teacher rankings of the students. The r_s for the three largest groups of ranked students ranged from .857 to .964.

A possible weakness in the study lies in the choice of adjudicators, who had little if no experience with elementary and junior high students. Their expectations could have been too high during the first of the twelve judging sessions, requiring a lowering of standards for subsequent sessions.

Another possible weakness is due to the inclusion of sixth and seventh grade students in the study. Students do not generally enter solo and ensemble contests during their first and second years of playing, yet the excerpts were taken from a contest list. Many of the test items are not playable by most of these students. For instance, the upper performance register range was A Flat^1, which is not comfortable and often not even attainable for most young players. It is possible that the reliability of the test was compromised by use of these students.

Summary

All of the studies reviewed above were designed for evaluation of instrumental music performance at the public school level and were limited to evaluation of from one to eight aspects of performance. The present thesis is the first to attempt to evaluate the gestalt of musical performance for a specific college student population.

Chapter 3

DEVELOPMENT AND ANALYSIS OF THE PRELIMINARY FORMS

The preliminary forms were developed in six stages: 1) an inquiry form established the behavioral objectives and the musical bases for composition of the test items; 2) the forms were constructed; 3) the forms were administered; 4) the results were judged; 5) the results were scored; and 6) the data were compiled.

Inquiry Form

The examiner constructed a preliminary cover letter and inquiry form. Appendix A contains the preliminary cover letter; Appendix B contains the preliminary inquiry form. An attempt was made to make the inquiry form comprehensive, comprising all possible methods and categories of materials related to performance evaluation. Ninety-five trombonists who teach trombone on the baccalaureate level were selected to receive the materials. They were chosen at random from two sources.[1] The respondent population represented all geographic areas of the continental United States, excluding Alaska.

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[1]Craig W. Short, ed., Dictionary of Music Faculties in Colleges and Universities, 1974-76 (Binghamton, New York: College Music Society, 1976); International Trombone Association Membership Directory, 1976.

The materials were piloted with twenty persons chosen at random from the respondent population. Seventeen responses were returned. An analysis of the data indicated the need for a slight revision of the inquiry form. The categories of excerpts: "Concert Band/Wind Ensemble Excerpts" and "Small Ensemble Excerpts," and Sight Reading: "Chamber Works Using Trombone" were deleted from the final inquiry form due to the paucity of responses. Appendix C contains the revised inquiry form. The cover letter was not revised.

The cover letter and revised inquiry form were mailed to the remaining seventy-five persons. A reminder letter and an additional copy of the inquiry form were mailed one week after the deadline to persons who did not respond to the initial request. A second reminder letter plus another copy of the inquiry form was mailed two weeks later to the remaining non-respondents. Appendix D contains the reminder letter.

Forty-nine useful responses to the preliminary and revised inquiry forms were returned. Eight inquiry forms were returned by persons not wishing to participate. Eleven persons were no longer teaching trombone on the college level. Four letters were returned by the United States Postal Service as undeliverable. Twenty-three persons did not respond to the three requests.

The inquiry form data were compiled. Two pairs of preliminary forms, one each for tenor and bass trombone,

were constructed. Pieces receiving the highest frequency of mention in each category were selected as compositional models, upon which the test items were composed or selected. Table 1 contains a listing of the ten most frequently mentioned pieces in each category. All of the music in the manuals was composed specifically for the project with exception of the orchestral excerpts, which were authentic. The examiner attempted to retain the composer's style and the configuration of the pieces used as bases for the composition of test items. Permission to use items based on copyrighted music was requested and granted by copyright owners. Appendix E contains a sample letter sent to copyright owners.

The "Inventory of Technical Skills" provided the following behavioral objectives which were incorporated in the test items:

Range:	Tenor Trombone-	FF to d^1
	Bass Trombone-	CC to b flat^1
Transposition:		Tenor and Alto Clefs
Avant Garde Techniques:		Microtones and Multiphonics

The tenor trombone forms were based on the following compositions:

I. Prepared Solos with Piano Accompaniment

A. Hindemith Sonata: Slow and Fast Movements
B. Handel Concerto in F Minor: Slow and Fast Movements

II. Prepared Unaccompanied Solos

A. Bernstein Elegy for Mippy II
B. Berio Sequenza V

Table 1

The Most Frequently Mentioned Selections in Each Inquiry Form Category

Composition	Composer	Frequency of Mention
Tenor Trombone Solos With Piano Accompaniment		
Sonata	Hindemith	26
Concerto in F Minor	Handel-Lafosse	14
Ballade	Bozza	10
Andante et Allegro	Barat	8
Sonata	Davidson	8
Morceau Symphonique	Guilmant	8
Sonatas	Galliard	8
Sonatas	Marcello	8
Sonatina	Serocki	8
Cavatine	Saint-Saens	7
Bass Trombone Solos With Piano Accompaniment		
Sonata	McCarty	20
Sonata	Hindemith	18
Sonata	Wilder	18
Sonatina (Tuba)	Stevens	10
Concerto	Lebedev	8
Canzoni	Frescobaldi	6
Morceau Symphonique	Guilmant	7
Fantasie Concertante	Casterade	6
Sonatas	Galliard	6
Allegro et Finale	Bozza	5
Unaccompanied Tenor Trombone Solos		
Sequenza V	Bereo	21
Elegy for Mippy II	Bernstein	20
Cello Suites	Bach	18
Sonata	Childs	14
Sonata Breve	Hartley	8
Aanraking (Contact)	Jong	8
Extase	Yoshioka	7
Solo for Sliding Trombone	Cage	4
Partita	Presser	4
Suite With Fanfares	Presser	4

Table 1 (Continued)

Composition	Composer	Frequency of Mention
Unaccompanied Bass Trombone Solos		
Canto II	Adler	26
Sonata Breve	Hartley	25
Cello Suites	Bach	25
Revelstoke Impressions	Johnston	10
Three Pieces	Cope	6
Four Comments	Blank	4
Exegesis	Brink	2
Variazioni piccola	Croley	2
Lyric Etude	Dedrick	2
Progressive Etude	Rahn	2
Caprice	Raph	2
Rock	Raph	2
Tuba Mirum	Sacco	2
Tenor Trombone Method Books		
Melodius Etudes	Bordogni/Rochut	47
Studies in Clefs	Blazhevich	38
60 Selected Studies	Kopprasch	17
Complete Method	Arban	16
Cello Suites	Bach	10
36 Studies	Blume	9
School of Sight Reading	Lafosse	8
26 Sequences	Blazhevich	6
Selected Studies	Voxman	6
30 Etudes Modernes	Couillaud	5
Method	Lafosse	5
Bass Trombone Method Books		
Melodius Etudes	Bordogni/Rochut	37
36 Studies for Trombone With F Attachment	Blume/Fink	24
70 Progressive Studies	Gillis	14
New Method for the Modern Bass Trombone	Aharoni	12
20 Etudes	Gillis	11
Legato Studies for Bass Trombone and Tuba	Fink	9

Table 1 (Continued)

Composition	Composer	Frequency of Mention
Cello Suites	Bach	8
Etudes for Bass Trombone	Pederson	7
Complete Method	Arban	6
Selected Studies	Kopprasch/Fote	6
Shifting Meter Studies	Ostrander	6
20 Studies	Stephanovsky/Brown	6
Tenor Trombone Symphonic Excerpts		
Bolero	Ravel	23
"Tuba Mirum" from Requiem	Mozart	17
Hungarian March	Berlioz	12
Tannhauser	Wagner	12
Third Symphony	Mahler	10
Fifth Symphony	Beethoven	8
Third Symphony	Schumann	8
William Tell	Rossini	6
Die Walkure	Wagner	5
First Symphony	Brahms	4
Fourth Symphony	Brahms	4
Bass Trombone Symphonic Excerpts		
Hungarian March	Berlioz	13
La Gaza Ladra	Rossini	12
Tannhauser	Wagner	11
William Tell	Rossini	8
Die Walkure	Wagner	7
Till Eulenspiegels Lustige Streiche	Strauss	6
Fourth Symphony	Tchaikovsky	6
Concerto for Orchestra	Bartok	5
First Symphony	Brahms	5
Fourth Symphony	Brahms	5
Tenor Trombone Sight Reading		
School of Sight Reading	Lafosse	33
Duets	Blazhevich	6
Duets	Blume	5

Table 1 (Continued)

Composition	Composer	Frequency of Mention
Selected Studies	Voxman	5
Duets	Amsden	4
15 Etudes de Rhythm	Bitsch	4
60 Studies	Kopprasch	4
24 Studies	Paudert	4
Cello Suites	Bach	3
9 Progressive Studies	Dieppo	3
Bass Trombone Sight Reading		
School of Sight Reading	Lafosse	31
Sightreading Studies	Dufresne	10
Cello Suites	Bach	9
Duets	Blume	7
Selected Studies	Kopprasch/Fote	6
20 Etudes	Gillis	5
Shifting Meter Studies	Ostrander	5
70 Studies (Tuba)	Blazhevich	3
221 Progressive Studies	Cimera	3
12 Etudes	Delguiduce	3

III. Prepared Etudes

A. Bordogni/Rochut Melodius Etudes, Book II: Slow Tempo
B. Blazhevich Clef Studies: Fast Tempo

IV. Orchestral Excerpts

A. Mozart "Tuba Mirum" from Requiem
B. Ravel Bolero
C. Berlioz Hungarian March

V. Sight Reading

Lafosse School of Sight Reading, Book C: Legato and Staccato pieces

Appendix F contains the tenor trombone preliminary forms.

The bass trombone forms were based on the following compositions:

I. Prepared Solos with Piano Accompaniment

A. Hindemith Sonata: Slow and Fast Movements
B. McCarty Sonata: Slow Movement
C. Wilder Sonata: Fast Movement

II. Prepared Unaccompanied Solos

A. Bach Cello Suites: Slow and Fast Movements
B. Hartley Sonata Breve
C. Adler Canto II

III. Prepared Etudes

A. Bordogni/Rochut Melodius Etudes, Book II: Slow Tempo
B. Blume/Fink: 36 Studies: Fast Tempo

IV. Orchestral Excerpts

A. Berlioz Hungarian March
B. Rossini La Gaza Ladra
C. Wagner Tannhauser

V. Sight Reading

Lafosse School of Sight Reading, Book C: Legato and Staccato pieces

Appendix G contains the bass trombone preliminary forms.

Due to their brevity, the McCarty and Wilder Sonatas were paired and judged as one test item. The Hartley Sonata Breve and Adler Canto II were treated in the same manner.

The manuals for both instruments contained three identical items: 1) Prepared Solos with Piano Accompaniment: Hindemith Sonata; 2) Prepared Etudes: Bordogni/Rochut: Melodius Etudes, Book II; and 3) Sight Reading: Lafosse School of Sight Reading, Book C. The inquiry form respondents indicated that the tenor and bass trombone subjects should possess reading ability in bass, tenor and alto clefs. Although the School of Sight Reading, Book C contains only bass and tenor clefs, the examiner used bass, tenor and alto clefs in the manuals. Sight reading was considered the appropriate medium for evaluating clef reading ability since the subjects could practice the music in the other categories.

The purpose of constructing parallel preliminary forms was to enable the examiner to select the item in each pair which exhibited the highest degree of inter-judge reliability, warranting inclusion in a final form. Therefore the orchestral excerpts were not used in the preliminary forms since there are no equivalents of Ravel's Bolero, "Tuba Mirum" from Mozart's Requiem, and the like. Performer fatigue was another factor influencing the decision to exclude the orchestral excerpts. One manual required a performance time of almost an hour.

A major purpose of the project was to construct an assessment process and instruments reflecting national standards and practices. The final inquiry form contained three possible areas of evaluation that were not used in the final test forms due to an insufficient number of responses. They are: 1) Trombone Solos with Accompaniment Other Than Piano; 2) Sight Reading: Solos or Etudes with Piano Accompaniment; and 3) Other Performance Assessment Means.

The performance order in each item pair was reversed after each administration of a manual. The performance sequence of the manuals as a whole was not altered, nor was the performance order within subtests.

Administration of the Preliminary Forms

The examiner practiced administration of the forms by administering them to two tenor and two bass trombone students. Several minor changes were made in the explanations, microphone placement and in scheduling. The subjects had been scheduled for forty-five minute sessions, but it was discovered that hour sessions were necessary.

The preliminary forms were administered to fifteen tenor and fifteen bass trombonists in Texas and Oklahoma during the spring semester, 1978. Most subjects received a financial remuneration of ten dollars as an incentive to practice and appear for the testing. The subject population consisted of two groups of students: 1) music education majors whose principal instrument is trombone and who were

currently enrolled in their final semester of required trombone study; and 2) college trombonists deemed by their instructors as possessing performance skills commensurate with this level. The procedures followed in the scheduling and administration of the manuals are discussed below:

1. College trombone instructors were contacted via long distance telephone and were requested to assist the examiner by providing names and telephone numbers of prospective student subjects. Permission was requested to use their studios for testing sites. The requests were granted.

2. The students identified through the previous step were contacted via long distance telephone and were invited to participate in the project. Students accepting the invitation were given a verbal explanation of the procedures. An appointment was made to administer a manual.

3. The student subjects received a follow-up letter containing relevant information, copies of all the music to be performed except sight reading, and a cassette tape recording of the piano accompaniments. Appendix H contains the follow-up letter.

4. The examiner arrived at each testing site approximately one hour before a testing session and arranged the recording/playback equipment, music stands and furniture. The procedures were briefly reviewed with each subject prior to testing. The subjects were allowed a short warm-up period before tuning to A-440 as given by the piano on the tape recording. The examiner stopped the tape machine

between item pairs to allow the subjects to rest, empty their instruments of moisture and ask questions. The subjects were allowed ten seconds to preview each sight reading item before performing.

6. The subjects were requested to complete and sign a Student Information and Consent Form (SICF). The SICF contained spaces for the subject's name, address, telephone number, the date and place of the testing, instrument (tenor or bass trombone), tape reel number, student code number, and the subject's instructor's rating. The subjects were requested to signify their agreement to the testing terms and conditions by signing in the prescribed area on the form. The subjects were assigned code numbers. The tenor trombone subjects were referred to as "T," followed by an Arabic numeral ranging from one to fifteen. The first tenor trombone subject was designated "T-1," the second was "T-2," progressing in numerical sequence to "T-15." The bass trombone subjects were coded in a similar manner, except they were referred to as "B." Appendix I contains the SICF.

7. The instructors were requested to rate each of their student's abilities by comparing them with their immediate past and present students enrolled in their final semester of required trombone study. The rating scale, entitled Instructor Rating Form (IRF), will be discussed later in this chapter. Appendix J contains the IRF.

The examiner administered all performances of the preliminary and final forms. The recording/playback equipment used in the project was a Sony 350 tape deck, Scott 299-D amplifier, Sony ecm-ee microphone, and two AR-2A speakers.

Thirty tapes, one for each student, were prepared prior to testing by recording the piano accompaniments on one channel only. During an administration of a manual the accompaniment was played back for the subject on that channel and was re-recorded with the subject on another channel. Each subject was recorded on a separate seven inch reel-to-reel tape at seven and one-half inches per second.

Adjudication of the Preliminary Forms

Three college trombone instructors whose major instrument is trombone rated the subjects' performances during four judging sessions of approximately four and one-half hours each. The examiner conducted all sessions. The judges were seated equidistantly from the playback equipment. Prior to the first session, the examiner explained the scoring procedures and answered questions. The judges did not audition the entirety of some performances of the longer pieces, but heard at least two-thirds of each performance before proceeding to the next item. The tenor trombone subjects were judged in their numerical sequence of "T-1" to "T-15." The bass trombone adjudication order progressed from "B-1" to "B-15."

The judges rated all of one subject's performances before proceeding to the next subject. The Item Adjudication Form (IAF) was used to rate the test items. The IAF was a five-point Likert-type horizontal scale consisting of the categories: 1) Highly Below Average; 2) Below Average; 3) Average; 4) Above Average; and 5) Highly Above Average. Each category contained ten equal spaces. The adjudicator was instructed to place a vertical mark in the space which indicated his assessment of the student's performance ability. Appendix K contains the IAF. Both forms of each test item were judged before proceeding to the next group of item pairs. For instance, the adjudicators rated Forms A and B (each form contained a slow and fast movement) of the Hindemith Sonata before proceeding to Forms A and B of the Handel Concerto in F Minor.

On completion of rating a subject's individual test items, the judges rated the subject's total performance using the Global Adjudication Form (GAF). The format of the GAF is identical to the IAF and the IRF. Appendix L contains the GAF.

Scoring Procedures

The examiner scored the results by counting spaces from left to right until the adjudicator's vertical mark was reached. Each space counted two points, making a possible perfect score of one hundred.

A Preliminary Forms Subject Profile (PFSP) was prepared for each subject. The PFSP contained: 1) a

square for the subject's code number; 2) four pairs of squares for the two forms, each square containing the judges' scores for one item on each form; 3) each judge's global rating; and 4) the subject's instructor's rating. Appendix M contains the PFSP.

Treatment of the Data

The data were used to select the final forms items and compute the preliminary evidence of reliability and validity. Table 2 contains the subjects' total scores and global ratings given by the judges, and the students' global ratings given by their trombone instructors.

Selection of Final Forms Items

The purpose of this step was to determine the item in each pair which possessed the highest degree of inter-judge agreement and therefore warranted inclusion in a final form. This was accomplished through the following steps:

1) The standard deviation for each item per student was calculated using the formula

$$a = \sqrt{\frac{(score_1\text{-mean score})^2 + (sc_2\text{-mn sc})^2 + (sc_3\text{-mn sc})^2}{2}}$$

2) The mean standard deviation for each item was calculated by adding the fifteen standard deviations from each item and dividing by fifteen.

Table 2

Total Scores and Global Ratings

TOTAL SCORES: TENOR TROMBONE

Subj.	T-1	T-2	T-3	T-4	T-5	T-6	T-7	T-8	T-9	T-10	T-11	T-12	T-13	T-14	T-15
J_1	174	124	145	138	186	162	164	101	295	204	256	187	128	127	133
J_2	160	187	130	153	173	162	132	155	198	163	147	150	186	132	149
J_3	141	163	100	119	152	147	176	130	268	258	277	151	130	88	131

GLOBAL RATINGS: TENOR TROMBONE

J_1	24	17	18	17	17	18	23	9	40	32	40	23	21	19	19
J_2	22	26	20	20	22	23	16	20	28	25	19	21	25	21	22
J_3	13	23	13	23	21	21	23	17	38	35	38	16	21	12	21
Inst.	28	29	21	41	43	42	46	24	46	39	41	28	35	29	27

TOTAL SCORES: BASS TROMBONE

Subj.	B-1	B-2	B-3	B-4	B-5	B-6	B-7	B-8	B-9	B-10	B-11	B-12	B-13	B-14	B-15
J_1	331	158	134	138	237	186	137	95	210	70	13	87	265	147	137
J_2	183	124	125	132	207	213	186	126	221	53	29	103	173	118	113
J_3	200	44	140	111	211	204	155	81	185	67	41	147	227	53	122

GLOBAL RATINGS: BASS TROMBONE

J_1	41	21	12	12	27	21	17	11	32	5	3	5	33	18	13
J2	29	9	16	17	25	30	24	18	28	7	2	12	28	10	15
J_3	26	10	15	19	25	29	16	9	23	10	3	18	27	8	14
Inst.	33	24	25	31	35	47	36	39	41	45	9	20	41	26	26

3) The item in each pair having the smaller average deviation was chosen for inclusion in a final form.

Table 3 contains the mean standard deviations for each item. The items with asterisks indicate the smaller average deviation. These were the items included in a final form. Appendix N contains the tenor trombone final forms. The bass trombone final forms are found in Appendix O.

Table 3

Mean Standard Deviations

Item	Tenor Trombone	Bass Trombone
IAA	4.80	5.16
IAB	4.46*	4.80*
IBA	4.68	4.97
IBB	4.51*	4.73*
IIAA	5.30*	5.62
IIBB	6.17	5.03*
IIBA	5.60	4.63
IIBB	5.49*	4.60*
IIIAA	5.10*	3.53*
IIIAB	5.33	3.90
IIIBA	5.10*	4.62*
IIIBB	5.79	5.81
VAA	4.05*	5.40
VAB	4.51	4.75*
VBA	5.04*	5.66
VBB	5.97	5.35*

Preliminary Evidence of Reliability

Preliminary evidence of inter-judge reliability was computed by determining Kendall's Coefficient of Concordance, W, for each of the final forms. Two groups of scores were tested for internal concordance: 1) the judges' total scores and 2) the judges' global ratings. The coefficients were tested for significance using the Friedman Two-Way Analysis of Variance procedure. Table 4 shows the correlation of the judges' total scores and global ratings, and the levels of significance.

Table 4

Correlation and Levels of Significance of Judges' Total Scores and Global Ratings

Form	W of Judges' Total Scores	Level of Significance
Tenor Trombone	.60	.03
Bass Trombone	.82	.002
	W of Judges' Global Ratings	
Tenor Trombone	.47	.14
Bass Trombone	.83	.001

The inter-judge reliability estimates for the bass trombone total scores and global ratings are quite high. Although the W of the tenor trombone total scores and global ratings are lower at .60 and .47, they still must

be considered acceptable due to the partially subjective nature of performance evaluation.

Preliminary Evidence of Validity

Preliminary evidence of validity was calculated by correlating the subjects' instructor ratings with the means of the three judges' global ratings using the Pearson product-moment coefficient of correlation, r. Table 5 contains each instructor's global ratings for his students and the means of the judges' global ratings.

Table 5

Instructors' Global Ratings and the Mean of the Judges' Global Ratings

Subject	Instructor Ratings	Mean of the Judges' Ratings
T-1	28	20
T-2	29	22
T-3	21	17
T-4	41	20
T-5	43	20
T-6	42	21
T-7	46	21
T-8	24	15
T-9	46	35
T-10	39	31
T-11	41	32
T-12	28	19
T-13	35	22
T-14	29	17
T-15	27	21
B-1	33	29
B-2	24	13
B-3	25	14
B-4	31	16
B-5	35	26
B-6	47	27
B-7	36	16

Table 5 (Continued)

Subject	Instructor Ratings	Mean of the Judges' Ratings
B-8	39	13
B-9	41	28
B-10	45	7
B-11	9	3
B-12	20	12
B-13	41	29
B-14	26	14
B-15	26	14

The correlation estimate for the tenor trombone final form was .605, $p < .01$. The estimate for the bass trombone final form was .597, $p < .025$. The instructors tended to rate their students considerably higher than the adjudicators. In every instance the instructor rating was higher than the mean of the judges' global ratings. This accounts for the relatively low correlation estimates.

Chapter 4

FINAL FORMS PROCEDURES AND DATA

The final forms were developed through the procedures discussed in the previous chapter. The first section of this chapter contains a discussion of the administration, judging and scoring of the final forms. The second section presents the data gleaned through the above procedures.

Administration of the Final Forms

The final forms were administered to thirty different subjects in Texas and Oklahoma during the fall semester, 1978. The subject selection and test administration procedures were identical to those followed in the preliminary forms, except the manual administration time was reduced to thirty minutes per subject. The time period was sufficient for most students; however, several subjects exceeded the time allotment by performing at exceptionally slow tempi, or by requiring a long warm-up period.

Adjudication and Scoring of the Final Forms

The three persons who adjudicated the preliminary forms judged the final forms. The final forms were rated during two sessions of approximately eight hours each, including intermissions. The tape recording auditions and scoring procedures were identical to those followed with the preliminary forms.

The examiner scored the final forms. The data were transferred to the Final Forms Student Profile (FFSP), an amended version of the Preliminary Forms Student Profile containing spaces for listing the judge, student code number, item scores and global ratings. Appendix P contains the FFSP. Table 6 presents the students' total scores and global ratings.

Treatment of the Data

Two types of inter-judge reliability are presented. Reliability coefficients were computed by determining Kendall's Coefficient of Concordance, W, for each of the two final forms. W was computed using the judges' total test scores and the judges' global ratings. The levels of significance were computed using the Friedman Two-Way Analysis of Variance procedure. These data are shown in Table 7.

Table 7

Concordance of Judges' Total Scores and Global Ratings

Form	W of Judges' Total Scores	Level of Significance with 14 Degrees of Freedom
Tenor Trombone	.90	.0006
Bass Trombone	.81	.002
	W of Judges' Global Ratings	
Tenor Trombone	.88	.0007
Bass Trombone	.85	.001

Table 6

Total Scores and Global Ratings

TOTAL SCORES: TENOR TROMBONE

Subj.	T-1	T-2	T-3	T-4	T-5	T-6	T-7	T-8	T-9	T-10	T-11	T-12	T-13	T-14	T-15
J_1	222	198	206	410	550	418	232	230	148	322	416	402	392	428	576
J_2	192	188	190	368	444	320	184	198	190	200	326	314	380	408	448
J_3	154	138	166	402	408	264	132	100	118	118	258	234	350	296	424

GLOBAL RATINGS: TENOR TROMBONE

J_1	20	22	22	52	56	50	28	28	18	36	50	48	42	44	66
J_2	20	20	20	44	50	40	20	22	24	22	36	40	44	46	56
J_3	14	12	16	48	48	26	16	10	10	14	30	30	36	40	50
Inst.	52	80	82	84	78	22	42	30	38	34	40	56	74	54	78

TOTAL SCORES: BASS TROMBONE

Subj.	B-1	B-2	B-3	B-4	B-5	B-6	B-7	B-8	B-9	B-10	B-11	B-12	B-13	B-14	B-15
J_1	808	366	296	354	282	370	186	500	308	328	138	534	412	94	218
J_2	430	356	240	340	192	124	170	284	206	208	208	376	354	204	244
J_3	394	432	206	348	210	396	114	352	214	274	88	452	356	80	186

GLOBAL RATINGS: BASS TROMBONE

J_1	66	44	28	34	24	44	20	48	34	36	14	62	52	10	26
J_2	50	40	20	42	18	54	20	38	18	20	20	48	40	20	32
J_3	50	46	22	44	22	60	10	40	22	42	10	54	42	10	24
Inst.	80	36	42	82	54	64	82	90	30	56	42	56	42	58	42

Inter-judge reliability estimates were also obtained by calculating correlation coefficients between pairs of total scores and between pairs of global ratings using the Pearson product-moment coefficient of correlation, r. Levels of significance derived from a probability table[1] are reported. Table 8 contains these data.

Table 8

Inter-Judge Reliability Estimates Between Pairs of Total Scores and Pairs of Global Ratings, Levels of Significance

Tenor Trombone Total Scores	
$r_{12} = .942$	$p < .001$
$r_{13} = .890$	$p < .001$
$r_{23} = .954$	$p < .001$
Tenor Trombone Global Ratings	
$r_{12} = .895$	$p < .001$
$r_{13} = .893$	$p < .001$
$r_{23} = .920$	$p < .001$
Bass Trombone Total Scores	
$r_{12} = .726$	$p < .005$
$r_{13} = .795$	$p < .001$
$r_{23} = .641$	$p < .010$

[1]Wayne W. Daniel, Applied Nonparametric Statistics (Boston: Houghton Mifflin Company, 1978), p. 466.

Table 8 (Continued)

Bass Trombone Global Ratings	
$r_{12} = .796$	$p < .005$
$r_{13} = .865$	$p < .001$
$r_{23} = .873$	$p < .001$

Ten correlations were significant at the .001 level. These values are spuriously high since they were final forms items initially selected on the basis of possessing the higher degree of inter-judge agreement.

Content validity was established by using the consensus of the respondent population's replies to the inquiry form as the basis for composition or selection of test items.

Criterion-related validity was calculated by comparing each student's instructor rating with the mean of the judges' global ratings using the Pearson product-moment coefficient of correlation formula. Table 9 contains these data.

Table 9

Instructor Ratings and the Mean of the Judges' Global Ratings

Subject	Instructor Rating	Mean of the Judges' Global Ratings
T-1	52	15
T-2	80	15
T-3	82	19
T-4	84	48
T-5	78	51
T-6	22	39

Table 9 (Continued)

Subject	Instructor Rating	Mean of the Judges' Global Ratings
T-7	42	21
T-8	30	20
T-9	38	17
T-10	34	24
T-11	40	39
T-12	56	39
T-13	74	41
T-14	54	43
T-15	78	57
B-1	80	55
B-2	36	43
B-3	42	23
B-4	82	40
B-5	54	21
B-6	64	53
B-7	82	17
B-8	90	42
B-9	30	25
B-10	56	33
B-11	42	15
B-12	56	55
B-13	42	45
B-14	58	13
B-15	42	27

The criterion-related validity of the tenor and bass trombone forms were .33 and .27, respectively.

The range of the raw test scores in the tenor trombone final form was 100 to 576, out of a possible 900. The standard deviations ranged from 21.02 to 102.65, with a median standard deviation of 71.14. Table 10 contains the means and standard deviations of the tenor trombone final form total scores.

Table 10

Means and Standard Deviations of the Tenor Trombone Final Form Total Scores

Subject	Mean	Standard Deviation
T-1	189.33	34.07
T-2	174.66	32.14
T-3	187.33	20.13
T-4	393.33	22.30
T-5	467.33	73.81
T-6	334.00	77.94
T-7	184.33	50.16
T-8	176.00	67.73
T-9	152.00	36.16
T-10	213.33	102.65
T-11	333.33	79.25
T-12	316.66	84.03
T-13	374.00	21.63
T-14	377.33	71.14
T-15	482.66	81.71

The range of the judges' global ratings for the tenor trombone final form was 10-66. The highest attainable score was 100. The standard deviations ranged from 3.05 to 12.05. The median standard deviation was 6.11. The means and standard deviations of the judges' global ratings may be found in Table 11.

Table 11

Means and Standard Deviations of the Judges' Global Ratings: Tenor Trombone Final Form

Subject	Mean	Standard Deviation
T-1	18.00	3.46
T-2	18.00	5.29
T-3	19.33	3.05
T-4	48.00	4.00

Table 11 (Continued)

Subject	Mean	Standard Deviation
T-5	51.33	4.16
T-6	38.66	12.05
T-7	21.33	6.11
T-8	20.00	9.16
T-9	17.33	7.02
T-10	24.00	11.13
T-11	38.66	10.26
T-12	39.33	9.01
T-13	40.66	4.16
T-14	43.33	3.05
T-15	57.33	8.08

The raw test scores in the bass trombone final form were 80-808, the highest possible score being 900. The standard deviations ranged from 7.02 to 229.33. The median standard deviation was 60.09. The above data are contained in Table 12.

Table 12

Means and Standard Deviations of the Bass Trombone Final Form Total Scores

Subject	Mean	Standard Deviation
B-1	544.00	229.33
B-2	384.66	41.29
B-3	247.33	45.44
B-4	347.33	7.02
B-5	228.00	47.62
B-6	296.66	150.09
B-7	156.66	37.80
B-8	378.66	110.44
B-9	242.66	56.72
B-10	270.00	60.09
B-11	144.66	60.27
B-12	454.00	79.01

Table 12 (Continued)

Subject	Mean	Standard Deviation
B-13	374.00	32.92
B-14	126.00	67.91
B-15	216.00	29.05

The range of the judges' global ratings for the bass trombone final form was 10-66, identical to the tenor trombone global ratings. The highest possible rating was 100. The standard deviations ranged from 3.05 to 11.37, with the median standard deviation being 5.77. The above data are contained in Table 13.

Table 13

Means and Standard Deviations of the Judges' Global Ratings: Bass Trombone Final Form

Subject	Mean	Standard Deviation
B-1	55.33	9.23
B-2	43.33	3.05
B-3	23.33	4.16
B-4	40.00	5.29
B-5	21.33	3.05
B-6	52.66	8.08
B-7	16.66	5.77
B-8	42.00	5.29
B-9	24.66	8.32
B-10	32.66	11.37
B-11	14.66	5.03
B-12	54.66	7.02
B-13	44.66	6.42
B-14	13.33	5.77
B-15	27.33	4.16

Chapter 5

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Summary

The purpose of the study was to: 1) objectify the summational skills level considered necessary for music education students' completion of baccalaureate trombone study requirements; 2) identify commensurate repertoire appropriate for use in an evaluation process; and 3) construct and evaluate an assessment process and instrument corollary to the above procedures.

An examination of the literature of tests and measurements in music revealed four objective performance evaluation instruments applicable for use at the secondary school level. There were no performance measures for specific instruments for a specific college population.

The study was implemented in three major stages: 1) an inquiry form established behavioral objectives and the musical bases for composition or selection of test items; 2) two preliminary test forms each for tenor and bass trombone were developed and refined; and 3) one final form each for tenor and bass trombone was constructed, administered, adjudicated, and the data reported.

Conclusions

The conclusions are divided into three sections: 1) test item selection; 2) inter-judge reliability; and 3) validity.

Test item selection. The examiner is doubtful that the inquiry form elicited accurate data in some sections. It is suspected that some respondents were not acquainted with five pieces in some categories and therefore listed selections they had heard or read about, but did not actually use with their students. The Berio Sequenza V is, in the examiner's opinion, too difficult for baccalaureate music education majors. Also doubtful is extensive use of the Hindemith Sonata for bass trombone students. The judges and the six college trombone instructors whose students participated in the project concurred with the examiner.

The paucity of different responses to the sight reading portion of the inquiry form substantiates the examiner's impression that sight reading is usually tested informally, if at all. One respondent stated, "When I need sight reading material, I go to my files and look for something on the student's level." It is quite possible that some respondents specified the School of Sight Reading because of the title and not because of actual use in assessing sight reading ability.

The examiner and adjudicators agreed that the majority of students had little if any experience with orchestral excerpts. A generalization concerning the use of orchestral excerpts in an assessment process and instrument designed to reflect national practices cannot be made, since students from only five colleges were represented in the final forms.

Reliability. The inter-judge reliability estimates for the judges' total scores and the judges' global ratings were .90 and .88, respectively. The estimates for the bass trombone final form were .88 and .85. The levels of significance were all below .01.

The inter-judge reliability estimates between pairs of total scores and between pairs of global ratings ranged from .64 to .95, with a median estimate of .89. Ten of the twelve correlations were significant at the .01 level.

The above reliability estimates are quite high, particularly since evaluation of musical performance is partially subjective. The correlations seem to indicate that the evaluation instruments developed in this study are reliable measures of the gestalt of trombone performance for the subject population.

Validity. The criterion-related validity estimates for the tenor and bass trombone final forms were .33 and .27. Both coefficients are exceptionally low, and may be attributed to three factors: 1) most students did not practice the manuals as much as was necessary for

acceptable performances; 2) several items seemed too difficult for baccalaureate level students, and 3) the instructors' global ratings were based on daily observations of the students, and as a result, tended to be considerably higher than the judges' global ratings. There were only three instances out of thirty where the judges' mean global rating was higher than an instructor's rating.

Content validity was established by using the consensus of responses to the inquiry form as basis for the construction of evaluation instruments containing balanced, representative samplings of the curricula content.

Recommendations

The project was a pilot study. The literature of tests and measurements in music contained no mention of an evaluation instrument designed to measure the gestalt of performance ability for a specific college population on a specific instrument at a prescribed level. The recommendations listed below are divided into two areas: 1) recommendations for improvement of procedures and materials related to the present study; and 2) recommendations for further research.

Recommendations for Improvement of Procedures and Materials Related to the Present Study

1. The use of pre-recorded piano accompaniments standardized one aspect of the test procedures. However, this restricted each subject to phrase with the accompanist

instead of the reverse. The use of an accompanist to rehearse and accompany each subject during the test should be considered.

2. The parallel forms for the pieces containing piano accompaniments were too similar. Future endeavors related to this study should have greater diversity within parallel forms items.

3. Test reliability was jeopardized by using a small subject population. The manuals should be administered to a larger number of subjects.

4. Rater reliability should be investigated by having the panel of judges repeat the adjudication process with the same subjects after an interval of several weeks. Also, use of multiple sets of judges should be investigated.

5. National norms could be developed for the manuals. This would necessitate a considerably larger subject population than was feasible with the present study.

6. The subjects should have had a longer period to practice, possibly a semester, before testing.

7. There were no controls placed on the amount of subject practice time. It was apparent to the examiner and judges that some students had practiced the music and some had virtually sight read. Also, some students received assistance from their instructors while others did not. As a result, the sight reading portion of the manuals was the only controlled aspect of the project. Future examiners should consider specifying a prescribed amount of practice time for all subjects.

Recommendations for Further Research

1. Manuals similar in construction to the present study should be developed for administration to college students prior to admission to junior standing. A performance test could be used in conjunction with music theory grades, and the like, to counsel a student in regard to continuing to major in music.

2. Scales of performance skills should be developed to be administered to prospective students and used for counseling and placement, and as a diagnostic tool.

3. The judges could rate the subjects' senior recitals via a tape recording using scales similar to those developed in this study. Recital scores plus scores on an objective performance measure would yield a more accurate indication of a subject's performance ability.

4. Performance rating procedures and materials developed in the present study should be considered for use with other instruments at various levels.

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APPENDIXES

APPENDIX A

PRELIMINARY COVER LETTER

Under the direction of Dr. Irvin Wagner of the University of Oklahoma School of Music, I am initiating a doctoral study concerned with the development of an assessment process for evaluating the competency level of undergraduate music education majors whose principal instrument is tenor or bass trombone. The first part of the study will require the identification of: 1) the technical skills, or general trombone performance competency level considered necessary for fulfillment of applied music requirements for the bachelor's degree; 2) repertoire (prepared works and sight reading) considered appropriate for evaluation of the competency level; and 3) less traditional means of assessment. In this regard, I am requesting your cooperation in the completion of the enclosed inquiry form.

The inquiry form is divided into three sections of equal importance, and should be completed in a thoughtful though spontaneous manner. The information elicited by means of this process will be analyzed and an evaluation instrument developed and validated.

Aware of the many demands on your time, it would be appreciated if the enclosed form was returned in the enclosed addressed, stamped envelope by , or by return mail should it not be possible for you to participate. Perhaps as something of an incentive, all participants will receive an abstract of the study and an Assessment Manual for Evaluation of Baccalaureate Level Trombone Performance as the project is completed.

Thank you, beforehand, for your cooperation in this endeavor.

Sincerely,

Bill Haskett, Chairman
Fine Arts Department

Enclosures

APPENDIX B

PRELIMINARY INQUIRY FORM

INQUIRY FORM

IDENTIFICATION OF TECHNICAL SKILLS AND ASSESSMENT REPERTOIRE AND MEANS

All requests for information refer to music education majors whose principal instrument is tenor or bass trombone, and who are currently enrolled in their last semester of required applied study.

I. AN INVENTORY OF TECHNICAL SKILLS

List the skills which you require of your students in their last semester of required study. The following categories are provided as sample skill areas. Please use the remainder of the page to list and/or describe other skills required of your students.

Comfortable performance range:	tenor trombone upper range_____ lower range_____ bass trombone upper range_____ lower range_____
Transposition:	tenor clef yes__ no__ alto clef yes__ no__ other (specify)_____
Multiple Tonguing:	double yes__ no__ triple yes__ no__ flutter yes__ no__ other (specify)_____
Avant-Garde Techniques:	microtones yes__ no__ polyphonic sounds yes__ no__ other (specify)_____

II. REPERTOIRE APPROPRIATE FOR EVALUATION

The evaluation instrument will contain representative works from some or all of the following categories. Selection of pieces will be contingent on respondents' replies.

A. List solos representative of various periods and styles which you would expect your students to be able to perform during their last semester of applied study. The pieces should be considered appropriate for a senior recital.

Trombone and Piano

Tenor Trombone	Bass Trombone
1.	1.
2.	2.
3.	3.
4.	4.
5.	5.

Trombone and Other Accompanying Instrument(s)

Tenor Trombone	Bass Trombone
1.	1.
2.	2.
3.	3.
4.	4.
5.	5.

Unaccompanied Pieces

Tenor Trombone	Bass Trombone
1.	1.
2.	2.
3.	3.
4.	4.
5.	5.

B. List method books representative of your standards which should be completed prior to or during the student's last semester of required study.

Tenor Trombone	Bass Trombone
1.	1.
2.	2.
3.	3.
4.	4.
5.	5.

C. List specific excerpts which you use for evaluation.

Symphonic Excerpts

Tenor Trombone	Bass Trombone
1.	1.
2.	2.
3.	3.
4.	4.
5.	5.

Concert Band/Wind Ensemble Excerpts

Tenor Trombone	Bass Trombone
1.	1.
2.	2.
3.	3.
4.	4.
5.	5.

Small Ensemble Excerpts

Tenor Trombone	Bass Trombone
1.	1.
2.	2.
3.	3.
4.	4.
5.	5.

III. INDEPENDENT UTILIZATION OF PERFORMANCE SKILLS

A. SIGHT READING

The evaluation instrument will contain sight reading materials. Please list pieces in the following categories which are reflective of your standards for students in their final semester of required applied study.

Solos or Etudes With Piano Accompaniment

Tenor Trombone	Bass Trombone
1.	1.
2.	2.
3.	3.
4.	4.
5.	5.

Unaccompanied Solos or Etudes

Tenor Trombone	Bass Trombone
1.	1.
2.	2.
3.	3.
4.	4.
5.	5.

Chamber Works Using Trombone

Tenor Trombone	Bass Trombone
1.	1.
2.	2.
3.	3.
4.	4.
5.	5.

B. OTHER PERFORMANCE ASSESSMENT MEANS

The purpose of this item is to identify other means of assessment which are not so commonly used. The following items are samples of some less traditional evaluative means, some or all of which you might presently use. Please supply the requested information.

Do you use any evaluative means other than those previously covered in this inquiry form? Yes__ No__

If the answer is "Yes," do you require your students to:

1. Perform an accompanied piece prepared without faculty assistance? Yes__ No__
   Name(s) of piece(s)_____

2. Perform an unaccompanied piece prepared without faculty assistance? Yes__ No__
   Name(s) of piece(s)_____

3. Improvise on a given melody? Yes__ No__
   Please enclose a copy or state melody and source.
   _____

4. Improvise on a given chord progression? Yes__ No__ Please enclose a copy, state source or write the progression_____
   _____

Describe other assessment means not previously covered in this inquiry form which you presently use or might use in the near future. Use the top of the next page if necessary.

OTHER PERFORMANCE SKILLS ASSESSMENT MEANS (CONTINUED)

Please provide the following information:

1. Principal instrument: Tenor trombone__ Bass trombone__
2. College education: Masters degree__ Doctors degree__
3. Number of years college teaching experience__
4. Number of music education majors whose principal instrument is trombone__
5. Number of students who will be enrolled in their last semester of required applied study in fall, 1977__
6. Would you allow me to administer the assessment instrument to some of your students? Yes__ No__

Please return to:

Bill Haskett
2000 Lenamon Drive
Waco, Texas 76710

APPENDIX C

REVISED INQUIRY FORM

INQUIRY FORM

IDENTIFICATION OF TECHNICAL SKILLS AND ASSESSMENT REPERTOIRE AND MEANS

All requests for information refer to music education majors whose principal instrument is tenor or bass trombone, and who are currently enrolled in their last semester of required applied study.

I. AN INVENTORY OF TECHNICAL SKILLS

List the skills which you require of your students in their last semester of required study. The following categories are provided as sample skill areas. Please use the remainder of the page to list and/or describe other skills required of your students.

Comfortable performance range:	tenor trombone upper range_____ lower range_____ bass trombone upper range_____ lower range_____
Transposition:	tenor clef yes__ no__ alto clef yes__ no__ other (specify)_____
Multiple Tonguing:	double yes__ no__ triple yes__ no__ flutter yes__ no__ other (specify)_____
Avant-Garde Techniques:	microtones yes__ no__ polyphonic sounds yes__ no__ other (specify)_____

II. REPERTOIRE APPROPRIATE FOR EVALUATION

The evaluation instrument will contain representative works from some or all of the following categories. Selection of pieces will be contingent on respondents' replies.

A. List solos representative of various periods and styles which you would expect your students to be able to perform during their last semester of applied study. The pieces should be considered appropriate for a senior recital.

Trombone and Piano

Tenor Trombone	Bass Trombone
1.	1.
2.	2.
3.	3.
4.	4.
5.	5.

Trombone and Other Accompanying Instrument(s)

Tenor Trombone	Bass Trombone
1.	1.
2.	2.
3.	3.
4.	4.
5.	5.

Unaccompanied Pieces

Tenor Trombone	Bass Trombone
1.	1.
2.	2.
3.	3.
4.	4.
5.	5.

B. List method books and/or etude collections representative of your standards which should be completed prior to or during the student's last semester of required study.

Tenor Trombone	Bass Trombone
1.	1.
2.	2.
3.	3.
4.	4.
5.	5.

C. List specific symphonic excerpts which you use for evaluation. Please do not list anthologies.

Tenor Trombone	Bass Trombone
1.	1.
2.	2.
3.	3.
4.	4.
5.	5.

III. INDEPENDENT UTILIZATION OF PERFORMANCE SKILLS

A. SIGHT READING

The evaluation instrument will contain sight reading materials. Please list pieces in the following categories which are reflective of your standards for students in their final semester of required applied study.

Solos or Etudes With Piano Accompaniment

Tenor Trombone	Bass Trombone
1.	1.
2.	2.
3.	3.
4.	4.
5.	5.

Unaccompanied Solos or Etudes

Tenor Trombone	Bass Trombone
1.	1.
2.	2.
3.	3.
4.	4.
5.	5.

B. OTHER PERFORMANCE ASSESSMENT MEANS

The purpose of this item is to identify other means of assessment which are not so commonly used. The following items are samples of some less traditional evaluative means, some or all of which you might presently use. Please supply the requested information.

Do you use any evaluative means other than those previously covered in this inquiry form? Yes__ No__

If the answer is "Yes," do you require your students to:

1. Perform an accompanied piece prepared without faculty assistance? Yes__ No__
   Name(s) of piece(s)_____

2. Perform an unaccompanied piece prepared without faculty assistance? Yes__ No__
   Name(s) of piece(s)_____

3. Improvise on a given melody? Yes__ No__
   Please enclose a copy or state melody and source.

   _____

4. Improvise on a given chord progression? Yes__ No__
   Please enclose a copy, state source, or write the progression_____

Describe other assessment means not previously covered in this inquiry form which you presently use or might use in the future. Use the top of the next page.

OTHER PERFORMANCE SKILLS ASSESSMENT MEANS (CONTINUED)

Please provide the following information:

1. Principal instrument: Tenor trombone__ Bass trombone__
2. College education: Masters degree__ Doctors degree__
3. Number of years college teaching experience__
4. Number of music education majors whose principal instrument is trombone__
5. Number of students who will be enrolled in their last semester of required applied study in fall, 1977__ Spring, 1978__
6. Would you allow me to administer the assessment instrument to some of these students? Yes__ No__

Please return to:

Bill Haskett
2000 Lenamon
Waco, Texas 76710

APPENDIX D

REMINDER LETTER

Dear .

I have not received the inquiry form mailed to you on . The participation in this study of all respondents is necessary for the identification of national standards and practices. This information can be helpful to us all.

Enclosed, please find duplicate copies of the materials previously mailed to you. Please complete the inquiry form and return to me by . As requested in the cover letter, please return the materials in the enclosed, stamped envelope should it not be possible for you to participate.

Thank you, in advance, for your kind consideration of my request.

Sincerely,

Bill Haskett, Chairman
Fine Arts Division

Dear .

I have not received the inquiry form mailed to you on . The participation in this study of all respondents is necessary for the identification of national standards and practices. This information can be helpful to us all.

Enclosed, please find duplicate copies of the materials previously mailed to you. Please complete the inquiry form and return to me by . As requested in the cover letter, please return the materials in the enclosed, stamped envelope should it not be possible for you to participate.

Thank you, in advance, for your kind consideration of my request.

Sincerely,

Bill Haskett, Chairman
Fine Arts Division

APPENDIX E

SAMPLE LETTER SENT TO COPYRIGHT OWNERS

Dear

I am engaged in writing a doctoral dissertation in music at the University of Oklahoma in Norman. My topic deals with the development of a trombone performance test to be administered to college level trombonists.

I have written two short pieces based on Sonata Breve, by Walter Hartley, and seek your permission to use these pieces in my study. I do not intend to publish any of my music that has been composed for this study. This music will be used in my dissertation only.

Xerox copies of the music are enclosed for your inspection.

I look forward to hearing from you regarding my request.

Sincerely,

William R. Haskett
Chairperson, Fine Arts

Enclosures

PLEASE NOTE:

Copyrighted materials in this document have not been filmed at the request of the author. They are available for consultation, however, in the author's university library.

These consist of pages:

-Appendices F and G, pages 85-178;
Appendices N and O, pages 191-260.

University Microfilms International
300 N. ZEEB RD., ANN ARBOR, MI 48106 (313) 761-4700

APPENDIX H

FOLLOW-UP LETTER TO STUDENT SUBJECTS

TO: STUDENT PARTICIPANTS IN THE PERFORMANCE TEST PROJECT

FROM: BILL HASKETT

DATE:

Enclosed please find the music (with the exception of the sight reading) for you to perform on _____, at _____, in _____. There are two forms of each representative piece. You will be requested to perform all the pieces in their numbered order. They are arranged in their proper performance sequence. A tape recording of the pieces specifying piano accompaniments is enclosed. You may wish to practice with the tape, as you will be requested to perform with the tape during the test. Copies of the piano scores are enclosed, also.

Please practice the music as much as possible. Your performance will not be graded, but will be compared with other students' performances.

Please complete the enclosed Student Information and Consent Form and bring it with you when you perform the test.

Call me collect (817-776-0707) if you have questions or problems regarding the test.

Thank you again for your help by participating in this project.

Bill Haskett

APPENDIX I

STUDENT INFORMATION AND CONSENT FORM

STUDENT INFORMATION AND CONSENT FORM

Name_____ Instrument: Tenor___Bass____

Address_____ Phone number_____

Date of Testing_____ Place of Testing_____

Student Code Number_____ Tape Reel Number_____

Instructor Rating*_____

Readings of tape recorder reference numbers: Start___Stop___

STATEMENT OF CONSENT

I understand and agree to the following:

1) My participation in this project is voluntary.
2) I will be asked to perform pieces I have practiced and to sight read.
3) The results of my performance scores will be kept in total confidence and will be made available to me free of charge at the conclusion of the project.

Signed: Student_____ Date_____

Examiner_____ Date_____

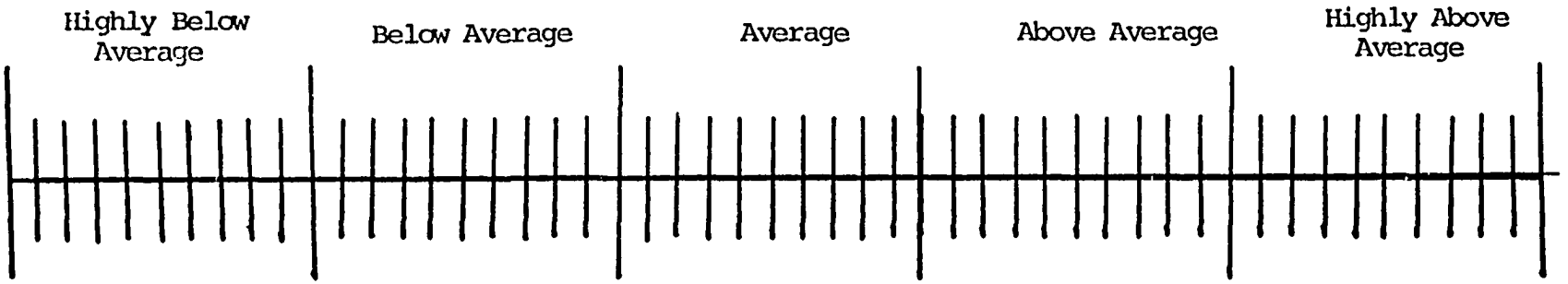
* Your instructor will be requested to rate your overall performance ability compared to his past and present students' overall performance abilities. This information will be kept confidential and will be available to you only through your and your instructor's consent.

APPENDIX J

INSTRUCTOR RATING FORM

Student Number_____College_____Instructor_____

Compared to my immediate past and present music education majors currently enrolled in their final semester of required trombone study, I would rate this student as: (Please place a vertical mark through the horizontal line at the point which best indicates your assessment of this student).



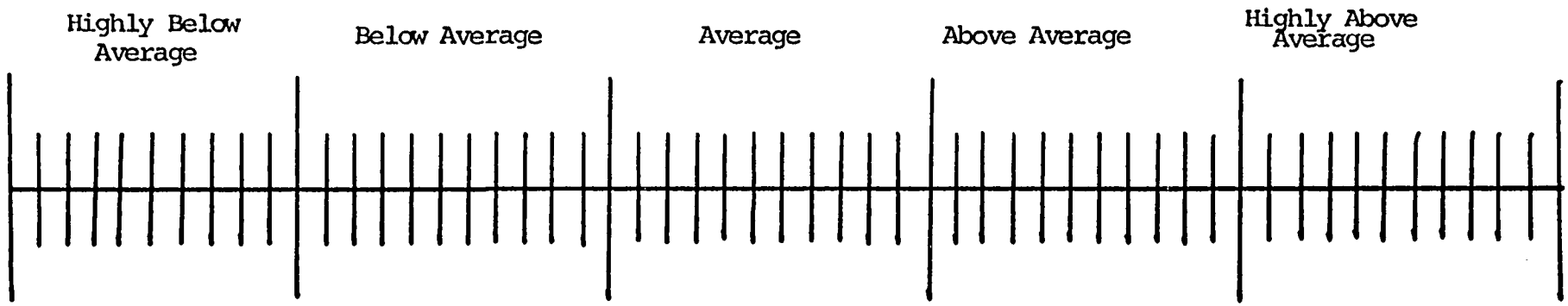
Instructor's Signature_____

APPENDIX K

ITEM ADJUDICATION FORM

Student Number_____ Item_____

Compared to my immediate past and present students at this level, I would rate this performance as: (Please place a vertical mark in the space at the point which best indicates your assessment of this performance).



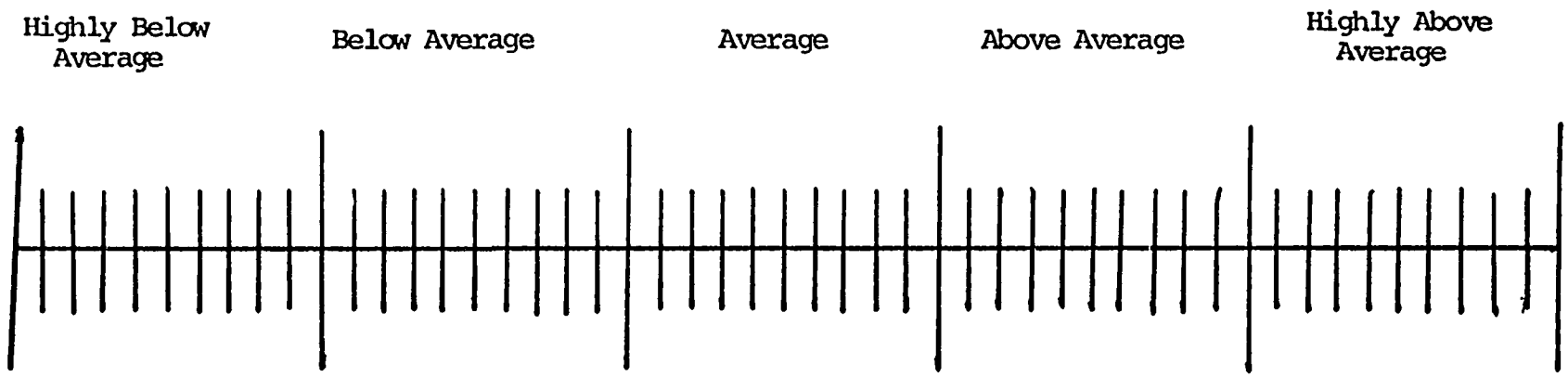
Adjudicator's Signature_____

APPENDIX L

GLOBAL ADJUDICATION FORM

Student Number_____

Compared to my immediate past and present students at this level, I would rate this student as: (Please place a vertical mark in the space at the point which best indicates your assessment of this student's performance ability).



Adjudicator's Signature_____

APPENDIX M

PRELIMINARY FORMS STUDENT PROFILE

PRELIMINARY FORM STUDENT PROFILE

SUBJECT:

IA			IB		
J_1	A-	B-	J_1	A-	B-
J_2	A-	B-	J_2	A-	B-
J_3	A-	B-	J_3	A-	B-

IIA			IIB		
J_1	A-	B-	J_1	A-	B-
J_2	A-	B-	J_2	A-	B-
J_3	A-	B-	J_3	A-	B-

IIIA			IIIB		
J_1	A-	B-	J_1	A-	B-
J_2	A-	B-	J_2	A-	B-
J_3	A-	B-	J_3	A-	B-

VA			VB		
J_1	A-	B-	J_1	A-	B-
J_2	A-	B-	J_2	A-	B-
J_3	A-	B-	J_3	A-	B-

Global Ratings	Global Ratings
J_1	J_1
J_2	J_2
J_3	J_3
Instructor	Instructor

APPENDIX P

FINAL FORM STUDENT PROFILE

JUDGE_____ FORM_____

STUDENT CODE NUMBER_____

ITEM		TOTAL
IA_____	B_____	_____
IIA_____	B_____	_____
IIIA_____	B_____	_____
IV	_____	_____
VA_____	B_____	_____
TOTAL		_____
GLOBAL RATING		_____