To the Graduate Council:

I am submitting herewith a dissertation written by Ivey Chance entitled "The Development of Typewriting Tests for Measuring Student Achievement at Various Performance Levels." I recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Education, with a major in Curriculum and Instruction.

George A. Wagoner

George A. Wagoner, Major Professor

We have read this dissertation
and recommend its acceptance:

Wm H Coffield

E. S. Christenbury

Carl M. Garner

Accepted for the Council:

Hilton A. Smith

Vice Chancellor
Graduate Studies and Research

Thesis
756
.C426
cop. 2

THE DEVELOPMENT OF TYPEWRITING TESTS FOR MEASURING STUDENT ACHIEVEMENT AT VARIOUS PERFORMANCE LEVELS

A Dissertation

Presented for the

Doctor of Education

Degree

The University of Tennessee

Ivey Chance

June 1975

1227248

ABSTRACT

The problem of this study was to develop typewriting tests to be used as pretests and posttests in typewriting and Vocational Office Education programs. The tests included both objective and performance tests and were designed to evaluate students at various performance levels.

The research was conducted during the summer of 1973 and the winter and spring of 1974. Approximately 2,000 students in over 30 secondary schools and colleges in the state of Tennessee participated in the research.

Equivalent forms of the various tests were constructed from an outline, and the outline and test items were evaluated by professional people. Other procedures included trial testing and revision of instruments prior to final testing. In addition, scoring criteria were developed based on the judgment of professional people and obtained through interviews and review of professional literature.

Major findings of the study were:

1. The reliability coefficients of .86 and .89 met the criterion set for the objective tests that the tests should have a coefficient of .85 or greater.

2. The objective tests met the criterion that the two forms were to contain at least 50 percent of the items with a discrimination index of .30 or greater, with less than 5 percent of the items below .10. Neither of the forms had test items with an index below .10;

and, Form A and Form B yielded 51 and 68 percent, respectively, of items with an index of .30 or greater.

3. Form A of the objective tests did not meet the criterion established for the percentage of difficulty indexes (less than 5 percent of the items should have an index of above .90 or below .10). Form A had 7 percent of the items with an index below .10; Form B had a total of 4 percent of the items with an index below .10; therefore, Form B met the criterion.

4. No significant differences were found at the 10 percent level between the two forms of objective tests; therefore, the criterion was met for similarity of equivalent forms.

5. The criterion that significant differences should be found (5 percent level) between performance levels was not met for Timed Writings, Errors, and Timed Writing Score test items of the performance tests. However, significant differences were found for Letters, Tabulation, Manuscripts, and Typewriting Numbers in Context test items; therefore, the criterion was met for these test items.

6. The criterion that no significant difference should be found between mean scores of similar test items on equivalent forms (10 percent level) was met for all test items of the performance tests.

TABLE OF CONTENTS

CHAPTER		PAGE
I.	INTRODUCTION	1
	Statement of Problem	2
	Importance of the Study	2
	Elements of the Problem	3
	Scope and Limitations of the Study	4
	Overview of Procedures	4
	Definition of Terms	6
	Organization of the Study	7
II.	REVIEW OF RELATED RESEARCH	8
	Baldree Study	8
	Batchelor Study	9
	Chen Study	10
	Fulcher Study	12
	Pope Study	13
	Strunk Study	14
	Swayne Study	16
	Thomas Study	17
	Van Schlick Study	19
	Wilson Study	20
	Summary	21
III.	CRITERIA FOR TEST DEVELOPMENT	22
	Test Validity	22

CHAPTER PAGE

Test Reliability 24
Item Analysis 27
Item Construction 29
Statement of Criteria 30
IV. PROCEDURES IN TEST DEVELOPMENT 32
Outlines for Test Item Construction 32
Objective Tests 35
Performance Tests 36
V. TESTS ANALYSES--OBJECTIVE TESTS 44
Pilot Testing 44
Final Testing 47
VI. TESTS ANALYSES--PERFORMANCE TESTS 62
Procedures 62
Pilot Testing 63
Final Testing 66
VII. SUMMARY 75
Summary of Findings 76
Recommendations 78
BIBLIOGRAPHY 80
APPENDICES 85
Appendix A 86
Appendix B 120
Appendix C 156
Appendix D 195
VITA 203

LIST OF TABLES

TABLE		PAGE
I.	Criteria for Scoring Letters, Manuscripts, and Tables . .	41
II.	Comparison of Mean Scores--Pilot Objective Tests	45
III.	Population for Objective Tests	48
IV.	Item Responses on Objective Test Form A	49
V.	Item Responses on Objective Test Form B	52
VI.	Comparison of Mean Scores--Final Objective Tests	57
VII.	Index of Difficulty--Objective Tests	59
VIII.	Index of Discrimination--Objective Tests	61
IX.	Population for Pilot Performance Tests	64
X.	Population of Testing Program--Final Performance Tests .	67
XI.	Means of Similar Test Items by Levels, Final Performance Tests	68
XII.	Comparison of Means--Final Performance Tests	69
XIII.	Means of Similar Test Items on Alternate Forms, Final Performance Tests	73
XIV.	Final Performance Tests	74
XV.	Curriculum Guide--Standards by Level	89
XVI.	Outline for Test Construction and Evaluation	105

CHAPTER I

INTRODUCTION

Curriculum planning in Business Education is often difficult because students who enter these programs have varied educational backgrounds. This problem is acute, particularly in the skill subjects, since the level of achievement of students who enter these courses often varies greatly.

Another important goal is knowing what to do with students who attain the highest level of achievement required in a particular skill course before the course is formally completed.

The time needed to teach a skill course is also an important problem. If a student is permitted to progress at his own pace in a skill course, for instance, teaching time might be reduced. The importance of decreasing the time required for teaching the skill courses has been pointed out by many educators, as indicated in the following statement:

> The third issue is related to the teaching of skills in the present program of business education. The question is raised as to how much the teaching of these skills may be accelerated. The squeeze on business subjects by a broadened general education program and the necessity for meeting automation needs may require special attention to the development of business skills at a much more rapid rate. There is encouraging evidence that the time needed to teach these skills can be reduced and that the kinds of skills needed can be adjusted to provide for more economical use of training.[1]

---

[1] J. Lloyd Trump and Delmas F. Miller, Secondary School Curriculum Improvement: Proposals and Procedures (Boston: Allyn and Bacon, Inc., 1968), p. 74.

The goal, therefore, is three-fold: (1) to provide for students of skill subjects who enter the different educational institutions with varying achievement background, (2) to provide opportunities for students to prove their proficiency before they complete a formal course in the skill subjects, and (3) to accelerate the time for teaching skill subjects.

I. STATEMENT OF PROBLEM

The problem of this study was to develop objective tests and performance tests in a skill course, typewriting, to be used as pretests and posttests in typewriting and in Vocational Office Education programs. These tests may be used in the evaluation of typewriting students at various achievement levels as identified in the Tennessee state curriculum guide.

II. IMPORTANCE OF THE STUDY

The need to provide students with opportunities to prove their proficiency led a committee composed of vocational supervisors, college professors, and secondary school teachers to develop a curriculum guide[2] and course outline[3] for the state of Tennessee

---

[2] Educational Office Careers: An Articulated Curriculum Guide for Junior High Schools, Secondary Schools, Area Vocational-Technical Schools, Community Colleges. Tennessee Department of Education, Division of Vocational-Technical Education, Nashville, Tennessee, 37219. Murfreesboro, Tennessee: Vocational Curriculum Laboratory, 1972.

[3] Education for Office Careers: An Instructional Outline. Tennessee Department of Education, Division of Vocational-Technical

used in junior high schools, secondary schools, area vocational-technical schools, and community colleges.

The committee's efforts resulted, in part, in a plan for the teaching of typewriting in which five minimum levels of performance were identified. A student's competence at each of the performance levels prepares him for specific job opportunities. In order to support these efforts, therefore, materials are needed for measurement at each minimum typewriting performance level. The lack of such measures supports the need for this study. A review of the literature and related research since 1940 revealed no specific typewriting test programs that could be adapted to the Tennessee curriculum guide. No research was found that provided a means of measuring several student achievement levels in typewriting.

III. ELEMENTS OF THE PROBLEM

The test materials developed in this research should provide measures for determining the achievement level of typewriting students at several stages of their training and should meet the following requirements:

1. Minimum typewriting competencies must be identified in accordance with the state curriculum guide.

2. Each minimum performance level must be interpreted in the form of an outline of items to be used in the tests.

Education, Nashville, Tennessee, 37219. Murfreesboro, Tennessee: Vocational Curriculum Laboratory, 1972.

3. Production typewriting problems must measure students' ability to perform typewriting tasks.

4. Objective tests items (multiple-choice) must measure knowledge of facts about the typewriter and about typewriting tasks that are not measured through production typewriting problems.

IV. SCOPE AND LIMITATIONS OF THE STUDY

The performance test materials in this study were limited to the first four levels of the minimum performance standards for typewriting as identified in a state curriculum guide for Tennessee Vocational Office Education programs.[4] The fifth level, which provides for the specialized fields of legal, medical, and technical typewriting, was not considered.

The objective test was limited to the first three levels of the minimum performance standards.

The study was limited to two test revisions, provided that substantially all criteria had been met. Furthermore, norms were not established in this study.

V. OVERVIEW OF PROCEDURES

The major steps followed in carrying out the study were:

1. Minimum performance levels in typewriting, as defined in the section above, were used to determine the knowledges included

---

[4] Educational Office Careers: An Articulated Curriculum Guide.

in the test materials. An outline of the information to be tested was developed and presented to a panel of professional people for their review.

2. An analysis was made of secondary school and college textbooks and manuals in typewriting; secretarial handbooks; curriculum guides; various typewriting tests (including tests published commercially), tests prepared by business education departments of selected colleges and universities, certified professional secretary tests, and tests previously developed in related research. The purpose of this step was to define and intepret correct methods of typing various test items. An outline was developed to be used as a guide in scoring the various tests. This outline was evaluated by professional people.

3. The information in the two outlines was combined into one final outline, which was presented to professional people for evaluation.

4. A review of related research and literature was made to determine what were to be considered errors in performance typewriting tests and to determine the scoring weight to be assigned to the various errors. Secondary school and college teachers of typewriting were asked to evaluate the scoring criteria resulting from this step. An outline was developed to be used as a guide in the identification and weighting of errors.

5. Criteria for the tests were developed from the recommendations of selected references in educational measurement.

6. Objective test and performance test items were developed and reviewed by a group of professional people.

7. A preliminary tryout of objective test materials was made in typewriting classes at The University of Tennessee, Knoxville. Students in secondary schools and other colleges also participated in a preliminary tryout of performance test items. Test revisions were made from recommendations of teachers participating in the testing. After appropriate revision, the final tests were given in 32 secondary schools and colleges.

8. The criteria for test evaluation were applied to the test results.

VI. DEFINITION OF TERMS

The term curriculum guide refers to a Tennessee state publication that provides data on 29 different office occupations. Information in the curriculum guide is based on surveys, research studies, and statements of an advisory committee composed of employers and employees. Minimum standards at various levels are given for skill subjects based on job entry requirements. For example, a student can match his level of achievement in typewriting with the requirements of certain job levels in the state.

The term course outline refers to a Tennessee state publication that supplements the state curriculum guide. This publication provides an outline of activities that should be covered in the classroom teaching situation so that students are qualified to meet

the different minimum standard job entry levels.

The term VOE is the abbreviation for Vocational Office Education. Vocational Office Education in the secondary school is usually identified by blocks of time of two or three hours in which the teaching of office education activities is provided.

VII. ORGANIZATION OF THE STUDY

Chapter II contains a review of typewriting studies relating to construction and scoring criteria, Chapter III contains the development of test criteria, and Chapter IV the procedures followed. Chapters V and VI present the development and analysis of the tests. Chapter VII summarizes the study and presents recommendations.

The bibliography contains only those sources identified in the footnotes. Appendix A contains the outlines for test development; Appendix B contains the instructions to teachers, the objective tests developed in the study, the coding sheet for computer analyses, and examples of changes in test items; Appendix C contains instructions to teachers, instructions to students, the performance tests, teacher comments about the tests, the coding sheet for computer analyses, and supporting information on the performance tests; and Appendix C contains several stages in the development of criteria for scoring of performance tests and a listing of the professional groups used in evaluation at various stages of the study.

CHAPTER II

REVIEW OF RELATED RESEARCH

This chapter reviews research related to the construction and scoring criteria for the test materials. The studies are presented in alphabetical order.

Baldree Study[1]

The purpose of the Baldree study was to develop multiple-choice test questions to measure the achievement of typewriting students at Bradley High School in 1972. The problem was limited to the first 60 lessons of a high school textbook and represented one semester of typewriting instruction. A 50-item test, covering the first 30 lessons, was administered to 412 typewriting students in October, 1972. A 77-item test covering 60 lessons was administered to 353 typewriting students in December, 1972. Twelve typewriting classes were used in the first testing program, and ten classes were used in the second testing program.

Some of the conclusions drawn from this study were: (1) the first test had good discriminating power, but two-thirds of the items on the first test were too easy according to the difficulty indexes, (2) the second test had poor discriminating power--only

---

[1]Edith Baldree, "An Analysis of Multiple-Choice Test Questions Prepared to Measure the Achievement of 1972 Bradley High School Typewriting Students" (unpublished Master's problem, The University of Tennessee, Knoxville, 1973).

13 percent had adequate discrimination indexes; however, the difficulty standard was met, with 86 percent of the items having indexes of 170 or below.

The Baldree study is similar to the present study in that a multiple-choice test was developed for typewriting classes. Similar procedures were followed in test construction and analysis. However, alternate forms were developed in the present study. In addition, high school and college testbooks were used as references in constructing the tests; and the content of the tests covered material beyond the first semester of typewriting.

Batchelor Study[2]

The purpose of the Batchelor study was to provide alternate standardized achievement and production tests in typewriting for use at the close of the second year of typewriting instruction in the Department of Secretarial studies, New York University. The content of the tests was based on the following procedures: (1) two studies were reviewed for the purpose of classifying various type writing duties, (2) two textbooks were reviewed for the purpose of classifying duties in the same manner as in the first analysis, (3) typewriting and secretarial courses were analyzed to determine the scope of subject matter in typewriting, and (4) test items were sent to typists in the form of a questionnaire. The alternate test

---

[2]Ruth Gordon Batchelor, "The Construction of a Standardized Test in Typewriting for Use on the Collegiate Level" (unpublished Doctoral dissertation, New York University, New York, 1950).

forms consisted of related knowledges and performance tests.

The reliability coefficients for the alternate forms of the related knowledge and performance tests were .852 and .939, respectively. When the related knowledge and performance scores were combined, the reliability coefficient for the alternate forms was .908. The implications from this study were: (1) the tests were valid and reliable measures of achievement in the skills and knowledges necessary for success in typewriting positions, and (2) the tests may be used not only for measurement of achievement but also for placement, exploratory, diagnostic, guidance, or employment tests.

The Batchelor study is similar to the present study in that both information and performance tests were constructed for measuring typewriting achievement. The present study involved both high school and colleges at more than one level of achievement. Some of the criterion measures used for scoring (identification of specific errors) in the Batchelor study were incorporated in the present study.

Chen Study[3]

The purpose of the Chen study was to determine if any significant differences existed in the terminal achievement of intermediate collegiate typewriting students taught by two different teaching

---

[3]Majorie Y. Chen, "A Comparison of Terminal Achievement Between Structured-Reinforced Production Assignments and Non-Structured Assignments in Programmed Intermediate Collegiate Typewriting" (unpublished Master's thesis, Brigham Young University, Provo, Utah, 1972).

approaches. The two approaches were: (1) the non-structured programmed production problem assignments; and (2) the structured-reinforced programmed production problem assignments.

The study was conducted at Brigham Young University in the spring semester and included all the students enrolled in six sections of intermediate collegiate typewriting. Six instructors were involved in teaching the classes, and the three major units of instruction were tabulation, correspondence, and manuscripts. Test scores from two small groups of 96 students each were selected for analyses.

Some pertinent findings of the Chen study were: (1) no significant difference was found between the two teaching approaches at the .01 level, and (2) students with high initial ability did better than the medium and low initial ability groups (not true between the two low groups). The implications of the study were that either the approach of structured-reinforced programmed production problem assignments or non-structured programmed production problem assignments can be used effectively in the teaching of intermediate typewriting.

The present study is similar to the Chen study in that alternate forms of performance tests were constructed, and both tests consisted of tabulation, correspondence, and manuscript test items. Straight-copy test items for determining typewriting speed and error scores were also developed for the present study. Alternate forms of objective tests were also constructed. Some of the criterion measures established for scoring the performance tests (identification

of specific errors) in the Chen study were adopted in this study.

Fulcher Study[4]

The purpose of the Fulcher study was to evaluate the achievement of first-year typewriting students in Tennessee high schools. The participants consisted of 820 students randomly selected from approximately 40,000 first-year typewriting students in 1,402 public high schools in Tennessee. One-hundred four teachers were contacted, 74 agreed to participate, and 58 were included in the final analysis.

Objectives of course content and achievement standards were established through the review of related literature and research. Achievement of students in Tennessee was compared to the achievement of students in other parts of the country and to the achievement standards recommended from research.

A preliminary tryout of the test was made in two classes of first-quarter typewriting at The University of Tennessee, Knoxville. Equivalent items were included on the performance test sections. A 5-minute straight-copy timed writing, a 30-minute business letter production test, and a 30-minute tabulation production test were included in the achievement test. Gross speed, total errors, and errors a minute on the timed writing were determined.

Some major findings of the Fulcher study were: (1) the average timed writing speed was 42.01, (2) the letter production test speed

---

[4]Carolyn Fulcher, "Evaluation of First-Year Typewriting Students in Public High Schools in the State of Tennessee" (unpublished Master's thesis, The University of Tennessee, Knoxville, 1966).

was 21.9, (3) the average gross speed on tabulation production was 14.84, (4) the error of highest frequency on the letter-production test was the use of an improper salutation, and (5) the error of highest frequency on the tabulation production test was inaccurate horizontal centering.

The Fulcher study is similar to the present study in the development of performance and objective tests for typewriting achievement. The procedures for test development and analysis of the performance tests were similar in these ways: (1) alternate forms were constructed, (2) scoring criteria were similar, (3) reliability coefficients were determined, (4) the testing program involved preliminary and final testing.

Pope Study[5]

The purposes of the Pope study were to (1) compare the production work given in four second-year typewriting textbooks published between 1952 and 1956, and (2) compare the content of these textbooks with the suggestions about production work reported in the professional literature for business education. The comparisons were based on (1) types of production practice materials, (2) frequency and types of materials used for measurement, and (3) standards used for grading.

The materials in the textbooks were classified according to production practice, production measurement, and nonproduction. The

---

[5]Lois Pope, "Production Work in Second-Year Typewriting in Four Textbooks" (unpublished Master's thesis, The University of Tennessee, Knoxville, 1956).

production practice and measurement materials were divided into six types of materials including correspondence, tables, business forms, manuscripts, legal papers, and "others." In addition to the texts, the manual for each text was read to determine the standards used for grading. A brief description of the grading plan was recorded on the work sheets by the lesson in which the measurement occurred.

Six business education journals including back issues for four years were read for information regarding the teaching of typewriting or the materials used in second-year typewriting.

The major findings were: (1) correspondence was given in more lessons than any other type of material, (2) approximately one-fourth (or fewer) of the production practice lessons contained tables, business forms, manuscripts, legal papers, and "others," (3) the major type of measurement material used was correspondence, and (4) for the most part the types of materials that were recommended in the magazines for production work in second-year typing were used for production practice and measurement in the textbooks.

The procedures for analyzing textbooks in Pope's study were useful in the present study. The present study involved the analysis of six high school and college textbooks currently adopted in Tennessee secondary schools and colleges.

Strunk Study[6]

The purpose of the study by Strunk was to construct and validate

---

[6]Flonnie Strunk, "The Development of Valid and Reliable Insurance

two insurance tests which could be used as pretests or posttests by general business teachers in secondary schools. The study was conducted during the second semester of the academic school years 1965-66 and 1966-67, with the population consisting of 12 schools and 277 students.

Validity for the tests was established by presenting 226 test items to a jury of two general business textbooks authors, two educators, and two insurance agents. The panel was requested to evaluate each item and to indicate if the item was "of much importance," "of little importance," or "of no importance." The difficulty was indicated by checking "too difficult" or "too easy." Comments on individual items were encouraged.

Some findings of the Strunk study were:

1. The two forms were similar in content.

2. The items in the two forms were to be similar in indexes of discrimination; however, the tests did not meet fully the criteria.

3. The items in the two forms were to have similar indexes of difficulty; this similarity of the items in the two forms was unsatisfactory.

4. The difference in the means of the two forms was not found to be significant at the 10 percent level.

5. The posttest did meet the criteria set for indexes of

Tests for Secondary School General Business Classes" (unpublished Doctoral dissertation, The University of Tennessee, Knoxville, 1967).

discrimination of items, but the pretest did not fully meet the criteria.

6. The indexes of difficulty of items in both forms met the criteria that 50 percent were within the range of .40-.70.

7. The reliability of the tests was to be at least .87, and the criteria were met for both tests. The reliability for Form X was .92 and for Form Y was .93.

The present study is similar to the Strunk study in procedures for test development, in test validation, and the criteria under which the tests were to be accepted. The use of the 10 percent level of significance in determining the differences in the means of two forms of a test was adopted specifically from the Strunk study. The present study involved both objective tests and performance tests in typewriting at both the secondary and collegiate school levels. The purpose of the Strunk study was to develop objective tests for the secondary school level.

Swayne Study[7]

The purpose of the Swayne study was to construct a filing test for Vocational Office Education (VOE) for the purpose of evaluating student achievement and the effectiveness of instructional procedures.

Validity of the test developed by Swayne was obtained by

---

[7]Ruth Swayne, "A Construction of a Filing Test for High School Vocational Office Education" (unpublished Master's thesis, The University of Tennessee, Knoxville, 1970).

developing an outline of rules and procedures for filing that were contained in two office practice textbooks. The outline was approved by a panel of experts consisting of business teachers, and test items were also reviewed by the teachers.

The test was administered for analysis and improvement before final testing. The final test was composed of two parts: (1) 40 items constructed on general practices of filing, and (2) 70 items constructed on alphabetic indexing. Item analysis was made to determine discrimination, difficulty, and reliability of the tests. Part A and Part B of the test met the criterion for discrimination, but only Part A met the criterion for test difficulty. Neither Part A or Part B met the criterion for reliability.

The present study is similar to the Swayne study in that a similar procedure was followed in test construction and analysis. Indexes of difficulty and discrimination and the reliability of the two forms were determined. The present study was also a project intended for use by VOE teachers--although in typewriting rather than in filing.

Thomas Study[8]

The purpose of the Thomas study was to develop a criterion for the measurement of shorthand transcription production to be used in (1) determining the physical characteristics of the materials to

---

[8]Archie C. Thomas, "The Development of a Criterion for the Measurement of Shorthand Transcription Production," Monograph 77 (Cincinnati: South-Western Publishing Company, May, 1952).

be transcribed, (2) determining the procedures to be followed in conducting transcription tests, and (3) arriving at a set of rules for the grading and scoring of the completed transcripts.

A group of 23 authorities in the field of shorthand transcription was invited to participate in the study, and a questionnaire containing criteria for the scoring of shorthand transcription was submitted to them. From their responses, a criterion for the measurement of shorthand transcription was constructed; and a group of 178 selected teachers of shorthand in high schools and colleges were invited to try out the criterion. The evaluations of the criterion by these cooperating teachers were tabulated and analyzed. Three groups of letters were constructed for dictation at the rate of 60, 80, and 100 words a minute. These tests were administered by the selected teachers and the results obtained by the students who were tested by the criterion were tabulated and analyzed according to the speeds of dictation and according to the levels of instruction of the students.

The Thomas study is similar to the present study in that a thorough review of the literature was used for the establishment of the criteria for scoring. The scoring criteria in the Thomas study applied more specifically to shorthand transcription although several criteria established in his study were incorporated into the present study.

Van Schlick Study[9]

The purpose of the Van Schlick study was to determine the relationship between test scores on straight-copy typewriting and simulated office production problems as measured on the electric typewriter. Validity of the tests was established by having a panel of experts review materials to be used in the testing program, and the reliability of the test was established by the test-retest method.

Implications of the study were: (1) a significant relationship was found between test scores on straight-copy typewriting and test scores on office-production problem typing, (2) a negative correlation was found between net stroking skill and automatic transfer to office production problem typewriting, (3) coefficients were high enough to indicate that success can be predicted in expectancy tables, and (4) transfer skills were different for typist at different levels.

Both the Van Schlick study and the present study developed production test problems for typewriting but with different purposes and for different levels. Scoring criteria were established in both studies. The present study incorporated some of the scoring criteria (identification of specific errors) of the Van Schlick study.

---

[9]Ruth Josephine Van Schlick, "The Relationship Between Test Scores on Straight-Copy Typewriting and Simulated Office Production Problems as Measured on Electric Typewriters" (unpublished Doctoral dissertation, University of Pittsburgh, 1968).

Wilson Study[10]

The purpose of the Wilson study was to analyze the instructional material in typewriting with special emphasis on production typewriting through an examination of textbooks in business education from 1905 through the writing of the most recent published textbook (1965). The steps in the study were to: (1) analyze the production material in typewriting textbooks, (2) utilize the Business Education index to find related literature, (3) review studies related to production typewriting, (4) study related textbooks on methodology in Business Education, and (5) organize the above data into file boxes.

The most common kinds of production materials were found to be business letters and envelopes, telegraphic service forms, legal forms, business forms, cards, displays, straight copy, and manuscripts. Business letters had steadily increased in length and in variety. The most-used method of presenting production material was that of having the student assume the status of working in an office, department, or company.

The Wilson study was reviewed to compare procedures followed in analyzing textbooks and to compare information obtained through the analyses. The Wilson study sought to determine the types of

---

[10]Patricia A. Wilson, "A Review of the Format and Trends of Production Typewriting Materials as Revealed in Typewriting Textbooks Dating from 1905 to the Present" (Seminar Report for Master's degree in Business Education, University of Wisconsin, 1966).

problems presented in textbooks; the present study added the comparison of the correct methods of typewriting test items.

Summary

The purpose of the review of related research was to (1) determine the scoring criteria needed for the tests developed in the present research, (2) compare procedures followed in the carrying out of similar research, and (3) compare the steps followed in the development and analysis of tests. Each of the research studies provided help for at least two of these purposes. Six studies provided scoring criteria data, six studies provided help on procedures, and seven studies provided information for test development and analysis.

CHAPTER III

CRITERIA FOR TEST DEVELOPMENT

In this chapter, a review is made of literature relating to test development. The purpose of the review was to validate the criteria established for test development in the present study. The criteria are presented at the close of this chapter.

According to Hardaway, the three essential characteristics of a good test are validity, reliability, and objectivity. The third characteristic, objectivity, increases both validity and reliability and refers to the accuracy of a test in administration and scoring.[1] Discrimination and difficulty are factors that contribute to these essential characteristics and are given attention in this chapter.

I. TEST VALIDITY

Test validity is the extent to which a test serves its purpose.[2] Many terms are used to distinguish various classifications of validity--content validity, criterion-related validity, construct validity, empirical validity, statistical validity, logical validity, curricular

---

[1]Mathilde Hardaway, Test and Measurements in Business Education (3rd ed.: Cincinnati: South-Western Publishing Company, 1966), pp. 22-23.

[2]Dorothy Adkins Woods, Test Construction: Development and Interpretation of Achievement Tests (Columbus, Ohio: Charles E. Merrill Books, Inc., 1969), p. 17.

validity, concurrent validity, predictive validity, and face validity. Some of these terms are similar in meaning.

Content validity is the most popular type mentioned in the literature, and different procedures are given for obtaining it. Content validity may be built into a test by preparing a table of specifications.[3] Another approach is the outlining of the materials to be included in the tests and then presenting that outline to experts in the field for evaluation. Content validity requires care in the selection of the materials to be used in the testing program. This care includes some method of weighting of the test items as well as evaluation of the material by experts. According to Green, "content validity is a primary consideration in the achievement testing field, regardless of whether the instrument under consideration is standardized or teacher made."[4]

Ebel made the following statement about validity:

> The validity of a test is clearly a matter of degree, not an all or none quality. Tests are not valid or invalid. They are more or less valid. Further, the validity of a test is not completely determined by the test itself. It depends on the purpose for which the test is used, the group with which it is used, and the way it is administered and scored. Instead of asking, "How valid is this test?" it would be more precise to

---

[3]G. A. Adams, Measurement and Evaluation in Education, Psychology, and Guidance (New York: Holt, Rinehart, and Winston, 1964), p. 146; Norman E. Gronlund, Constructing Achievement Tests (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1968, pp. 106-107; J. Stanley Ahman, Testing Student Achievement and Aptitude (Washington: Washington Center for Applied Research in Education, 1962), p. 13.

[4]John A. Green, Teacher-Made Tests (New York: Harper and Row, Publishers, 1968), p. 86.

ask, "How valid are the scores from this test when it is used in a specified way for a specified purpose with a specified group?"[5]

The procedures followed in the development of the tests in the present research were based on the recommendations of experts as reviewed in the literature and related research. The procedures of detailed outlining of materials to be tested and the evaluation at various stages by experts were taken from the procedures recommended by test and measurements experts.

II. TEST RELIABILITY

Test reliability is the ability of the test to be consistent in what it purports to measure. The word accuracy also describes the reliability of a test--does the test accurately measure what it intends to measure? Experts will not fail to mention, however, that tests can consistently measure the wrong information, thus making the tests reliable, yet invalid. Reliability, therefore, is independent of validity.

Three procedures are usually presented for determining statistically the reliability of a test. The first method is called the test-retest method. In this method, a test is given at least twice to the same group, and the scores are checked by one of several available formulas for determining test reliability. The administrator

---

[5]Robert L. Ebel, Measuring Educational Achievement (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1965), p. 392.

can then determine whether the test has the ability to reproduce itself in the scores obtained by the same group of subjects at both testings. According to Hardaway; "It is not necessary that identical scores be earned by each individual on the test and the retest, only that a known uniform relationship exist between the two scores."[6] Time can be a factor, and the amount of time is controlled so that memory and intervening learning are not an issue.[7]

A second procedure, called the alternate forms method (equivalent or parallel forms), is a procedure in which two very similar tests must be developed. According to Downie, "Two tests are said to be equivalent when they have equal means and standard deviations. They should be made up of the same number of similar items, measure similar things."[8] Ebel offers the following definition of this method of determining reliability:

> The items in equivalent forms of a test are the same in type, cover the same content, have the same distribution of difficulty values, and yield scores having the same mean, variability, and reliability. The existence of equivalent forms is particularly useful when the same characteristic of a student must be measured more than once.[9]

A third method of determining test reliability is called

---

[6]Hardaway, p. 25.

[7]George Satter, "Principles of Test Selection, Construction, and Use," Evaluation of Pupil Progress in Business Education, XVII (The American Business Education Yearbook, 1960), p. 67.

[8]N. M. Downie, Fundamentals of Measurement (2nd ed.; New York: Oxford University Press, 1967), p. 92.

[9]Ebel, Measuring Educational Achievement, p. 450.

the split-halves method. The popularity of this method lies in the fact that one sitting for the test is all that is required:

> . . . one administers the test, splits the items into two random halves, scores the items from the two halves, and separately correlates the resulting pairs of two scores. This correlation tells one the extent to which the items in the two halves are equivalent, or measure the same thing, and gives a notion of how much a score would change if a different selection of items from the same ability area were used. With this procedure, since the correlation is between scores on two half tests, we have the reliability of a half-test; applying the Spearman-Brown Prophecy formula enables us to estimate the reliability of the whole test.[10]

The Kuder-Richardson formulas provide essentially the same type of reliability coefficients.[11] Authorities agree that these formulas are inapplicable to speeded tests; instead, the equivalent forms method must be adopted with speeded tests.[12]

Two of these three methods of determining reliability were used in this study. The alternate forms method was used on both the objective and performance tests to make sure that the two forms of the test were equivalent in their difficulty level and could be used as pre- and posttests. The split-halves method was used to determine the reliability of the separate forms of the objective test. Formulas and tables of significant values were used from the statistics books of Ferguson, Guillford, and Bennett.[13] The

---

[10]Satter, p. 68.

[11]Satter, p. 68; Gronlund, p. 113.

[12]Ebel, Measuring Educational Achievement, p. 344; Downie, p. 84; Satter, p. 69; Gronlund, p. 113.

[13]George A. Ferguson, Statistical Analysis in Psychology and Education (New York: McGraw-Hill Book Company, 1959), pp. 151-153;

book by Ebel[14] provided the specific formula used for determining the reliability by the split-halves method.

III. ITEM ANALYSIS

Essential to the validity of test development is the trial use of test items and the analysis of student responses. A test should discriminate between the good and poor student, therefore containing items of sufficient difficulty and discriminating power. Ebel explains the value of item analysis in the following statement:

> The analysis of student response to objective test items is a powerful tool for test improvement. Item analysis indicates which items may be too easy or too difficult and which may fail for other reasons to discriminate clearly between the better and the poorer examinees. Item analysis sometimes suggests why an item has not functioned effectively and how it might be changed to improve it. A test composed of items revised and selected on the basis of item analysis data is almost certain to be a much more reliable test than one composed of an equal number of untested items.[15]

Experts differ on the percentage of the upper and lower groups of papers to be used for analyses. Ebel recommends the use of the upper and lower 27 percent (the most common choice) because this

---

George A. Ferguson, Statistical Analysis in Psychology and Education (3rd ed.; New York: McGraw-Hill Book Co., 1971), p. 410; J. P. Guillford and Benjamin Fruchter, Fundamental Statistics in Psychology and Education (New York: McGraw-Hill Book Co., 1973), p. 160; Carl A. Bennett and Normal L. Franklin, Statistical Analysis in Chemistry and the Chemical Industry (New York: John Wiley and Sons, Inc., 1954), p. 1016.

[14]Robert L. Ebel, Essentials of Educational Measurement (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1972), p. 418.

[15]Ebel, Essentials of Educational Measurement, p. 383.

procedure allows the groups to be as large as possible as well as different as possible.[16]

An index of discrimination is calculated by subtracting the correct responses of the lower group from the correct responses of the upper group and dividing this difference by the number of papers in the upper or lower group. According to DeBrum and Mason, an item with an index of .40 or higher is considered to possess high discriminating power, the range of .20 to .39 is considered moderate, and the range of .01 to .19 is considered low discriminating power.[17] Ebel suggests that the goal should be to have test items with an index of .30 and higher.[18]

An index of difficulty is determined by dividing the total correct responses in the upper and lower group by the total number of responses. Ebel and Hardaway state that the index of item difficulty should be about average or middle difficulty.[19] DeBrum and Mason are more specific by recommending the range of .40 to .70.[20]

---

[16]Ebel, Essentials of Educational Measurement, p. 385.

[17]S. Joseph DeBrum and William John Mason, "Evaluation in General Business," Evaluation of Pupil Progress in Business Education, XXVII (The American Business Education Yearbook, 1960), pp. 292-293.

[18]Ebel, Essentials of Educational Measurement, p. 406.

[19]Ebel, Essentials of Educational Measurement, p. 406; Hardaway, pp. 27-28.

[20]DeBrum and Mason, p. 293.

Remmers and Gage suggest care in dealing with difficulty indexes because forcing item difficulty may be possible but might result in less valid items.[21]

The objective tests developed in the present research were analyzed for indexes of discrimination and difficulty, and the data obtained were used for one revision of the tests. The index of discrimination was given priority in revision of each test item, but the index of difficulty was considered only when it was extremely high or low.

IV. ITEM CONSTRUCTION

Two 100-item multiple-choice tests were developed in the present research as a part of the total test development program. According to Ebel, the multiple-choice test item is a "highly regarded and widely used form of objective test item."[22] Satter states that the multiple-choice type item is highly adaptable and "can be used to measure both the simplest processes, such as memory of facts, and the more complex processes, such as those involved in reasoning and problem solving."[23] To these merits, Hardaway adds that multiple-choice items can be used effectively to measure "application of

---

[21] H. H. Remmers and N. L. Gage, Educational Measurement and Evaluation (New York: Harper and Brothers, 1955), p. 131.

[22] Ebel, Essentials of Educational Measurement, p. 224.

[23] Satter, p. 76.

principles, insights, and appreciations."[24]

Suggestions by Ebel[25] were followed in the construction of multiple-choice test items for this research.

V. STATEMENT OF CRITERIA

The following criteria were established for the objective and performance tests developed in this research:

1. A detailed outline of materials should be developed for the testing program and submitted to a professional group for evaluation.

2. Test items should be constructed on the basis of recommendations of test experts and submitted to a professional group for evaluation.

3. Consistency in scoring of tests should be accomplished by establishing the criteria for scoring from evaluations by a professional group and a review of related studies and literature.

4. The reliability coefficient of the two forms of the objective tests should be greater than .85. The computations are to be based on the Pearson Product moment correlation between odd and even scores and adjusted by the Spearman-Brown Prophecy formula.

5. The two forms of the objective tests should be similar in percentages of discrimination indexes, with 50 percent of the items having an index of .30 or greater and with less than 5 percent of the items having an index of below .10.

---

[24]Hardaway, p. 41.

[25]Ebel, Essentials of Educational Measurement, pp. 187-225.

6. The two forms of the objective tests should be similar in difficulty indexes, with less than 5 percent of the items above .90 or below .10, at least 30 percent in the .40-.60 range, and at least 50 percent in the .30-.70 range.

7. The two forms of the objective tests should not be significantly different in mean scores at the .10 level.

8. The similarity of the performance tests should be determined by comparing the mean scores of similar test items at each of the four performance levels. No significant difference should occur between similar test items at the .10 level.

9. A significant difference at the .05 level should be obtained between mean scores of similar test items on the performance tests, when test items are compared between performance levels.

CHAPTER IV

PROCEDURES IN TEST DEVELOPMENT

The purpose of this study was to develop objective tests and performance tests in typewriting to be used as pretests and posttests in typewriting and Vocational Office Education programs. This chapter presents the procedures followed in the (1) development of an outline of materials to be used in test item development, (2) construction and administration of objective tests, and (3) construction and administration of performance tests.

I. OUTLINES FOR TEST ITEM CONSTRUCTION

A curriculum guide[1] for Vocational Office Education programs in the state of Tennessee provides the standards for the testing of typewriting students at five minimum performance levels (see Appendix A). These levels of performance represent minimum job entry requirements in the state of Tennessee. The fifth level presents standards for specific areas of educational preparation (such as legal and medical). The construction of tests for these specific areas was deemed too broad in scope for one research study; therefore, the tests developed

---

[1] Educational Office Careers: An Articulated Curriculum Guide for Junior High Schools, Secondary Schools, Area Vocational-Technical Schools, Community Colleges, Tennessee Department of Education, Division of Vocational-Technical Education, Nashville, Tennessee, 37919 (Murfreesboro, Tennessee: Vocational Curriculum Laboratory, 1972).

in this study were limited to evaluation at the first four minimum performance levels.

Two outlines were developed and combined into a final outline to be used in test item construction. The purpose of the first outline was to establish the types of items to be included on the objective and performance tests. The procedure involved the interpretation of the state curriculum guide[2] and its accompanying course outline.[3] The outline was presented for review to two regional supervisors who had been involved in the development of the curriculum guide and course outline. They evaluated the types of test items the researcher had included in the testing program. Two college professors also reviewed the outline for comments on the researcher's interpretation of the curriculum guide and course outline (see Appendix D for names of professional people in Group A).

The purpose of the second outline was to establish the various correct methods of typing individual test items to be included in both objective and performance tests. These data also provided the necessary information for establishing the difficulty of the material at the various test levels and in establishing the criteria for scoring. The second outline was based on the analysis of secondary school

---

[2]Educational Office Careers: An Articulated Curriculum Guide for Junior High Schools, Secondary Schools, Area Vocational-Technical Schools, Community Colleges.

[3]Educational Office Careers: An Instructional Outline, Tennessee Department of Education, Division of Vocational-Technical Education, Nashville, Tennessee, 37219 (Murfreesboro, Tennessee: Vocational Curriculum Laboratory, 1972).

typewriting textbooks by Gregg[4] and South-Western[5] publishing companies, college textbooks by Gregg[6] and South-Western[7] publishing companies, and on secretarial handbooks.[8]

The second outline was presented to four college professors (see Appendix D, Group B), who reviewed the accuracy of the methods described in the outline (and who evaluated the thoroughness of coverage of the outline material). Several steps of rewriting and rechecking were necessary before the outline was completed.

The information contained in the two outlines was combined into a final outline and presented to professional Group B (see Appendix D)

---

[4]John L. Rowe, Alan C. Lloyd, and Fred E. Winger, Typing 300, Volume 1: General Course (New York: Gregg Division of McGraw-Hill Book Company, 1972); John L. Rowe, Alan C. Lloyd, and Fred E. Winger, Typing 300, Volume Two: Vocational Course (New York: Gregg Division of McGraw-Hill Book Company, 1972).

[5]D. D. Lessenberry, T. James Crawford, Lawrence W. Erickson, Lee Beaumont, and Jerry W. Robinson, Century 21 Typewriting: A Complete Course (Cincinnati: South-Western Publishing Company, 1972).

[6]Alan C. Lloyd, John L. Rowe, and Fred Winger, Typing 75: Advanced (New York: Gregg Division of McGraw-Hill Book Company, 1970); Alan C. Lloyd, John L. Rowe, and Fred Winger, Typing 75: Basic (New York: Gregg Division of McGraw-Hill Book Company, 1970); Alan C. Lloyd, John L. Rowe, and Fred E. Winger, Typing 75: Expert (New York: Gregg Division of McGraw-Hill Book Company, 1970).

[7]D. D. Lessenberry, S. J. Wanous, and C. H. Duncan, College Typewriting: Complete Course (8th edition; Cincinnati: South-Western Publishing Company, 1969).

[8]Doris H. Whalen, The Secretary's Handbook (rev. ed.; New York: Harcourt Brace Jovanovich, Inc., 1973); J. Marshall Hanna, Estelle L. Popham, and Esther Kihn Beamer, Secretarial Procedures and Administration (5th ed.; Cincinnati: South-Western Publishing Company, 1968).

for final evaluation. The outline was followed in the development of the test items that are included in the testing program.

II. OBJECTIVE TESTS

The objective tests were administered in the summer of 1973 at The University of Tennessee, Knoxville, and revised and administered in a final testing program in the winter of 1974. Two 85-item multiple-choice tests were constructed from the final outline (discussed in the previous section of this chapter) and used in the pilot testing program. Each test item was evaluated by two experts (see Appendix D, Group C) in test development for the correct construction and for the accuracy of answers. The items on the two tests were similar so that they could be used as pretests or posttests. Items were assigned alternately to Form A and B.

Analysis of test items in the pilot testing program revealed responses that needed to be revised or omitted. In addition, the *t* test for the significance of the difference between mean scores was applied to the various test levels for the different groups taking the tests. This procedure provided additional data on the similarity of the two forms of objective tests.

The revised objective tests contained 100 items (15 new items were added to provide two 100-item tests) on each test form. The final testing program was administered in the winter of 1974, and the number of usable test scores was 249 for Form A and 220 for Form B.

Item analysis provided the researcher with discrimination and difficulty indexes for the two test forms. The split-halves method for determining test reliability indicated whether the tests met the reliability criterion. The reliability coefficients were transformed into Z coefficients to further test the significance of difference between the two coefficients. In addition, the comparing of means of parallel forms also provided evidence of test similarity. Detailed discussion of the statistical treatment of test data is presented in Chapter V.

As a student advances in the typewriting program, his performance at the typewriter provides a more relistic measure of typing ability than do objective tests. For this reason, multiple-choice tests were constructed to evaluate the typewriting student only at the first three minimum performance levels.

III. PERFORMANCE TESTS

The data obtained for the scoring criteria for the performance tests are a significant part of this research. Furthermore, the extensive research into the identification of typing errors has resulted in a standard scoring system that can be used by all teachers of typewriting. This section is therefore divided into two sections: (1) the procedure followed in the construction and administration of the performance tests, and (2) the procedure followed in the establishment of the scoring criteria for the performance tests.

Construction and Administration

Alternate forms of performance tests were constructed for the first four minimum performance levels. The types of items to be used in the tests of typewriting performance were submitted to professional Group C (see Appendix D) for their comments and recommendations before the pilot testing program, which was conducted in six secondary schools and colleges during the winter of 1974. Teachers' comments on the tests and recommendations for change (see Appendix C) were considered in the revisions made before the final testing in the spring of 1974.

Level 1 tests consisted of (1) a straight-copy timed test for determining speed and errors, (2) a personal letter, and (3) a one-column tabulation problem. Tests at Level 2 and Level 3 were comprised of (1) a straight-copy timed test for determining speed and errors, (2) a business letter with a carbon copy and an envelope, (3) a multi-column tabulation problem, and (4) a manuscript report. The tests at Level 4 were similar in content to the tests at Level 2 and Level 3 but also included a test of the student's ability to type numbers in context.

The purpose of the testing programs was to determine whether the various tests measured student achievement at each of the four performance levels and to determine if parallel test items were similar. In order to accomplish these objectives, a particular level of the tests was administered to typewriting students who represented that level. The test at the next highest level was also administered to the same students. The same process was followed throughout the

testing programs for the various levels, and the t test for determining the significance of difference between means was applied to scores of parallel test items and to similar test items between levels. Scores on individual test items (as opposed to total scores) provided the researcher with specific data on the similarity of the parallel tests.

Regional supervisors for vocational office education, college professors, and a city supervisor of business education were solicited for assistance in contacting teachers throughout the state who would participate in the final testing program. The researcher then delivered the tests to the teachers and discussed instructions for administering the tests. Seventeen high schools throughout the state of Tennessee participated in the final testing of the performance tests, resulting in 611 usable tests, with the number at each level somewhat evenly distributed in the three sections of the state.

Criteria for Scoring

The researcher reviewed related literature and research in order to establish criteria for scoring the performance tests. Six research studies (reviewed in Chapter II) and a book by West[9] were used in the establishment of the scoring criteria. Furthermore, analyses were made of secondary school and college textbooks and manuals in typewriting; secretarial handbooks; curriculum guides;

---

[9]Leonard West, Acquisition of Typewriting Skills (New York: Pittman Publishing Corporation, 1969), pp. 562-602.

various typewriting tests (including commercially published tests), tests prepared by business education departments of selected colleges and universities, and certified professional tests. This review aided the researcher in identifying and classifying errors.

Errors were classified as (1) major errors, (2) intermediate errors, and (3) minor errors. Major errors were defined as errors that would require the complete retyping of the test item; intermediate errors were defined as errors that could be corrected without retyping the item; and minor errors were defined as errors in which the typist would not be required to correct or retype the item. Ten secondary school vocational office education teachers and four college professors (see Appendix D, Group B)--one, a former office manager--evaluated the various errors identified in an outline. These scoring criteria were also reviewed by East Tennessee VOE teachers at a special conference session.

Errors identified by the researcher were also presented to Group D (see Appendix D), and to East Tennessee VOE teachers for their evaluation in order to determine the weight that would be given to a specific error. Disagreement resulted among evaluators about the weight that should be assigned to a particular error. For example, the weight of a "strike over" error, according to some evaluators, was considered a major error. Other evaluators, however, felt that such errors were intermediate errors because such errors could be corrected without the necessity of retyping the item. Some teachers prefer to consider certain errors as major errors while the typist

is still in the learning stage in order to eliminate such error-making before the typist is employed. This research study counted errors as uncorrectable, correctable, or minor. This policy relates to the office situation, since one of the purposes of the vocational office education programs is to simulate the real office situation in the classroom.

Once the criteria were established regarding identification of typewriting errors and the decision was made regarding the seriousness of a particular error, the final step was the assigning of numerical values to the three weight classifications: (1) major errors, 3 points, (2) intermediate errors, 2 points, and (3) minor errors, 1 point. The decision to assign these weights was based on several weighting systems suggested by West,[10] whose recommendations were based on extensive research. Scores on the performance tests represented the number of points subtracted for errors as opposed to the usual system of subtracting points from a maximum score. Table I presents the final outline that was developed for scoring the final testing program for the performance tests.

---

[10] Ibid.

TABLE I

CRITERIA FOR SCORING LETTERS, MANUSCRIPTS, AND TABLES

	Points
Letters	
Incorrect typing of letter style or punctuation style	3
Incorrect typing of letter parts--style, placement, omission, spacing	3
Omission of carbon copy	50
Typing carbon copy on back of original	3
Failure to correct carbon copy, resulting in serious error	3
Score carbon copy same as original plus major errors	3
Omission of envelope	25
Poor placement of address on envelope horizontally/vertically (exceeding 6 spaces)	3
Manuscript	
Incorrect typing of heading/subheading--centering, placement, spacing	3
Incorrect typing of footnote--placement, content, spacing	
Insignificant	1
Correctable	2
Uncorrectable	3
Tabulation	
Incorrect typing of table parts--centering, capitalization, spacing	3
Incorrect spacing between columns--exceeding two spaces	3
Typing in space between columns	3
Examples of Typographical Errors (Letter, Manuscript, Table)	
Failure to follow instruction--margins, spacing	3
Misspelled word	2
Failure to capitalize	2
Incorrect capitalization	2

TABLE I (continued)

	Points
Strike-over	2
Raised letter	2
Failure to single space or double space problem	3
Transposition of words	2
Extra space between words	1
Space within word	2
Failure to space between words	2
Typing same word twice	3
Omission of word	1
Incorrect spacing after punctuation	1
Abbreviated dates	1
Uneven typing of letter within word	2
Uneven touch	
Character visible	1
Character not visible	2
Omitted dash, hyphen	2
Incorrect word division	
Correctable	2
Uncorrectable	3
Dividing more than 3 words per page	3
Incomplete problem--per line	3
Typing same line twice--incomplete problem, per line	3
Omission of line--incomplete problem, per line	3
Error in interpretation of proofer's mark	
Correctable	2
Uncorrectable	3
Error resulting from machine malfunction	0
Erasure	
Detectable in proofreading	5
Improvable	2

TABLE I (continued)

	Points
Uncorrectable, must retype	3
Typing in space between columns, lines, margins	
Neatly erased	2
Poorly erased	3
Examples of Typographical Errors (Timed Writing)	
Misspelled word	1
Failure to capitalize	1
Incorrect capitalization	1
Strike-over	1
Raised letter--not completely visible	1
Transposition of words	1
Omission of word	1
Omission of line--do not count line in total words	1
Typing same word twice	1
Typing same line twice--do not count line in total words	1
Extra space between words	1
Failure to space between words	1
Space within word	1
Uneven left margin--do not count off	0
Omitted hyphen, dash	1
Light characters (not visible)	1
Incorrect spacing after punctuation marks	1
Incorrect word division	1
Failure to double space--partially or completely	0
Error resulting from machine malfunction	0

CHAPTER V

TESTS ANALYSES--OBJECTIVE TESTS

The objective tests were administered during the summer of 1973 at The University of Tennessee, Knoxville, as a pilot program and administered again to secondary schools and colleges during the winter of 1974 as a final program. Revisions were made following each testing program. The purpose of this chapter is to present the statistical analyses of both pilot and final testing program of the objective tests.

I. PILOT TESTING

The purpose of the pilot testing program was to (1) determine if the two forms of the multiple-choice test were similar and (2) analyze individual test items for the purpose of omission and revision of items before final testing.

Two 85-item multiple-choice tests were developed for the pilot testing program, and the tests were administered to students at The University of Tennessee, Knoxville, during the summer of 1973. Twenty-nine items represented the first minimum typewriting level; thirty-eight items represented the second minimum typewriting level; and eighteen items represented the third minimum typewriting level. The scores were based on the number of items missed.

Table II presents the following statistical comparisons: (1) comparison of the total mean scores between Form A and Form B,

TABLE II

COMPARISON OF MEAN SCORES--PILOT OBJECTIVE TESTS

Comparisons	No.	Mean Scores[a] A	Mean Scores[a] B	t[b]
By Total Test:				
Form A vs Form B	15	25.0	24.3	.033
By Level:				
Form A vs Form B, Level 1	16	6.94	8.18	.902
Form A vs Form B, Level 2	16	9.81	10.35	.329
Form A vs Form B, Level 3	16	6.75	7.71	.668

[a]Mean scores are based on number of errors.

[b]Value of 1.75 required for significance at .10 level.

and (2) comparison of the mean scores between Form A and Form B, level by level.

The two forms were found to be similar tests based on the comparison of the means of the overall test scores. The t value of .033 was not significant at the 10 percent level.[1] The two forms were found to be similar tests based on the comparison of mean scores of the two forms at each level. The t values of .902, .329, and .668 were not significant at the 10 percent level. Therefore, the criterion was met for the comparison of the two forms of the pilot objective tests.

An analysis of each test item was made in order to determine the number of persons who (1) answered the item correctly, (2) chose each alternative, and (3) left the item blank. The results of this analysis preceded the revision of Form A and Form B and final testing in the winter of 1974. Approximately 35 items in each of the two forms were considered for improvement or omission prior to final testing. For example, items 3, 9, and 50 of Form A were changed so that the first choice rather than the last choice read, "none of the following" and "either of the following," as prescribed by test experts. In item 14 of Form b, the answer "c" was changed because the answer did not consider left-handed people. Additional examples of changes made prior to final testing of Form A and Form B are presented in Appendix B.

---

[1] J. P. Guilford and Benjamin Fruchter, Fundamental Statistics in Psychology and Education (New York: McGraw-Hill Book Company, 1973) pp. 160-162.

Fifteen new test items were added to each of the revised tests, making the total of 100 on each alternate form. Eleven items were added to Level 1, 2 items were added to Level 2, and 2 items were added to Level 3. The addition of the new test items provided 40 items for Level 1, 40 items for Level 2, and 20 items for Level 3. The two 100-item tests were administered in the winter of 1974, as the final testing program.

II. FINAL TESTING

The purpose of the final testing program was to determine the reliability of the two test forms and to analyze test items to insure internal strength of the tests.

Students from secondary schools, community colleges, and four-year colleges participated in the final testing program of the typewriting objective tests. Table III provides a listing of schools (coded) by level and number of tests given. Level 1 tests were administered by seven schools or a total of 241 tests; Level 2 tests were administered by four schools or a total of 71 tests; and Level 3 was administered by five schools or a total of 197 tests.

The test data were placed on punch cards for computer analyses. A code sheet is shown in Appendix B. The first computer analysis provided the researcher with the data presented in Table IV and Table V. An analysis of this information revealed that two items on Form A did not print on the test page, which explained the large number of persons leaving items 14 and 83 blank. Further analysis

TABLE III

POPULATION FOR OBJECTIVE TESTS

School	Level (Quarter/Semester)	Number	Total
Secondary			
01	1	39	
02	1	32	
03	3	56	
04	3	30	
05	3	49	
06	1	23	
			229
College			
41	1	30	
41	2	12	
42	1	17	
42	2	15	
43	1	39	
44	2	21	
45[a]	1	30	
46	3	29	
47	2	23	
48	3	33	
49	1	31	
			280

[a]Eliminated after preliminary analysis.

TABLE IV

ITEM RESPONSES ON OBJECTIVE TEST[a] FORM A

Item Number	Responses					Correct Responses	
	A	B	C	D	Blank	Upper	Lower
Level 1							
1	9	11	239[b]	12	3	71	53
2	8	251[b]	2	11	2	74	55
3	47	19	21	183[b]	4	55	42
4	217[b]	5	42	8	2	62	47
5	153[b]	34	78	7	2	48	32
6c	84[b]	137	39	11	3	31	22
7	5	239[b]	29	1	0	71	53
8	11	7	256[b]	0	0	73	61
9	202[b]	8	2	61	1	65	32
10	125[b]	39	59	50	1	41	28
11	5	8	2	259[b]	0	72	61
12	228[b]	33	5	8	0	67	47
13[c]	7	2	256[b]	8	1	72	65
14[c]	39	26[b]	20	57	132	10	8
15	26	9	228[b]	11	0	70	50
16	30	44	27	171[b]	2	56	35
17[c]	28	8	2	236[b]	0	69	42
18	221[b]	4	17	30	2	72	43
19	100[b]	76	61	36	1	36	21
20	2	4	222[b]	45	1	64	44
21	86	24	133[b]	31	0	40	24
22	0	46	222[b]	6	0	66	46
23	8	15	246[b]	4	1	71	41
24	26	9	13	223[b]	3	71	41
25	194[b]	59	13	7	1	61	35
26	5	231[b]	25	13	0	69	53
27	209[b]	29	30	5	1	64	41
28	30	198[b]	38	8	0	68	44
29	21	19	213[b]	18	3	71	37
30[c]	265[b]	4	5	0	0	72	67
31	99	165[b]	3	7	0	0	3
32	7	3	7	256[b]	1	73	62
33	21	33	24	193[b]	3	73	25
34	3	252[b]	13	6	0	72	60
35	10	34	222[b]	7	1	68	49
36	78	57	135[b]	2	2	52	25
37	13	223[b]	28	8	2	69	0
38[c]	16	6	208[b]	40	4	60	48
39	13	7	246[b]	8	0	73	53
40	154[b]	10	39	71	0	63	26

TABLE IV (continued)

Item Number	Responses					Correct Responses	
	A	B	C	D	Blank	Upper	Lower
Level 2							
41	57	70	133[b]	13	1	52	18
42	8	15	16	234[b]	1	73	50
43	131[b]	105	8	29	1	57	20
44	30	94	148[b]	1	1	65	15
45	85	21	29	139[b]	0	63	19
46	140[b]	26	62	39	7	59	15
47	44	120[b]	53	54	3	42	23
48	7	3	257[b]	6	1	74	59
49	8	7	5	254[b]	0	74	58
50	121[b]	90	42	16	5	59	15
51	66	54	30	121[b]	3	40	23
52	3	241[b]	3	27	0	68	57
53	144[b]	15	25	87	3	54	22
54	95	9	107[b]	59	4	35	19
55	28	188[b]	74	33	1	67	38
56	56	124[b]	66	21	7	55	20
57	22	66	15	168[b]	3	66	25
58	55	116[b]	71	24	8	52	12
59	29	200[b]	36	7	2	65	38
60	58	188[b]	16	12	0	70	34
61	14	17	107[b]	133	3	56	12
62	19	243[b]	7	4	1	71	52
63[c]	54	30	176	13	1	55	41
64	75	10	24	160[b]	5	58	30
65[c]	85[b]	99	65	18	7	36	16
66	22	8	27	214[b]	3	66	45
67	3	55	179[b]	34	3	67	34
68	5	29	5	233[b]	2	69	49
69	10	226[b]	19	18	1	73	41
70	33	35	108[b]	91	7	32	20
71	10	67	175[b]	16	6	59	29
72	44[b]	57	15	152	6	19	9
73	16	217[b]	25	10	6	68	47
74	27	25	146	74[b]	2	32	11
75	65	16	84	106[b]	3	42	13
76	233[b]	5	23	9	4	68	54
77[c]	126	75	58[b]	9	6	19	14
78	49	105	53	62	5	36	23
79	58	73	124[b]	12	7	30	32
80	9	13	88	158[b]	6	66	17

TABLE IV (continued)

Item Number	Responses					Correct Responses	
	A	B	C	D	Blank	Upper	Lower
Level 3							
81	124[b]	69	48	23	10	55	14
82[c]	84	63	63	52[b]	12	14	13
83[c]	9	97[b]	12	17	139	19	28
84	113[b]	79	28	42	12	48	13
85	20	26	215[b]	8	5	72	44
86	178[b]	61	23	7	5	62	29
87	48	34	164[b]	18	10	63	30
88	147[b]	45	45	23	14	52	22
89	206[b]	19	33	8	8	68	38
90	60	64	32	105[b]	13	52	13
91	62	35	13	156[b]	8	63	19
92	36	19	40	172[b]	7	61	26
93	19	40	112	93[b]	10	38	11
94	104	31	33	96[b]	10	40	16
95	20	76[b]	139	27	12	31	9
96	32	46	131[b]	48	17	57	21
97[c]	116	28	85	34	11	46	24
98[c]	31	61	93[b]	68	21	31	20
99	141	24	58[b]	35	16	25	7
100	100	33	117[b]	9	15	40	17

[a]One school eliminated after preliminary analysis

[b]Correct answer to test item

[c]Omitted in final revision of tests

[d]Based on upper and lower 27 percent.

TABLE V

ITEM RESPONSES ON OBJECTIVE TEST[a] FORM B

Item Number	Responses					Correct Response	
	A	B	C	D	Blank	Upper	Lower
Level 1							
1	4	11	7	212[b]	1	49	49
2	43	176[b]	12	4	9	48	33
3	154[b]	41	14	23	3	45	23
4	172[b]	16	8	37	2	46	32
5	144[b]	21	5	64	1	42	28
6[c]	55[b]	44	88	47	1	9	15
7	118[b]	24	8	85	0	31	27
8	194[b]	8	25	6	2	48	38
9	8	186[b]	38	2	1	43	42
10	3	8	149[b]	72	3	42	29
11	5	38	9	182[b]	1	46	40
12	42	61	3	124[b]	5	30	31
13[c]	5	5	220[b]	5	0	49	59
14[c]	17	113[b]	65	19	21	23	31
15	2	8	3	221[b]	1	49	56
16	24	9	183[b]	17	2	43	39
17[c]	1	230[b]	1	3	0	50	61
18	21	14	9	189[b]	2	45	33
19	83	107[b]	18	26	1	27	19
20	4	41	180[b]	9	1	42	44
21	101[b]	52	14	66	2	34	19
22	3	220[b]	8	4	0	49	53
23	8	204[b]	22	1	0	49	45
24	23	18	189[b]	3	2	50	38
25	27	10	8	190[b]	0	46	41
26	41	7	47	136[b]	4	9	12
27	204[b]	24	6	0	1	49	44
28	36	16	177[b]	5	1	43	43
29	16	12	29	177[b]	1	48	34
30[c]	2	210[b]	12	5	0	48	54
31	4	55	3	173[b]	0	42	39
32	2	18	5	210[b]	0	48	50
33	7	188[b]	11	27	2	49	36
34	20	194[b]	10	11	0	49	40
35	4	191[b]	35	5	0	49	40
36	36	110[b]	69	18	2	26	27
37	32	136[b]	18	46	3	44	22
38[c]	3	2	220[b]	9	1	47	58
39	9	20	15	191[b]	0	44	37
40	23	17	92	100[b]	1	11	33

TABLE V (continued

Item Number	Responses					Correct Responses	
	A	B	C	D	Blank	Upper	Lower
Level 2							
41	6	20	90	119[b]	0	42	16
42	16	190[b]	9	18	2	48	34
43	220[b]	9	6	0	0	49	54
44	197[b]	24	10	2	2	48	41
45	72	113[b]	30	17	3	40	17
46	21	13	63	137[b]	1	39	24
47	43	24	129[b]	33	6	42	22
48	10	209[b]	7	8	1	50	45
49	203[b]	12	10	8	2	48	41
50	37	22	15	156[b]	5	44	31
51	74	44[b]	56	56	5	26	11
52	3	7	219[b]	5	1	50	50
53	19	7	10	197[b]	2	49	48
54	58	6	166[b]	4	1	49	22
55	26	21	163[b]	25	0	49	23
56	30	18	87	93[b]	7	37	12
57	51	46	34	96[b]	8	37	13
58	36	106[b]	26	60	7	39	13
59	56	55	84[b]	39	1	31	15
60	49	133[b]	17	35	1	5	17
61	4	22	138[b]	68	3	34	36
62	30	22	171[b]	10	2	46	29
63[c]	141[b]	35	8	48	3	46	26
64	32	12	27	156[b]	8	41	30
65[c]	92	29	70[b]	38	6	18	18
66	11	26	191[b]	7	0	49	40
67	3	162[b]	53	15	2	48	27
68	10	47	13	165[b]	0	45	28
69	211[b]	11	6	7	0	48	49
70	60	88	42	38	7	30	12
71	54	21	14	143[b]	3	44	24
72	12	160[b]	36	22	5	43	31
73	48	146[b]	22	14	5	44	26
74	11	11	107	105[b]	1	29	24
75	33	9	100	91[b]	2	24	20
76	217[b]	4	11	3	0	49	51
77[c]	107	55	54[b]	15	4	14	16
78	45	39	84[b]	64	3	23	11
79	74	62[b]	67	23	9	21	9
80	67	30	105[b]	27	6	45	9

TABLE V (continued)

Item Number	Responses					Correct Responses	
	A	B	C	D	Blank	Upper	Lower
Level 3							
81	33	170[b]	11	18	3	47	29
82[c]	74	34	50[b]	64	13	19	10
83[c]	18	135[b]	6	60	16	36	26
84	89	58[b]	37	44	7	13	11
85	67	13	24	121[b]	10	44	16
86	181[b]	22	17	8	7	50	31
87	39	35	116[b]	35	10	43	16
88	40	114[b]	36	37	8	41	14
89	41	17	7	154[b]	16	44	78
90	104[b]	26	43	47	15	36	14
91	39	19	153[b]	15	9	49	23
92	135[b]	16	55	21	8	43	22
93	82	80[b]	18	44	11	30	12
94	42	44	43	90[b]	16	38	15
95	45	25	118[b]	27	20	41	20
96	45	29	100[b]	27	24	32	8
97[c]	80	65	31[b]	44	15	5	11
98[c]	53	63	65[b]	31	23	14	15
99	98[b]	67	28	22	20	33	17
100	28	134[b]	30	27	16	43	19

[a]One school eliminated after preliminary analysis.

[b]Correct answer to test item.

[c]Omitted in final revision of test.

[d]Based on upper and lower 27 percent.

of Form A showed that items 31 and 79 revealed that more students who missed the items were in the upper 27 percent in scoring than in the lower 27 percent in scoring. Similar results were found in Form B with 20 items.

The results were so unusual in the number of items lacking discrimination or having negative discrimination that a further analysis was made of the population taking the examination. One college class considered as a Level 1 group was found to have students with one and two years of high school typewriting. This calss was, therefore, eliminated; and a revision was made in the discrimination analysis. The results were then considered as typical and acceptable. After omitting these 30 scores, all further analyses were made on 259 scores for Form A and 220 scores for Form B.

Based on the findings of these analyses, the decision was made not to include college students in the testing program of the performance tests when the final testing program was conducted in the spring of 1974. Students at various typewriting achievement levels were administered the complete 100-item objective test. On the other hand, students taking the performance tests took the level that best fitted their period of training, plus one level higher.

Test Similarity

The mean score for Form A was 60.75, and the mean score for Form B was 61.80. These mean scores were not significantly different at the 10 percent level. An examination was also made of the means by test level for each of the group levels taking the examination.

To meet the criterion, none of these means should differ at the 10 percent level of significance.[2] Table VI presents the comparisons of the mean scores of the two forms of the objective tests, with the scores represented by the number of items missed. The tests were administered to three different levels of typewriting students, and the three different levels represented in the tests were: (1) items 1-40, Level 1; (2) items 41-80, Level 2; and (3) items 81-100, Level 3. Thirteen items had been eliminated from the total tests prior to the test of the similarity of the two forms--six items from Level 1, three items from Level 2, and four items from Level 3, as shown in Appendix B.

The criterion was met for the similarity of tests. No significant differences existed between means of total scores, group level scores, or scores within groups at the 10 percent level of significance.

Reliability of Tests

The Pearson method (Spearman-Brown correction of odd-even test items) of determining reliability was used for the two forms of the tests.[3] Coefficients for Form A and Form B, after the correction formula was applied, yielded .86 and .89, respectively. The two forms of the objective tests, therefore, met the criterion established for the reliability of tests.

---

[2]Guilford and Fruchter, pp. 160-162.

[3]Robert L. Ebel, Essentials of Educational Measurement (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1972), p. 418.

TABLE VI

COMPARISON OF MEAN SCORES--FINAL OBJECTIVE TESTS*

Group Level	Test Level	Possible Score	Form A		Form B		t**
			No.	Mean	No.	Mean	
1	1	35	123	25.26	90	24.13	.045
	2	37		18.09		19.66	.081
	3	16		6.59		6.41	.025
2	1	35	40	27.10	31	26.84	.009
	2	37		26.35		27.52	.042
	3	16		10.58		10.97	.035
3	1	35	96	25.28	99	24.10	.047
	2	37		21.57		22.18	.027
	3	16		8.17		8.79	.068
Total	1	35	259	25.55	220	24.50	.041
	2	37		20.66		21.90	.056
	3	16		7.79		8.12	.038

*After revision.

**Value of 1.64 required for significance at .10 level.

To test the significance of difference between the two reliability coefficients, Fisher's formula for comparing uncorrelated coefficients[4] was applied.

$$\sigma_{dz} \sqrt{\frac{1}{N_1-3} + \frac{1}{N_2-3}}$$

$$Z = \frac{Z_1 - Z_2}{\sigma_{dz}}$$

The coefficients for .86 and .89 were 1.293 and 1.422, respectively. With N_1 = 220 and N_2 = 259, a Z of 1.40 was found not to be significant at the 10 percent level (1.645 required).

Difficulty of Test Items[5]

The difficulty of test items for the entire 100 items is shown on Table VII according to .10 intervals. No adjustment was made on a test item based solely on its difficulty index as the distribution within the various intervals seemed somewhat alike for the two forms.

After revisions based on discrimination and irregularities in the exams were made, the new difficulty indexes were computed and compared. The new difficulty indexes are shown with each test item in Appendix B. The intermediate range of .40 to .60 for difficulty indexes contained 31 percent in Form A and 31 percent in Form B. The wider range of .30 to .70 contained 52 percent in Form A and

---

[4]Guilford, pp. 166-167.

[5]Ebel, Essentials of Educational Measurement, p. 418.

TABLE VII

INDEX OF DIFFICULTY--OBJECTIVE TESTS

Index	Form A				Form B			
	Initial		Revised		Initial		Revised	
	No.	%	No.	%	No.	%	No.	%
90-100	1	1	0	0	0	0	0	0
80-89	3	3	1	1	4	4	0	0
70-79	3	3	3	4	5	5	2	2
60-69	10	10	8	9	7	7	5	5
50-59	15	15	11	13	14	14	13	15
40-49	13	13	16	18	15	15	14	16
30-39	14	14	11	13	18	18	20	23
20-29	17	17	16	18	17	17	19	22
10-19	16	16	15	17	14	14	11	13
0-9	8	8	6	7	6	6	3	4
	100	100	87	100	100	100	87	100

59 percent in Form B. The criterion for similarity of range was met.

After revision, neither Form A or Form B contained items with a .90 or higher index; however, Form A contained 7 percent items below .10, and Form B contained 4 percent items below .10. Form A, therefore, did not meet the criterion.

Discrimination of Test Items[6]

The indexes of discrimination were computed from scores of the high and low 27 percent for Form A and Form B for the 100 items. The indexes are shown in Table VIII by intervals of .10. Before revision, Form A contained 44 percent of the items meeting the criteria of .30, and 10 percent were below the .10 value. Form B contained 52 percent of the items meeting the criterion of .30 and 12 percent below .10.

After revision of the items based on the irregularities in the examination and elimination of 13 items with low discrimination indexes, the discrimination indexes were refigured on the basis of the 87-item test. These indexes are also shown in Table VIII. All of these new discrimination indexes are shown with the test items in Appendix B. The criterion was met on the revised forms with Form A containing 54 percent of the items of .30 or above and Form B containing 59 percent at .30 or above. No items remained in the examination with a .10 or lower discrimination; therefore, the criterion was met.

---

[6]Ebel, Essentials of Educational Measurement, p. 418.

TABLE VIII

INDEX OF DISCRIMINATION--OBJECTIVE TESTS

Index	Form A				Form			
	Initial		Revised		Initial		Revised	
	No.	Acc.%	No.	Acc.%	No.	Acc.%	No.	Acc.%
.50+	11	11	15	17	16	16	18	21
.40-.49	12	23	14	33	16	32	20	44
.30-.39	11	44	18	54	20	52	23	59
.20-.29	22	66	18	63	21	73	11	87
.10-.19	24	90	22	100	15	88	15	100
Below .10	10	100	0	0	12	100	0	0
Total	100		87		100		87	

CHAPTER VI

TESTS ANALYSES--PERFORMANCE TESTS

The performance tests developed in the present research were administered during the winter of 1974, revised, and administered again in the spring of 1974. The purpose of Chapter VI is to present the findings of the two testing programs.

I. PROCEDURES

Alternate test items were developed to represent each of the first four levels of minimum performance standards as presented in a state curriculum guide for Tennessee.[1] Level 1 tests consisted of (1) a straight-copy timed test for determining speed, errors, and timed writing score, (2) a personal letter, and (3) a one-column tabulation problem. Level 2 and Level 3 tests consisted of (1) a straight-copy timed test for determining speed, errors, and timed writing score, (2) a business letter, (3) a two-column tabulation problem, and (4) a manuscript report. Level 4 tests were similar in content to Level 2 and Level 3 tests but, in addition, included a test of the student's ability to type numbers in context.

---

[1] Educational Office Careers: An Articulated Curriculum Guide for Junior High Schools, Secondary Schools, Area Vocational-Technical Schools, Community Colleges, Tennessee Department of Education, Division of Vocational-Technical Education, Nashville, Tennessee 37219 (Murfreesboro, Tennessee: Vocational Curriculum Laboratory, 1972).

Comparisons were made between similar test items as opposed to a total score for all test items on a particular test. This procedure allowed the researcher to determine which test item or items within a given test met the established criteria.

Timed Writing was defined as typewriting speed in words per minute; Errors was defined as the number of errors incurred on the timed writing; Timed Writing Score was the subtraction of errors from the timed writing speed; Letter, Tabulation, and Manuscript scores were the number of points subtracted from the individual test items; and the score for Typewriting Numbers in Context was stated in percentage of correct items typed.

The data from the two testing programs were recorded on punched cards for computer analysis. The code sheet is shown in Appendix C.

The purpose of the testing programs was to compare similar test items between levels and to compare similar test items on alternate forms of the tests. The criteria were as follows: (1) a significant difference should be found between similar test items when they are compared between performance levels, and (2) there should be no significant difference found between similar test items on alternate forms of tests.

II. PILOT TESTING

Secondary schools, community colleges, and four-year colleges participated in the pilot testing program. There were 349 usable sets of scores, and Table IX shows the population of the testing program.

TABLE IX

POPULATION FOR PILOT PERFORMANCE TESTS

School Number	Level	Number
10	1-2	30
	3-4	40
20	1-2	33
	3-4	44
30	3-4	41
50	1-2	18
	3-4	52
60	1-2	17
	2-3	14
70	1-2	17
	2-3	26
80	1-2	17

Tests analyses and comments from users of the pilot tests (see Appendix C) resulted in the following changes in the testing procedures of the final testing program:

1. Instructions for the typewriting of each test item were changed to insure that instructions were more specific to the students and teachers.

2. Instructions to teachers were changed to insure that instructions were more specific for the administration of the complete testing program.

3. The order of typewriting each test item was changed to facilitate administration of the testing program. For example, an item requiring less than the allotted time was moved to the end of the testing program.

4. The procedure for handing out tests was changed to insure that students took complete Form A tests or Form B tests and not a combination of items from the two forms. An example of the various combinations in the administering of the pilot tests were: (1) Level 1, Form A with Level 2, Form A; (2) Level 1, Form A with Level 2, Form B; (3) Levle 1, Form B with Level 2, Form B; and (4) Level 1, Form B with Level 2, Form A.

5. Colleges were eliminated from the final testing program for the performance tests because of the varying typewriting backgrounds of college students. For example, screening out students in a beginning college typewriting class who have had previous typewriting education is difficult; and, too, policy regarding the screening of student

varies from college to college. For evaluation purposes, the tests developed in the present research required the testing of typewriting students with similar typewriting education; the secondary school meets the criteria.

A comparison of combined secondary schools and college scores yielded inconsistent results in the comparison of similar test items between performance levels; however, the criterion was met for the comparison between similar test items on alternate tests.

III. FINAL TESTING

The test forms from the pilot testing program were revised and administered in the spring of 1974. Test revisions were based on statistical anlyses of the pilot testing program and on the recommendations submitted by the teachers who participated in the pilot testing program (see Appendix C). Seventeen secondary schools from all sections of the state of Tennessee participated in the final testing program, which resulted in 611 usable tests. Table X presents the population of the final testing program.

The purpose of the final testing program for the performance tests was to determine if test items (1) discriminated between test levels and (2) were similar on alternate tests.

Comparison by Test Level

Table XI presents the means and Table XII shows the comparison

TABLE X

POPULATION OF TESTING PROGRAM--FINAL PERFORMANCE TESTS

School Number	Level	Number
01	1-2	24
03	1-2	15
	2-3	35
	3-4	35
	3-4	25
05	3-4	13
07	3-4	25
	3-4	35
09	1-2	18
11	2-3	25
13	3-4	29
15	3-4	15
17	2-3	32
	3-4	19
21	3-4	28
23	2-3	27
25	1-2	24
27	2-3	32
	3-4	25
31	3-4	26
	3-4	32
33	2-3	31
35	1-2	26
37	1-2	15

TABLE XI

MEANS OF SIMILAR TEST ITEMS BY LEVELS, FINAL PERFORMANCE TESTS

Semester and Level	Test Items[a]											
	TW[b]		E[b]		TWS[b]		L[b]		T[b]		M[b]	
Semester 1												
1a-2a	30.47	29.86	8.62	10.37	22.02	19.48	10.67	29.77	4.33	18.15		
1b-2b	30.73	30.63	8.50	9.82	22.32	20.85	11.66	28.39	4.79	18.29		
Semester 2												
2a-3a	36.64	33.64	7.95	9.70	28.78	24.03	34.51	69.27	7.22	16.15	27.03	49.85
2b-3b	37.46	35.31	9.57	10.61	27.89	24.67	30.61	68.87	6.83	21.18	28.11	57.64
Semester 4												
3a-4a	49.06	51.98	9.70	10.89	39.49	41.38	30.51	53.18	6.07	18.22	22.20	54.61
3b-4b	50.06	51.69	9.47	11.45	40.71	40.18	39.88	61.05	7.04	21.23	29.02	60.81
Semester 4-VOE												
3a-4a	51.01	54.66	8.32	9.72	42.85	45.07	16.97	39.75	6.18	13.68	18.93	50.75
3b-4b	53.16	55.36	7.46	9.76	45.70	45.60	20.61	36.21	5.21	15.76	18.99	48.75

[a]TW, Timed Writing; E, Errors; TWS, Timed Writing Score; L. Letters, T, Tabulation; M, Manuscript.

[b]Columns 1 and 2 correspond to the first and second level of test on the first column of tables.

TABLE XII

COMPARISON OF MEANS--FINAL PERFORMANCE TESTS[a]

Semester and Level	Test Items[b]					
	TW	E	TWS	L	T	M
Semester 1						
1a-2a	.11	1.01	.67	4.03[c]	5.80[c]	-
1b-2b	.02	.80	.38	4.31[c]	5.67[c]	-
Semester 2						
2a-3a	.58	1.34	1.22	4.32[c]	4.87[c]	3.87[c]
2b-3b	.40	.70	.82	4.82[c]	6.14[c]	4.38[c]
Semester 4						
3a-4a	.39	.77	.31	3.50[c]	6.01[c]	5.20[c]
3b-4b	.21	1.22	.08	2.65[c]	5.81[c]	4.31[c]
Semester 4-VOE						
3a-4a	.40	.90	.29	4.36[c]	4.15[c]	4.86
3b-4b	.23	1.53	.01	3.08[c]	5.26[c]	4.67

[a] t values

[b] TW, Timed Writing; E, Errors; TWS, Timed Writing Score; L, Letters; T, Tabulation; M, Manuscript.

[c] Significant at the 5 percent level.

of mean scores of the various test items, by levels.[2] The purpose of such a comparison was to determine if the items in the two performance tests were discriminating between test levels.

Students taking Level 1 tests were also administered Level 2 tests; and students taking Level 1 alternate tests were also administered Level 2 alternate tests. On the first day of testing the tests were handed out in such a manner that (1) one-fourth of the students were administered Level 1, (2) one-fourth of the students were administered Level 2, (3) one-fourth of the students were administered Level 1, alternate, and (4) one-fourth of the students were administered Level 2, alternate. Each student received the opposite test on the second day of testing. This procedure was followed with the other levels of tests.

An analysis of the data in Table XII shows that no significant differences were found in the comparison of mean scores of the Timed Writing speed scores, the Error scores, or the scores for the Timed Writing Score at any of the four test levels. The comparison of mean scores, however, by level for Letter scores, Tabulation scores, and Manuscript scores yielded significant differences throughout the four test levels. The criterion was, therefore, met for Timed Writings, Errors, and Timed Writing Score; however, the criterion was not met for Letters, Tabulation, and Manuscript.

---

[2] J. P. Guilford and Benjamin Fruchter, Fundamental Statistics in Psychology and Education (New York: McGraw-Hill Book Co., 1973), pp. 160-162.

The results of the straight-copy tests could not be explained. Whether straight-copy material could provide material that would distinguish achievement at the various levels was not determined. The material developed for this research was based on the standards presented in a state curriculum guide for Tennessee.[3] This straight-copy material was scored according to (1) words per minute typed by each student, (2) total errors made on the timed writing, and (3) the subtraction of (2) from (1). The syllabic intensity of the material was progressively higher as the test level increased.

Comparisons of Similar Test Items

As stated earlier, similar forms were constructed for this research, and the method of comparing mean scores between alternate test forms and between similar test items was considered the best procedure in testing the similarity of the performance tests.

It is recognized that the *t* test applied in the context of comparing equivalent tests or establishing criteria of parallelism is not a recommended procedure. In fact, the basic assumption underlining the use of *t* ratios for testing the significance of the differences between the means are not met in the applications reported in this study.

---

[3] Educational Office Careers: An Articulated Curriculum Guide for Junior High Schools, Secondary Schools, Area Vocational-Technical Schools, Community Colleges, Tennessee Department of Education, Division of Vocational-Technical Education, Nashville, Tennessee 37219 (Murfreesboro, Tennessee: Vocational Curriculum Laboratory, 1972).

According to Ferguson, in comparing equivalent tests, some criteria of parallelism is required. Test content, test items, instructions for giving tests should be similar. "The parallel forms should have approximately equal means and standard deviations."[4] The t test provided both comparability of parallelism by considering both the means and standard deviations and also answering the question as to whether the tests differed between performance levels.

Table XIII presents the means and Table XIV shows the comparisons of the mean scores of the alternate test forms for each of the four performance levels. The mean scores of the two similar test forms for Level 1 tests were compared by Timed Writing speed scores, by the number of Errors made on the timed writing, by Timed Writing Scores, by Letter scores, by Tabulation scores, and by Manuscript scores. This same procedure was followed for Level 2, Level 3, and Level 4 tests. A comparison of the mean scores throughout the four test levels resulted in no significant differences between similar test items at the 10 percent level. The criterion established for similarity of test items was, therefore, met with all test items.

---

[4]George A. Ferguson, Statistical Analysis in Psychology and Education (3rd ed.; New York: McGraw-Hill Book Co., 1971), p. 366.

TABLE XIII

MEANS OF SIMILAR TEST ITEMS ON ALTERNATE FORMS, FINAL PERFORMANCE TESTS

Level and Form	Test Items[a]											
	TW[b]		E[b]		TWS[b]		L[b]		T[b]		M[b]	
1a-1b	30.47	30.73	8.62	8.50	22.02	22.32	10.67	11.66	4.33	4.79		
2a-2b	33.97	34.67	8.90	9.67	25.11	25.02	32.64	29.70	11.53	11.51	28.53	30.28
3a-3b	43.90	45.40	9.32	9.34	34.70	36.09	41.13	45.37	9.82	11.81	31.52	36.95
4a-4b	53.14	43.33	10.38	10.69	42.98	42.60	47.36	49.95	16.25	18.79	52.94	55.42

[a]TW, Timed Writing; E, Errors; TWS, Timed Writing Score; L, Letters; T, Tabulation; M, Manuscript.

[b]Columns 1 and 2 correspond to the first and second level of test in the first columns of the table.

TABLE XIV

FINAL PERFORMANCE TESTS[a]

Level and Form	Test Items[b]					
	TW	E	TWS	L	T	M
1a-1b	.04	.06	.07	.33	.31	-
2a-2b	.17	.59	.03	.67	.01	.40
3a-3b	.36	.02	.40	.83	1.33	1.34
4a-4b	.03	.22	.07	.39	.94	.36

[a] t values--t value must be 1.64 for significance of .10 level.

[b] TW, Timed Writing; E, Errors; TWS, Timed Writing Score; L, Letters; T, Tabulation; M, Manuscript.

CHAPTER VII

SUMMARY

The problem of this study was to develop typewriting tests to be used as pretests and posttests in typewriting and Vocational Office Education programs. The tests were designed to evaluate typewriting students at various performance levels.

The research was conducted during the summer of 1973 and the winter and spring of 1974. Approximately 2,000 students in over 30 secondary schools and colleges in the state of Tennessee participated in the research:

The procedures followed in the research were as follows:

1. The development of an outline to be used in the construction of test items and in the interpretation of the correct methods of typing the test items (and the evaluation of the procedures by professional groups);

2. The development of criteria for scoring the performance tests, and presenting the criteria to a professional group for evaluation;

3. Establishing test criteria based on the recommendations of experts in educational measurement as reviewed in the literature and related research;

4. The development of short answer and performance tests, and presenting the tests to professional groups for evaluation;

5. Trial testing and revision of instruments prior to final testing; and

6. The application of selected statistical procedures to evaluate the various tests.

I. SUMMARY OF FINDINGS

Specific statistical analyses were performed, and the extent to which these criteria were met follows:

1. The reliability coefficient of the two forms of the objective tests was to be greater than .85. Form A had a reliability coefficient of .86, and Form B .89. The two forms of the objective tests, therefore, met the criterion.

2. The two forms of the objective tests were to contain at least 50 percent of the items with a discrimination index of .30 or greater, with less than 5 percent of the items below .10. After revision, Form A yielded 51 percent of the items with an index of .30 or greater, with no items less than .10. Form A, therefore, met the criteria. Form B had 68 percent of the test items with an index of .30 or greater, with no item having an index of less than .10. Form B, therefore, met the criteria after revision.

3. The two forms of the objective tests were to be similar in the percentages of difficulty indexes, with less than 5 percent of the items being above .90 or below .10. Form A, after revision, had a total of 7 percent of the test items with an index below .10. Form A, therefore, did not completely meet the criterion. Form B,

after revision, had a total of 4 percent of the test items with below .10. Form B, therefore, met the criterion.

4. The two forms of the objective tests should not be significantly different in mean scores at the 10 percent level. The t values between the mean scores of Form A and Form B were compared by test groups within test levels. No significant differences were found at the 10 percent level between similar test scores (see Table VII, page 59), therefore, the criterion was met for similarity of forms.

5. There should be a significant difference found at the 5 percent level between mean scores of similar test performance items when test items are compared between levels.

a. Comparisons of Timed Writings, Errors, and Timed Writing Score resulted in no significant differences in mean scores between Level 1 and Level 2, Level 2 and Level 3, and Level 3 and Level 4 (see Table XIV, page 74). The criteria, therefore, were not met.

b. Comparisons of Letters, Tabulation, Manuscripts, and Typewriting Numbers in Context resulted in significant differences in mean scores between Level 1 and Level 2, Level 2 and Level 3, and Level 3 and Level 4 (see Table XIV). The criterion, therefore, was met.

6. There should be no significant difference found between mean scores of similar performance test items on alternate tests at the 10 percent level. No significant differences were found in the mean scores of similar test items at the 10 percent level for the

seven test items contained in each of the alternate tests (see Table XIV, page 74).

The following observations are made from the preceding findings:

1. Typewriting Numbers in Context was required at Level 4 only and, therefore, could not be compared by levels.

2. Form A of the objective tests did not meet the criterion established for the percentage of difficulty indexes.

3. The criterion was not met for Timed Writings, Errors, and Timed Writing Score when compared between levels, as summarized above. Though the material was increasingly difficult in syllable intensity as the level of straight-copy material increased, no significant differences were found.

II. RECOMMENDATIONS

Based on the data obtained in this research, the following recommendations are suggested:

1. Additional items should be constructed for the objective tests so that two 100-item multiple-choice tests might be available for use by teachers. Some of the items omitted in the final revision might be improved and retained in the tests.

2. Research should be conducted to determine if straight-copy typewriting materials can be developed that will discriminate between the various performance levels.

3. The test materials developed in the present study should be used by typewriting and Vocational Office Education programs. The data should be analyzed in the manner followed in the present study in order that continuous evaluation for test improvement can be maintained.

4. Large scale test development such as the present study should be carried out in the other skills.

5. Research should be conducted to establish a reliable scoring criteria for Business Education and Vocational Office Education teachers in skill subjects requiring tests of performance. Such research could bring to Business Education and Vocational Office Education teachers scoring criteria that would insure uniform measurement of student achievement.

BIBLIOGRAPHY

BIBLIOGRAPHY

A. RESEARCHES

Baldree, Edith. "An Analysis of Multiple-Choice Questions Prepared to Measure the Achievement of 1972 Bradley High School Typewriting Students." Unpublished problem, The University of Tennessee, Knoxville, February, 1973.

Batchelor, Ruth G. "The Construction of a Standardized Test in Typewriting for Use on the Collegiate Level." Unpublished Doctoral dissertation, New York University, New York, 1950.

Chen, Marjorie Y. "A Comparison of Terminal Achievement Between Structural-Reinforced Production Assignments and Non-Structured Production Assignments in Programmed Intermediate Collegiate Typewriting." Unpublished Master's thesis, Brigham Young University, Provo, Utah, 1972.

Fulcher, Carolyn. "Evaluation of First Year Typewriting Students in Public High Schools in the State of Tennessee." Unpublished Master's thesis, The University of Tennessee, Knoxville, 1966.

Pope, Lois. "Production Work in Second-Year Typewriting in Four Textbooks." Unpublished Master's thesis, The University of Tennessee, Knoxville, 1956.

Strunk, Flonnie. "The Development of Valid and Reliable Insurance Tests for Secondary School General Business Classes." Unpublished Doctoral dissertation, The University of Tennessee, Knoxville, 1967.

Swayne, Ruth. "A Construction of a Filing Test for High School Vocational Office Education." Unpublished Master's thesis, The University of Tennessee, Knoxville, 1970.

Thomas, Archie C. "The Development of a Criterion for the Measurement of Shorthand Transcription Production." Monograph 77. Cincinnati: South-Western Publishing Company, May, 1972.

Van Schlick, Ruth Josephine. "The Relationship Between Test Scores on Straight-Copy Typewriting and Simulated Office Production Problems as Measured on Electric Typewriters." Unpublished Doctoral dissertation, University of Pittsburgh, 1968.

Wilson, Patricia. "A Review of the Format and Trends of Production Typewriting Material as Revealed in Typewriting Textbooks." Unpublished Doctoral dissertation, University of Wisconsin, Milwaukee, 1966.

B. BOOKS

Adams, G. A. Measurement and Evaluation in Education, Psychology, and Guidance. New York: Holt, Rinehart, and Winston, 1964.

Ahman, J. Stanley. Testing Student Achievement and Aptitude. Washington: Center for Applied Research in Education, 1962.

Bennett, Carl A., and Norman L. Franklin. Statistical Analysis in Chemistry and the Chemical Industry. John Wiley and Sons, Inc., 1954.

DeBrum, S. Joseph and William John Mason. "Evaluation in General Business," Evaluation of Pupil Progress in Business Education. Volume 17. The American Business Education Yearbook, 1960.

Downie, N. M. Fundamentals of Measurement. Second edition. New York: Oxford University Press, 1967.

_____, and R. W. Heath. Basic Statistical Methods. Third edition. New York: Harper and Row, 1970.

Ebel, Robert L. Essentials of Educational Measurement. Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1972.

_____. Measuring Educational Achievement. Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1965.

Educational Office Careers: An Articulated Curriculum Guide for Junior High Schools, Secondary Schools, Area Vocational-Technical School, Community Colleges. Tennessee Department of Education, Division of Vocational-Technical Education, Nashville, Tennessee, 37219. Murfreesboro, Tennessee: Vocational Curriculum Laboratory, Box 114, 1972.

Education for Office Careers: An Instructional Outline for Typewriting, Office Machines, Dictating and Transcribing, Mailing, Filing, Telephoning and Communicating, Clerical, Securing Data, Mathematics, Financial and Record Keeping, Editorial, Meeting and Working with People; Miscellaneous. Tennessee Department of Education, Division of Vocational-Technical Education, Nashville, Tennessee, 37219. Murfreesboro, Tennessee: Vocational Curriculum Laboratory, Box 114, 1972.

Ferguson, George A. Statistical Analysis in Psychology and Education. New York: McGraw-Hill Book Company, 1959.

_____. Statistical Analysis in Psychology and Education. Third edition. New York: McGraw-Hill Book Co., 1971.

Green, John A. Teacher-Made Tests. Harper and Row, Publishers, 1968.

Gronlund, Norman E. Constructing Achievement Tests. Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1968.

Guilford, J. P., and Benjamin Fruchter. Fundamental Statistics in Psychology and Education. New York: McGraw-Hill Book Co., 1973.

Hannah, J. Marshall, Estelle L. Popham, and Esther Kihn Beamer. Secretarial Procedures and Administration. Concinnati: South-Western Publishing Company, 1968.

Hardaway, Mathilde. Test and Measurements in Business Education. Third edition, Cincinnati: South-Western Publishing Company, 1966.

Lessenberry, D. D., S. J. Wanous, and C. H. Duncan. College Typewriting: Complete Course. Eighth edition, Cincinnati: South-Western Publishing Company, 1969.

Lessenberry, D. D., T. James Crawford, Lawrence W. Erickson, Lee R. Beaumont, and Jerry Robinson. Century 21 Typewriting: A Complete Course. Cincinnati: South-Western Publishing Company, 1972.

Lloyd, Alan C., John L. Rowe, and Fred Winger. Typing 75: Advanced. New York: Gregg Division of McGraw-Hill Book Company, 1970.

_____. Typing 75: Basic. New York: Gregg Division of McGraw-Hill Book Company, 1970.

_____. Typing 75: Expert. New York: Gregg Division of McGraw-Hill Book Company, 1970.

Remmers, H. H., and N. L. Gage. Educational Measurement and Evaluation. New York: Harper and Brothers, 1955.

Rowe, John L., Alan C. Lloyd, and Fred E. Winger. Typing 300, Volume One: General Course. Fifth edition. New York: Gregg Division of McGraw-Hill Book Company, 1972.

_____. Typing 300, Volume Two: Vocational Course. Fifth edition. New York: Gregg Division of McGraw-Hill Book Company, 1972.

Satter, George. "Principles of Test Selection, Construction, and Use," Evaluation of Pupil Progress in Business Education. Volume 17. The American Business Education Yearbook, 1960.

Stodola, Quentin, and Kalmer Stordahl. Basic Educational Tests and Measurements. Chicago: Science Research Associates, Inc., 1967.

Stuart, Esta Ross. The Stuart Objective Tests in Typewriting. New York: The Gregg Publishing Company, 1929.

Thompson, James M. Tabulation Typing. New York: Gregg Division of McGraw-Hill Book Company, 1955.

Trump, J. Lloyd, and Delmas F. Miller. Secondary School Curriculum Improvement: Proposals and Procedures. Boston: Allyn and Bacon, Inc., 1968.

Warner, S. Elven. Programmed Production Typewriting. Provo, Utah: Brigham Young University Press, 1969.

West, Leonard J. Acquisition of Typewriting Skills. New York: Pittman Publishing Corporation, 1969.

Woods, Dorothy Adkins. Test Construction: Development and Interpretation of Achievement Tests. Columbus, Ohio: Charles E. Merrill Books, Inc., 1960.

Whalen, Doris H. The Secretary's Handbook. Revised edition. New York: Harcourt Brace Jovanovich, Inc., 1973.

APPENDICES

APPENDIX A

OUTLINES FOR TEST DEVELOPMENT

1. MINIMUM PERFORMANCE STANDARDS BY TASK CATEGORIES

Timed Writings

Level 1

Type straight printed copy of reasonable difficulty for 3 minutes at a speed of 25 wpm with no more than 3 errors.

Level 2

Type straight printed copy of reasonable difficulty for 5 minutes at 40 wpm with no more than 3 errors.

Level 3

Type straight printed or handwritten copy of moderate difficulty for 5 minutes at 40 wpm with no more than 3 errors.

Level 4

Type straight printed or handwritten copy of average difficulty for 5 minutes at 40 wpm with no more than 2 errors.

Letters

Level 1

Arrange and type common letter styles.

Level 2

Produce a mailable letter of average length (no special lines), with one carbon copy and an addressed envelope in no more than 10 minutes.

Level 3

Produce a mailable business letter of average length (no special

lines), with one carbon copy and an addressed envelope from handwritten copy in 10 minutes.

Level 4

Produce a mailable business letter of average length (no special lines), with one carbon copy and an addressed envelope from handwritten copy in 10 minutes.

Tabulation

Level 1

Arrange and type common tabulated reports.

Level 2

Arrange and type common tabulated reports.

Level 3

Plan and type from handwritten copy a table of four columns (6 to 10 letter characters per line), 10 lines per column, in 10 minutes.

Level 4

Plan and type from handwritten copy a table of four columns (6 to 10 letter characters per line), 10 lines per column, in 10 minutes.

Type numbers in tabular or context form at a rate of 100 figures per minute for 3 minutes with no errors.

Manuscript

Level 1

Not tested at this level

Level 2

Produce corrected or error-free manuscript copy of 200 words from plain typewritten copy in no more than 10 minutes.

Level 3

Produce double-spaced, corrected or error free, report copy of approximately 300 words from corrected or handwritten drafts in 13 minutes.

Level 4

Produce double-spaced, corrected or error free, report copy of approximately 300 words from corrected or handwritten draft in 13 minutes.

TABLE XV

2. CURRICULUM GUIDE--STANDARDS BY LEVEL

Level 1	Level 2	Level 3	Level 4
Timed Writing			
1. Printed Copy	1. (Same as 1)	1. Printed or handwritten	1. (Same as 3)
2. Reasonable Difficulty	2. (Same as 1)	2. Moderate Difficulty	2. Average
3. 3 minutes	3. 5 minutes	3. (Same as 2)	3. (Same as 3)
4. 25 wpm	4. 40 wpm	4. (Same as 2)	4. (Same as 3)
5. 3 error limit	5. (Same as 1)	5. (Same as 2)	5. 2 error limit
Letters			
1. Arrange and type common letter styles (include envelope)	1. Mailable Letter 2. Average length 3. Carbon copy 4. Envelope 5. 10 minutes	1. Mailable Business Letter 2. (Same as 2) 3. (Same as 2) 4. (Same as 2) 5. (Same as 2) 6. From handwritten copy	1. (Same as 3) 2. (Same as 3) 3. (Same as 3) 4. (Same as 3) 5. (Same as 3) 6. (Same as 3)
Tabulation			
1. Arrange and type common tabulated reports	1. (Same as 1)	1. 4 columns 2. 6010 characters per line 3. 10 lines per column 4. 10 minutes	1. (Same as 3) 2. (Same as 3) 3. (Same as 3) 4. (Same as 3)

TABLE XV (continued)

Level 1	Level 2	Level 3	Level 4
		5. From handwritten copy	5. (Same as 3) 6. Type numbers in tabular form: a. 100 per minute b. 3 minutes c. No errors 7. Arrange and substitute tabular data in a format of similar data already arranged
Manuscript 1. Not tested at this level	1. Corrected or error free 2. 200 words 3. From plain typewritten paper 4. 10 minutes	1. (Same as 2) 2. 300 words--approximately 3. Corrected or handwritten 4. 13 minutes 5. Double-space	1. (Same as 3) 2. (Same as 3) 3. (Same as 3) 4. (Same as 3) 5. (Same as 3) 6. Insert statistical or display material with suitable reference or identifying footnotes

TABLE XV (continued)

Level 1	Level 2	Level 3	Level 4
Business Forms			
1. Arrange and type common business forms such as a. Interoffice memos b. Postal card	1. (Same as 1)	1. Demonstrate ability to complete a. accurately b. with reasonable rate of speed 2. Various forms such as a. (Same as 1) b. Form Letters c. Telegrams d. Labels e. Invoices f. Purchase Order g. Bill of Lading	1. (Same as 3) 2. (Same as 3) 3. Insert statistical or display materials with suitable reference or identifying footnotes
Non-Typing Activities			
1. Posture	1. (Same as 1)	1. (Same as 2)	1. (Same as 3)
2. Paper Insertion	2. (Same as 1)	2. (Same as 2)	2. (Same as 3)
3. Parts of Typewriter	3. (Same as 1)	3. (Same as 2)	3. (Same as 3)

3. INTERPRETATION OF STANDARDS FOR COMMITTEE REVIEW

Current Date

To: Committee Members

From: Ivey Chance

Thank you for accepting to serve on the special committee for evaluating the procedures I am following in the development of typewriting test materials for our State VOE Curriculum Guide.

The materials enclosed are being used to develop performance tests and objective tests to measure levels 1 through 4 of the minimum performance standards, as stated in the Curriculum Guide. The Course Outline book was the source used in determining specific materials to be included in the tests for each level (example: AMS letter may be required at level 4). Textbooks, researches, and other related literature were analyzed to determine consistencies or inconsistencies in methods of typing letters, tables, and manuscripts.

I need your assistance in judging whether the materials I have developed support accurately each of the minimum performance standards for typewriting, as stated in the Curriculum Guide. Your cooperation will be greatly appreciated.

(Standards by Task were included in the materials sent to the committee.)

Instructions

The materials enclosed in this packet are grouped according to letters, tabulation, and manuscript typewriting. The first page presents the minimum performance standards for Level 1 through 4 for each category (Letters is first). The following page presents examples of information that would be included on the performance test (information not included on this test would be included on the objective tests).

Would you review the materials for accuracy in interpretation for the various performance levels? Answer the following questions as you review the materials:

1. Does the material reflect the specific level accurately?

2. Do the examples accurately represent the specific levels described in the Curriculum Guide?

In order to avoid making your task too laborious, make notes at any point in the material for me to "double check" rather than your having to do so. General comments about the overall material are also welcome.

At the end of this packet is a general outline of other areas that might be included in the total evaluation program for typewriting. Your comments on this material will also be greatly appreciated.

(Standards by Task were included in the materials sent to the committee.)

Performance Tests--Letters

Level 1

Typing of a "personal" note or letter and allowing any acceptable letter and punctuation style. Specific instructions to be given for spacing vertically to different letter parts, body of letter, etc. Letter to be presented in unarranged typewritten copy, with instructions for paragraphing. Approximate: 100 words and si of 1.20. (10 minutes).

Level 2

Typing of a "business" letter, with carbon copy and envelope and using any acceptable letter and punctuation style (no special lines). Letter to be typed from unarranged typewritten copy with paragraphing indicated by (p). Students to assume they are using letterhead paper and envelope with preprinted return address. Approximate: 100 words and si of 1.36. (10 minutes).

Level 3

Typing of "business" letter, with carbon copy and envelope and using any acceptable letter and punctuation style. Letter to be typed from unarranged handwritten copy with paragraphing indicated by (p). Students to assume they are using plain bond paper and plain envelope, necessitating the typing of the return address on letter and envelope. Attention line and Enclosure to be indicated. Approximate: 150 words and si of 1.50. (10 minutes).

Level 4

Typing of "business" letter, with carbon copy and envelope and using any acceptable letter and punctuation style. Letter to be typed from unarranged handwritten copy with paragraphing indicated by (p). Students to assume they are using letterhead paper and envelope with printed return address. Subject line to be indicated--decision to type reference initials and enclosure left to student. Approximate: 150 words and si of 1.60 (10 minutes).

Performance Tests--Tabulation

Level 1

Single column with title to be typed from typewritten copy on full size sheet of paper. Instructions to be given for double spacing, leaving 10 spaces between columns, blocking of all lines with longest line. Ten lines with 6-10 letter characters per column. (10 minutes).

Level 2

Two-column table with title and secondary title, to be typed on full sheet of paper from typewritten copy. Instructions to be given for double spacing, leaving 10 spaces between columns. Ten lines, 6-10 letter characters per column. (10 minutes).

Level 3

Four-column table with title to be typed on full sheet of paper from handwritten copy. Instructions to be given for double spacing, leaving 6 spaces between columns. Ten lines with 6-10 letter characters per column. (10 minutes).

Level 4

Four-column table with title and column headings to be typed on full sheet of paper from handwritten copy. Instructions to be given for double spacing, leaving 6 spaces between columns. Ten lines with 6-10 letter characters per column. (10 minutes).

Four columns of numbers (5 digits--15 lines). All machine adjustments to be made before timing of students begin. No erasing to be allowed and included in instructions. (3 minutes).

Performance Tests--Manuscripts-Reports

Level 1

Not tested at this level.

Level 2

Two-hundred word theme, double spaced, with title as only additional part. To be typed from single-spaced typewritten copy. Make corrections. Margin settings and vertical spacing to be given. (10 minutes).

Level 3

Three-hundred word report, double spaced, with title and subtitles in text. To be typed from single-spaced and corrected typewritten copy. Make corrections. Margin settings and vertical spacing to be given. (13 minutes).

Level 4

Three-hundred word report, double spaced, with title and footnotes (2). To be typed from single-spaced and handwritten copy. Make corrections. Margin settings and vertical spacing not to be given. (13 minutes).

Miscellaneous Information for Test Items

A. Business Forms

Level 1: Interoffice Memorandum
Postal Card

Level 2: Form Letters
Telegrams--various kinds
Labels
Invoice
Purchase Order
Bill of Lading

Level 3: Purchase Requisition
Credit Memorandum
Statement of Account
Voucher

Level 4: Financial Statements
Accounting Reports
Executive Reports
Applications

B. Posture

Level 1: Feet flat and slightly apart
When seated correctly, should have to lean forward slightly
Elbows should be near body
Reading materials should be to the right of the machine
Fingers should be curved over keyboard
Center of typist's body should be in line with "j" key
Wrist should not rest on base of machine

C. Typewriter Parts

Level 1: Keyboard
Space bar
Cylinder
Paper bail rollers
Paper bail and scale
Paper guide
Carriage return lever
Paper release lever
Line-space regulator
Margin set (left and right)
Carriage release lever (left and right)

Variable line spacer
Ratchet release
Margin-release key
Shift key
Tabulator key
Backspace key

D. Paper Insertion

Level 1: Paper should be inserted with left hand
Right hand is used for rolling paper into the machine
Paper guide and paper release lever are needed in operation
Student must know about paper bail to hold paper against roller

E. Punctuation

Level 1: Spacing after period, decimal, abbreviation, semicolon, comma, question mark, colon, exclamation point, dash

F. Word Division

Level 1: Avoid dividing words
Do not divide last word on a page
Do not divide last word on the last full line of a paragraph
Do not divide words on two succeeding lines
Do not divide one-syllable words
Do not divide a word at the past tense
Do not divide a word at a single letter
Do not divide abbreviations, figures, words with apostrophe
Divide words between syllables; use hyphen to indicate break

G. Proofreading

Level 1: Not included at this level.

Level 2:

Add a space #	Paragraph ¶
All caps ≡	Transpose ∿
Capitalize a letter ≡	Underline ___
Close up space ⌒	Align //
Insert word ∧	Delete ⌒
Make letter small / or lc	Spell out ○

4. TEXTBOOK ANALYSIS OUTLINE OF CORRECT METHOD OF TYPEWRITING ITEMS

Letters

Personal Note

A. Description: Typed on half-sheet paper (8 1/2 x 5 1/2 inches). Style should be strict block or Date started at center.

B. Letter Parts:
   1. Date. Typed approximately 1/2 inch from top of page.
   2. Salutation. The word "Dear" may precede name of person being written.
   3. Body of Note. Text, which may be single or double spaced.
   4. Complimentary Close. Typed closing usually omitted.
   5. Signature. May be written or typed, with no particular placement.

C. Minimum Performance Level: Level 1.

Personal Letter

A. Description: Same description as Personal Note except that the letter is typed on a full-size sheet of paper (8 1/2 x 11 inches).

B. Letter Parts:
   1. Return Address. May be included with date. Vertical placement varies among textbooks (2-inch top margin or up to 20 spaces from top).
   2. Body of Letter. Text should be single spaced.
   3. Complimentary Close. Optional whether to type or write or omit altogether.
   4. Signature. Optional whether to type or write.

C. Minimum Performance Level: Level 1.

Business Letter

A. Description: May be a business letter from an individual or from one business to another.

B. Letter Parts:
   1. Date. If typed on plain paper, may include return address (beginning 2 lines above date line).
   2. Inside Address. City, State, ZIP on same line, with 1 or 2 spaces following ZIP.

3. Attention Line. Left margin or centered. Capitalize principle words. Underline partly or entirely and/or all caps.
4. Salutation. Dear Sir, Gentlemen, etc.
5. Body of Letter. Single spaced.
6. Complimentary Close. Yours truly, Sincerely yours, etc.
7. Typed Name, and/or Title. Two lines (if necessary), single spaced and blocked under Complimentary Close.
8. Reference Initials. Originator's and/or typist's, both in all caps or typist's initials in lower case. Separate two initials by diagonal or colon.
9. Enclosure Notation. Spelled or abbreviated, followed by a colon, dash, or blank space. Precede/Follow by number or list of enclosures or typed without number or item description.
10. Carbon Copy. Usually typed "cc" or "CC" or spelled out--most any format denoting copies is acceptable.
11. Postscript. "PS" followed by colon, period, dash, or omitted. Information is typed 2 spaces down from previous letter part.

C. Vertical Placement:
   1. Top of page to Date line varies among textbooks. Two-inch top margin, 2 spaces below Letterhead, 15 spaces from top, 12 to 20 spaces from top.
   2. Date line to Inside Address. Varies among textbooks--4 or 5 spaces down from Date line.
   3. Double space after paragraphs in Body of Letter.
   4. Space down 4 times after Complimentary Close to Typed Name or Title.
   5. Single or double space after parts starting with Typed Name or Title (exception: see "PS").

D. Horizontal Placement:
   1. Varies among textbooks, therefore, maintain approximate equal left and right margin.
   2. Date line (See B-1 above), Complimentary Close line, and Typed Name or Title line may be typed (1) flushed with left margin, (2) started at center of page, or (3) blocked off right margin (See C-1 above).
   3. Paragraphs may be indented or typed flush with left margin (should be typed flushed with left margin when all other letter parts are typed in this manner).

E. Punctuation Style--Options:
   1. Colon after Salutation and comma after Complimentary Close.
   2. No punctuation after these letter parts.
   3. Same as (1) plus commas after each line of address and closing and period after last line of these parts.

F. Additional Letter Styles and Formats:
   1. Indented Style. Inside Address and Closing are indented (each line) 5 or more spaces from previous line. First line of closing begins at center.
   2. Inverted Style. All lines of each paragraph are indented 5 spaces except the first line. Date and Closing begin at the center.
   3. AMS (Simplified). Omit Salutation and Closing. Include Subject line, with 2 blank lines before and after. Strict blocked letter and no punctuation after Salutation and Closing.
   4. Executive Style. Paper size is unique characteristic (7 1/4 x 10 1/2 inches).
   5. Second Page Heading. Plain bond paper. Typed on lines 7, 8, and 9 or placed horizontally on line 7 across page. Parts: (1) Name of Addressee, (2) "Page 2," (3) Date.
   6. Military Date. Example: 28 November 1933.
   7. Blind Copy Notation. Typed on carbon copy only. Followed by colon, lower case, etc. Almost any format acceptable. One inch from top and against left margin or 2 spaces below last typed line.

G. Minimum Performance Level:
   1. Level 1--Business Letter not included at Level 1.
   2. Level 2--B-1 through B-11; C; D; E-1 and E-2.
   3. E-3; F.

Envelope

A. Kinds:
   1. Standard Size. 6 1/2 x 3 5/8 inches (No. 6).
   2. Long Size. 9 1/2 x 4 1/2 inches (No. 10).

B. Placement of Address:
   1. Return Address. 1/2 inch from left edge. Three spaces down from top. Single space.
   2. Address. (1) Small--2-2 1/2 inches from left edge and 2 inches from top, (2) Large--4 inches from left edge and 14-18 spaces from top. Single space.

*C. Special Notations:
   1. On Arrival Directions. Hold, Attention, etc. Line 9 or triple space below Return Address. Typed in all caps or capitalize each important word and underlined.

---

*Special Notations are discussed in Curriculum Guide book with envelopes only.

2. Special Mailing Notation. Airmail, Special Delivery, etc. Line 9 or 10 or 3 spaces above Address, under stamp. Typed in all caps.

D. Minimum Performance Level: Level 2.

Tabulation

A. Format, Parts, Special Symbols:
   1. Title. Main heading. Typed in all caps. Leave 2 blank lines after, unless subtitle is included--then, leave 1 blank line after.
   2. Subtitle. Secondary or subheading. Capitalize each important word. One blank line before and 2 after.
   3. Column Headings. Blocked or centered over columns. Underline. Leave 1 blank line after.
   4. Ruled and Boxed Headings. Use typewriter, pencil, pen. (Single space before and double space after when drawing with the typewriter).
   5. Footnotes. (Source, etc.). Usually preceded by asterisk. Space down 3 times from last line of text. Divider line is 1 blank line after text and 2 before footnote-- 1 1/2 to 2 inches long.
   6. Multi-line Headings. Both in title and in column heads. Single spaced.
   7. Braced Headings. Underlined if not ruled. Capitalize first and each important word.
   8. Dollar Sign. Typed on first line and total line and must be in alignment. One space left of longest line or first line (regardless of length of other lines).
   9. Percent Sign. Textbooks vary greatly. Repeat on every line and/or only in column heading.
   10. Total Line. All caps or capitalize. Blocked or indented (no special indention).

B. Horizontal Centering:
   1. Even number of spaces left between columns--4, 6, 8, 10 or more. Six spaces is most common though size of problem may determine spaces to be left between columns.

C. Minimum Performance Level:
   1. Level 1--Two columns at most with A-1 only.
   2. Level 2--Two columns; A-1 and A-2.
   3. Level 3--Four columns; A-1 through A-5; A-8 through A-10.
   4. Level 4--Four columns; A-6 through A-7.

Manuscripts-Reports

A. Description: Many different kinds of materials (reports, outlines, etc.) called manuscript typewriting.

B. Outline:
   1. Title may be in all caps followed by 2 blank lines--may be underlined.
   2. Steps are indented 4 spaces (2 spaces after each identifying number or letter).
   3. Spacing before and after subheadings varies from 1 blank line before and after to 2 before and 1 after.
   4. Use Roman numerals, arabic numbers, and letters for identifying breakdowns (Roman numerals are usually first breakdown indicators).
   5. Horizontal centering. Center longest line or use set margin.

C. Report--Term Paper, Documented Report, Etc.:
   1. Title Page. Title of report, name of author, date, etc. Varies greatly among textbooks on content and placement in relation to type of report.
   2. Subtitle. Capitalize first word and each important word. One blank line before and 2 after.
   3. Body. Single or double spaced, according to type of manuscript (report vs. term paper).
   4. Table of Contents. Includes main divisions, page numbers, and the typing of leaders. Varies greatly in method of typing--according to kind of report.
   5. Footnotes. Test agree on following:
      a. single space after text to divider line
      b. 1 1/2 to 2 inch divider line
      c. double space to footnote
      d. single space footnotes
      e. double space between entries
      f. put article titles within quotation marks
      g. underscore book titles
      h. indent footnotes (first line)--consistency important
      i. number--raised approximately 1/2 space
      j. should include author, publisher, city, year, page/s
   6. Bibliography.
      a. title in all caps (may be spread centered)
      b. 5 or 10 space indention (inverted style)
      c. follow same rules for footnotes above in f, g, and j
   7. Pagination. Top of page in area of right margin or bottom of page, centered 1/2 inch from bottom. Consistency is important--for example: "page" may be used. Page number on first page of each chapter omitted or typed at bottom.

8. Margins.
   a. top--2 to 2 1/2 inches first page to 1 to 1/2 inches other pages in each chapter; 1/4 to 1/2 inches added for binding.
   b. sides--1 inch, 60 space line (pica), 70 space line (elite); 1/4 to 1/2 inch added for binding on left.
   c. bottom--1 to 1 1/2 inches; page numbering does not effect setting at bottom

D. Minimum Performance Level:
   1. Level 1--Manuscript not included at Level 1.
   2. Level 2--Outlines are presented at this level in rough form. Sections of manuscript typing are presented separately i.e., Title Page, Table of Contents, Footnotes, Bibliography (these are not put together into one project before Level 3).
   3. Level 3--All of C section may be brought together for a typing project at this level and at Level 4.

TABLE XVI

5. OUTLINE FOR TEST CONSTRUCTION AND EVALUATION

Level 1	Level 2	Level 3	Level 4
	TIMED WRITINGS		
Speed			
1. 25 words per minute	1. 40 words per minute		
Errors			
1. 3 errors limit			1. 2 errors limit
Duration			
1. 3 minutes	1. 5 minutes		
Syllabic Intensity			
1. 1.00-1.15	1. 1.15-1.25	1. 1.25-1.35	1. 1.35-1.45
	LETTERS		
Personal Note			
1. Parts: a. Date--type approximately one inch from top of page b. Salutation--starts with "Dear" followed by name of person to whom letter is addressed c. Body--double or single space			

TABLE XVI (continued)

Level 1	Level 2	Level 3	Level 4

d. Complimentary close--usually omitted--closing varies greatly (personal)
e. Signature--written or typed

2. Placement:
   a. Horizontal--varies (one inch is most common)
   b. Vertical--typed on "half sheet" (8 1/2 x 5 1/2 inches)

Personal Letter

1. Parts (same as personal note with the following exceptions):
   a. Return address--includes the date--single spaced--address of writer on two lines--begins approximately two inches from top of paper
   b. Body--single spaced

2. Placement:
   a. Horizontal--varies according to size of letter
   b. Vertical--typed on "full sheet" (8 1/2 x 11 inches)

Business Letter

1. Parts (in order of arrangement):
   a. Date--on letterhead paper (could be plain paper if personal business letter)
   b. Inside Address--City, State, ZIP on same line (1 or 2 spaces after State to ZIP)
   c. Attention Line--left margin or centered--(1) capitalize principle words, (2) entirely or partly underline and/or all caps

TABLE XVI (continued)

Level 1	Level 2	Level 3	Level 4

d. Salutation--Dear Sir, Gentlemen, etc.
e. Subject Line--same as (c)--followed by colon(:) or dash (--)
f. Body--single spaced
g. Complimentary Close--Sincerely, Respectfully, Very truly yours, etc.
h. Typed Name and/or Title--two lines (single spaced), if necessary--put title one space below name and blocked with name
i. Reference Initials--originator's and/or typist's--both initials in all caps or initials of typist in lower case--separate two initials by diagonal (/) or colon (:)
j. Enclosure--spelled or abbreviated, followed by colon, etc.--preceed/follow by number or list of enclosures
k. Carbon Copy--usually typed "cc" in lower case or all caps--spelled out "copy to" etc., any format denoting copies are made
l. Postscript--omit "ps" title, follow by colon, etc., any format--leave one blank line between "ps" and previous line of typing
m. Military date style--Ex., 28 November 1973
n. Blind Copy Notation--followed by colon, lower case, etc., any format--either one inch (1") from top against left margin or two spaces below last typed line

2. Placement--Vertical (variations as follows):
a. top of page to date line (balanced look)
b. date line to inside address (balanced look)
c. typed name and remaining parts vary from no space to one space between
d. three blank spaces after complimentary close to typed name

TABLE XVI (continued)

Level 1	Level 2	Level 3	Level 4
	3. Placement--Horizontal: a. margin stops placed to maintain approximately equal left and right margins b. return address and/or date line and complimentary close line and typed name and/or title line/s typed flushed with left margin, started at center of paper, or backed off right margin--date line varies according to letterhead when letterhead is unique in placement c. paragraphs indented or typed flushed with left margin (must be flushed with left margin if date line, complimentary close line, and typed name and/or title line/s are typed flushed with left margin to maintain consistency)		
	4. Punctuation Options: a. colon after salutation, comma after complimentary close b. no punctuation after these letter parts (this style followed if all letter parts are typed flushed with left margin)		
		5. Additional styles and formats: a. Indented Letter--style presented in only one textbook--inside address and closing are indented (each line) five or more spaces in from above line--first line of closing begins at paper center b. Inverted Style--date and closing begin at center--paragraphs are indented five spaces after first line, which is typed against left margin--with/without punctuation	

TABLE XVI (continued)

Level 1	Level 2	Level 3	Level 4
			c. AMS (Simplified) Letter--omit salutation and closing--subject line included (two blank lines before and after)--all other lines begin at the left margin
			d. Quotation in Letters--no standard method--single spaced with "indented" placement
			e. Executive Style--paper size is 7 1/2 x 10 1/2 inches--placement for horizontal and vertical "balance"
			f. Second Page Heading--one inch top margin--typed on lines 7, 8, 9 or placed horizontally--contents, in order: (1) Name of addressee, (2) "Page" 2, (3) Date--Plain bond paper
	Envelopes		
		1. Kinds:	
			a. Standard size--6 1/2 x 3 5/8 inches (No. 6)
			b. Large size--9 1/2 x 4 1/2 inches (No. 10)
		2. Placement of Address:	
			a. Return Address--1/2 inch from left edge of envelope--single spaced--begin on line 3 from the top of the envelope
			b. Address--(1) small: 2-2 1/2 inches from left edge of envelope--2 inches from top--single spaced, (2) large: 4 inches from left edge of envelope--14-18 spaces from top--single spaced--city, state, ZIP on same line (ZIP preceded by one or two spaces)

TABLE XVI (continued)

Level 1	Level 2	Level 3	Level 4
	3. Special Notations:		
	a. On Arrival Directions ("Hold," "Attention," etc.)--line 9 or triple space below return address--typed in all caps or capitalize each word and underline		
	b. Special Mailing Notations (AIRMAIL, etc.)--line 9 or 10 or 3 spaces above address under stamp--typed in all caps		
	TABULATION		
Centering			
1. Sample tabulation--one or two columns		1. Methods--Backspace and Mathematical	
		a. Vertical placement	
		b. Horizontal placement	
		c. Centering Column Headings	
		d. Ruled and boxed tabulation	
Parts			
1. Title (Main Heading): typed in all caps centered horizontally--leave two blank lines after except as in case of (c) below			
2. Body: single or double spaced--leave 4, 6, 8, 10 or more spaces between columns (usually 6)			
	3. Subtitle (secondary heading): capitalize each important word--one blank line before and two after		

TABLE XVI (continued)

Level 1	Level 2	Level 3	Level 4
		4. Column Headings: blocked or centered over columns--underlined, with one blank line between column head and first line of column	
		5. Ruled and Boxed Headings: use typewriter, pencil, pen, etc.	
		6. Footnotes: precedes (one or two spaces)--space down three times from text	
			7. Multi-line Headings
			8. Braced Headings
			9. Center on varied sized paper

MANUSCRIPT

Description

1. Many different kinds of materials are called manuscript typing; therefore, problems at the first two levels should be presented in exact replica (corrected rough copy if specific instructions given) of the expected outcome--very simple-to-type material; student is learning to type these items without being responsible for knowing the "rules" involved

TABLE XVI (continued)

Level 1	Level 2	Level 3	Level 4

2. Outlines: vertical and horizontal centering--only agreement among texts is (1) title is in all caps followed by two blank lines and may be underlined (2) steps are indented four spaces (two after each identifying number or letter--other considerations: (1) spacing before and after subheadings vary from one blank line before and after to two before and one after (2) use of Roman Numerals, Arabic numbers, and letters for identifying breakdowns varies greatly among different texts though Roman Numerals are usually first breakdown (3) there is no agreement on horizontal centering--backspace center longest line or use a set margin (1 inch, 2 inches, etc.)

3. Bound at the left: means a 1 1/2 inch margin vs. 1 inch margin

4. Title Page: title of report, name of author, date, etc.--varies because of content (information required)

5. Table of Contents: main divisions, page numbers, leaders

6. Footnotes: divider line varies from 1 1/2 to 2 inches in length

7. Bibliography: inverted form--indent all lines after the first line of each entry

8. Parts:
   a. Subtitle--capitalize each important word--center horizontally over line of writing--one blank line before and two after--single space if two lines are needed

TABLE XVI (continued)

Level 1	Level 2	Level 3	Level 4
		b. Body--single or double spaced, according to type of manuscript (reports vs. term paper)	
		c. Pagination--at top of page in area of right margin or bottom of page, centered 1/2 inch from bottom--consistency is important (example: the word "page" may be used)--pages that begin a new division (chapter, etc.) are counted but not numbered unless pagination is placed at the bottom of page	
		d. Footnotes--texts agree on following:	
		(1) single space after text	
		(2) 1 1/2 - 2 inch divider line	
		(3) double space to footnote	
		(4) single space footnotes	
		(5) double space between entries	
		(6) article titles in quotes	
		(7) underscore book titles	
		(8) indent footnotes (first line)--consistency	
		(9) number--raised number	
		(10) footnote includes author/s, publisher, city, year, page/s	
		e. Bibliography--texts agree on following:	
		(1) title in all caps (may spread)	
		(2) five or ten space indention after first line of each entry (inverted style)	

TABLE XVI (continued)

Level 1	Level 2	Level 3	Level 4
		(3) follow same rules as footnotes in (6), (7), and (10)	

MISCELLANEOUS

Posture

1. Students should know the following information:
   a. Feet flat and slightly apart
   b. When seated correctly, lean forward slightly
   c. Elbows near body--not spread out from body or tight against body
   d. Reading materials to the right of the machine
   e. Fingers curved over keyboard
   f. Wrist should not rest on base of machine

2. Knowledge of the techniques are extremely important at levels (1) and (2) to insure success at levels (3) and (4)

Paper Insertion

1. Student should know the following information:
   a. Paper inserted with left hand
   b. Right hand used for rolling paper into the machine
   c. Paper guide and paper release lever needed in operation--paper guide allows student to insert paper into the machine straight--paper release lever allows student to straighten paper after insertion, if necessary
   d. Paper Bail holds paper against roller

TABLE XVI (continued)

Level 1	Level 2	Level 3	Level 4

2. Knowledge of this information is extremely important at Level (1) in order to insure success at levels (2), (3), and (4)

Typewriter Parts

1. Students should know the various typewriter parts:
   a. Keyboard--have students identify keys controlled by each finger (letters, numbers, symbols)
   b. Space bar--controlled by right hand
   c. Cylinder--also known as platen
   d. Paper bail rollers--holds paper against cylinder
   e. Paper bail and scale--keeps paper against cylinder (platen)--scale is aligned with scale on base of machine
   f. Paper guide--guides paper into machine
   g. Carriage return lever--controlled by left hand--spaces down (manual vs. electric)
   h. Paper release lever--used to adjust paper (straighten) and to remove paper from machine
   i. Line-space regulator--sets machine for single, double, and/or 1 1/2 triple spacing
   j. Margin set (left and right)--insures uniform horizontal spacing (typing)
   k. Carriage release lever (left and right)--releases cylinder, allows carriage to move freely from left to right (vice versa) without spacing with space bar and carriage return lever
   l. Variable line spacer--allows cylinder (platen) to move freely, vertically
   m. Ratchet release--allows cylinder (platen) to move freely, vertically--when reset, returns to original line setting--sometimes known as line finder
   n. Margin release--allows for typing through margin set
   o. Shift key--allows you to type in upper case--capitalizing, all caps--left and right
   p. Tabulator key--allows you to slide over to preset points--column typing, etc.
   q. Back space key--

TABLE XVI (continued)

Level 1	Level 2	Level 3	Level 4

2. Knowledge of typewriter parts is important at levels (1) and (2) in order to insure success at levels (3) and (4)

Business Forms

1. Description:
   a. Interoffice Memorandum--(1) parts of heading vary in placement--to, from, subject, date (2) usually typed on half sheet paper (3) usually single spaced with a blank line between paragraphs
   b. Post Card--(1) single spaced address and body (2) date on line 3--blocked or started at center (3) left and right margins--four to six spaces in from edge (4) start address two inches from top and two inches from left edge (5) start return address on line 2 or 3, 2-6 spaces from left edge (6) wide variation among text in typing closing--placement should line with date
   c. Form Letters
   d. Telegrams--various kinds
   e. Labels
   f. Invoice
   g. Purchase Order
   h. Bill of Lading
   i. Purchase Requisition
   j. Credit Memorandum
   k. Statement of Account
   l. Voucher Checks
   m. Financial Statements
   n. Accounting Reports
   o. Executive Reports
   p. Applications

TABLE XVI (continued)

Level 1	Level 2	Level 3	Level 4

2. Performance testing standards do not call for the typing of forms listed at levels (2), (3), and (4)

Punctuation

1. Space once after (;) used as a mark of punctuation

2. Space once after (.) used at the end of an abbreviation; twice after (.) at the end of a sentence; do not space after when used as a decimal

3. Space once after (,) used in a sentence; do not space after (,) when separating numbers (1,000)

4. Space twice after (?) used at the end of a sentence; space once after (?) used within a sentence

5. Do not space after a (:) used to separate hours and minutes in stating time; space twice after (:) in other uses

6. Type the dash with two hyphens (--) without spacing either before or after

7. Space once after (!) used within a sentence; space twice after (!) in other uses

8. Return carriage without spacing after 1-7 above when these symbols are the last stroke in the line

TABLE XVI (continued)

Level 1	Level 2	Level 3	Level 4

Word Division

1. Basic Rules:
   a. Avoid dividing words
   b. Do not divide last word on a page
   c. Do not divide last word on the last full line of a paragraph
   d. Do not divide words on two succeeding lines
   e. Do not divide one-syllable words
   f. Do not divide a word at the past tense
   g. Do not divide a word at a single letter
   h. Do not divide abbreviations, figures, words containing an apostrophe
   i. If necessary to divide words, divide between syllables; use hyphen (-) to indicate break

2. Material at levels (1) and (2) is nearly exact copy of expected outcome of product; word division should not be evaluated until levels (3) and (4)

Proofreading

1. Basic Proofers Marks:
   a. Add a space #
   b. All caps ≡
   c. Capitalize a letter ≡
   d. Close up space ⌒
   e. Insert word ^
   f. Make letter small / or lc
   g. Paragraph ¶

TABLE XVI (continued)

Level 1	Level 2	Level 3	Level 4
	h. Transpose		
	i. Underline (underscore)		
	j. Align		
	k. Delete		
	l. Spell out		

Other

1. Spaces per inch--vertical, horizontal (pica, elite)

2. Spacing--leaving blank lines vs. not, and also when

3. Standard size paper (8 1/2 x 11 inches)

4. Underscoring, ALL CAPS, typing over

5. Throwing carriage

6. Figuring tabulation set up

APPENDIX B

OBJECTIVE TESTS

1. INSTRUCTIONS TO TEACHERS

To Cooperating Teachers:

Thank you for assisting me in my research study at The University of Tennessee by offering to administer the typewriting objective tests to your classes.

Two objective tests and two answer sheets are included in the material. The tests are arranged alternately and should be passed among your students in that order. Since the answer sheets are attached to the tests, the correct color will be attached to the appropriate test.

Would you assist the student in completing the information at the top of the page of the answer sheet? The information needed is (1) Name, (2) School Name, and (3) Amount of Previous Typing Instruction. An example of (3) might be the following for a college student:

High School (1)(2) 3 4 Sem. College (1)(2) 3 4 5 (Sem.)/Qtrs.

The circles indicate the student had two semesters of typewriting (1 year) in high school and has completed or is enrolled in the second semester of college typewriting.

Please return the tests and answer sheets. Final revision of tests will be available to Tennessee teachers.

Sincerely,

Ivey Chance

2. FORM A

(With Discrimination and Difficulty Indexes)

1. Which of the following letter parts of the "personal letter" (or "note") may be typed starting at the center of the page?

   a. Date and body
   b. Date and salutation
   c. Date and complimentary close
   d. Date and enclosure

   Dc = .22 Df = .14

2. When the comma is placed at the end of the complimentary close of a "personal letter" or "personal note," it is also placed at the end of the

   a. date
   b. salutation
   c. body
   d. typed name

   Dc = .19 Df = .10

3. Which of the following statements is true about paragraph indention in letters?

   a. None of the following. . . .
   b. Paragraphs may be indented with any letter style.
   c. Paragraphs may be typed flushed with the left margin with any letter style.
   d. Paragraphs must be typed flushed with the left margin with certain letter styles.

   Dc = .16 Df = .34

4. If it is necessary to divide words,

   a. all of the following. . . .
   b. do not divide the last word on a page.
   c. use the hyphen (-) to indicate the break.
   d. do not divide one-syllabel words.

   Dc = .19 Df = .25

5. The correct method of typing the <u>title</u> of a table is to type it

   a. in all caps.
   b. in underlined form, capitalizing each important word.
   c. in all caps <u>or</u> in underlined form.
   d. within quotation marks, capitalizing each important word.

   Dc = .16 Df = .44

6. The date line of the "personal note" should be typed approximately

   a. one inch from the top of the paper.
   b. two inches from the top of the paper.
   c. three inches from the top of the paper.
   d. six inches from the top of the paper.
   Omit

7. When it is used within a sentence, how many times do you space after the semicolon (;)?

   a. None
   b. Once
   c. Twice
   d. No certain rule
   Dc = .21 Df = .15

8. The number of spaces that should follow a period at the end of a sentence is

   a. none
   b. one
   c. two
   d. three
   Dc = .15 Df = .07

9. The number of spaces between a whole number and a made fraction that is not on the keyboard is

   a. one.
   b. two.
   c. three.
   d. no spaces are left.
   Dc = .39 Df = .33

10. Which of the following punctuation rules is correct?

   a. Space once after the exclamation point (!) used within a sentence.
   b. Space once after a colon (:) used to separate hours and minutes.
   c. Space once between two question marks (?) used at the end of a sentence.
   d. Space once after the dash (--) in a sentence.
   Dc = .12 Df = .54

11. Which of the following responses has correct spacing?

   a. 5 %
   b. " Please shut the door, " he yelled.
   c. $ 5
   d. G. A. Wagoner
   Dc = .10 Df = .07

12. The correct posture at the typewriter is:

a. All of the following. . . .
b. Feet flat on the floor.
c. Lean forward slightly.
d. Elbows near the body.

Dc = .27 Df = .19

13. To straighten paper after inserting it into the typewriter requires primarily the use of the

a. paper bail.
b. space bar.
c. paper-release lever.
d. carriage-release lever.

Omit

14. Which of the following operations is <u>not</u> controlled by the right hand?

Omit

15. To type a letter or number in the left margin, use the

a. margin set.
b. line-space regulator.
c. margin-release key.
d. ratchet-release lever.

Dc = .25 Df = .19

16. Another name for the typewriter cylinder is

a. bail.
b. paper roller.
c. roll pin.
d. platen.

Dc = .19 Df = .40

17. To write several words in all caps, depress the

a. all of the following. . . .
b. left shift key.
c. right shift key.
d. shift-lock key.

Omit

18. There are how many vertical spaces to an inch?

a. 6
b. 9
c. 10
d. 12

Dc = .36 Df = .21

19. The typewriter device that frees the typewriter from spacing vertically one space at a time, allowing free vertical placement is called the

a. variable-line spacer.
b. ratchet-release lever.
c. tabulator key.
d. carriage release device.

Dc = .25 Df = .59

20. The typewriter part used to establish the left edge of the writing line is the

a. shift key, left.
b. cylinder knob.
c. margin set, left.
d. paper guide.
Dc = .24 Df = .24

21. The return address of a "personal letter" should include the

a. name and address of the writer.
b. address of the writer.
c. address of the writer and the date.
d. name and address of the person to whom the letter is written.
Dc = .20 Df = .56

22. If you want to single space a paragraph, you

a. put one blank space between words.
b. put one blank space between lines.
c. leave no blank spaces between lines.
d. indent five spaces.
Dc = .25 Df = .25

23. The standard size sheet of typewriting paper measures 8 1/2 by

a. 5 1/2 inches.
b. 10 inches.
c. 11 inches.
d. 14 inches.
Dc = .18 Df = .13

24. The number of horizontal spaces to an inch on the "elite" typewriter is

a. six.
b. eight.
c. ten.
d. twelve.
Dc = .34 Df = .22

25. If two (2) punctuation marks occur together at the end of a sentence, the number of spaces left between them should be

a. none.
b. one.
c. two.
d. it really doesn't matter.
Dc = .31 Df = .31

26. When the typewriter bell rings, the typist should

a. throw the carriage at once.
b. finish the word being written or divide the word.
c. finish the word being written.
d. write as much more as is possible before the carriage locks.
Dc = .19 Df = .16

27. To type the fraction "three-fourths,"

a. shifting is not necessary.
b. use the right shift key.
c. use the left shift key.
d. lock the shift key to save time.
Dc = .27 Df = .27

28. If the paragraphs of a "personal note" are to be single spaced, you

a. single space between paragraphs.
b. double space between paragraphs.
c. indent each paragraph.
d. have two blank lines between paragraphs.
Dc = .36 Df = .22

29. How many horizontal spaces are there to an inch on the "pica" typewriter?

a. 6
b. 8
c. 10
d. 12
Dc = .42 Df = .25

30. The little fingers of both hands rest on which homerow keys?

a. (a) and (;)
b. (f) and (;)
c. (a) and (j)
d. (g) and (j)
Omit

31. The typewriter part which holds the paper firmly against the cylinder is the

a. paper bail and scale.
b. paper bail rollers.
c. paper table.
d. line space regulator.
Dc = .24 Df = .42

32. The typewriter part used in removing or in straightening a sheet of paper is the

a. carriage-release lever.
b. line-space regulator.
c. cylinder knob, right.
d. paper-release lever.
Dc = .13 Df = .07

33. If you had a typewriter with pica type and a column which was one inch wide, which of the following words would fill the column?

a. Keyboard
b. Horizontally
c. Papers
d. Typewriter
Dc = .58 Df = .32

34. When typing and abbreviating the word "October" within a sentence, you would

a. not space after the period.
b. space once after the period.
c. space twice after the period.
d. space once before the period.
Dc = .12 Df = .10

35. When typing a sentence containing a semicolon, you should have

a. one blank space before the semicolon.
b. two blank spaces after the semicolon.
c. one blank space after the semicolon.
d. no blank space after the semicolon.
Dc = .21 Df = .19

36. The address of a postal card should begin approximately how far from the top edge of the card?

a. Three spaces
b. One inch
c. Two inches
d. Four inches
Dc = .36 Df = .48

37. How many times would you backspace in order to center horizontally a line 25 spaces wide?

a. None of the following. . . .
b. 12
c. 13
d. 25
Dc = .19 Df = .19

38. Which of the following typewritten devices are needed in the operation of inserting paper into the machine?

a. Ratchet-release lever
b. Space bar
c. Paper guide
d. Paper-release lever
Omit

39. The typewriter device that allows quick movement to preset points without having to use the space bar is called the

a. ratchet-release lever.
b. carriage return lever.
c. tabulator key.
d. backspace key.
Dc = .21 Df = .12

40. Which of the following is the correct method of typing the dash?

a. To be moved--maybe now
b. To be moved -- maybe now
c. To be moved - maybe now
d. To be moved-maybe now
Dc = .46 Df = .40

41. The name of the writer of a business letter should be typed

    a. a triple space below the company name.
    b. a double space below the complimentary close.
    c. a single or double space above the reference initials.
    d. in all capitals.
    Dc = .37 Df = .54

42. The "reference initials" would be placed against the left margin

    a. three spaces below the body of the letter.
    b. three spaces below the company name.
    c. two spaces above the typed name.
    d. one or two spaces below the typed name.
    Dc = .31 Df = .17

43. When typing the "complimentary close" of a business letter,

    a. the first and each important word is capitalized.
    b. a comma should always follow.
    c. it is typed in all capital letters.
    d. each important word is capitalized.
    Dc = .43 Df = .49

44. When the "typed name" and "title" are included in the business letter

    a. both are always put on the same line, separated by a comma.
    b. the title is always put on a separate line.
    c. the title is put on a separate line if the name and title together are long.
    d. the title is omitted when the name and title together are long.
    Dc = .72 Df = .40

45. The "attention line" in a business letter is placed

    a. between the salutation and body of the letter.
    b. between the date and inside address.
    c. two spaces below the mailing notation.
    d. two spaces below the inside address.
    Dc = .58 Df = .46

46. With the exception of the AMS letter, the "subject line" of the business letter is placed between the

    a. salutation and body.
    b. letterhead and date.
    c. attention line and salutation.
    d. inside address and the attention line.

    Dc = .67 Df = .44

47. Should a letter contain "carbon copy," "enclosure," and a "postscript," in which order would they occur?

a. Postscript, carbon copy, then enclosure
b. Enclosure, carbon copy, then postscript
c. Carbon copy, enclosure, then postscript
d. Enclosure, postscript, then carbon copy
Dc = .24 Df = .57

48. In typing the business letter, you sometimes put a colon (:) after the salutation and a comma after the

a. date.
b. body.
c. complimentary close.
d. typed name.
Dc = .16 Df = .08

49. When placing the date of a letter to begin at the center of the paper, what other two (2) letter parts should also begin at the center?

a. Attention line and subject line
b. Enclosure and carbon copy notations
c. Special mailing notation and postscript
d. Complimentary close and typed name
Dc = .19 Df = .10

50. The "Simplified" business letter or "AMS" business letter omits two of the basic parts of the regular business letter. Which two (2) are they?

a. Salutation and complimentary close
b. Attention line and subject line
c. Inside address and reference initials
d. Salutation and typed name
Dc = .70 Df = .46

51. In typing tables, subtitles (subheadings) are typed with

a. two blank lines before and after.
b. two blank lines before and one after.
c. one blank line before and one after.
d. none of the above.
Dc = .15 Df = .57

52. The date in the heading of a business letter should be typed

a. Nov. 28, 1973
b. November 28, 1973
c. 11/28/73
d. it really does not matter.
Dc = .16 Df = .16

53. The "subject line" of a letter naturally seems to be a part of the

a. body.
b. inside address.
c. salutation.
d. heading.
Dc = .40 Df = .46

54. The "attention line" of a business letter is really a part of the

a. heading of the letter.
b. closing of the letter.
c. salutation of the letter.
d. address of the letter.
Dc = .16 Df = .66

55. The "inside address" of a business letter would include at least the

a. name and address of the writer.
b. name and address of the person or firm being written.
c. address of the writer.
d. address of the person or firm being written.
Dc = .34 Df = .28

56. Though "special mailing" notations vary in placement, they are generally typed on the business letter between the

a. letterhead and date.
b. date and inside address.
c. typed name and reference initials.
d. salutation and subject line.
Dc = .58 Df = .41

57. Which of the items below is not a correct completion of the following sentence: In the typing of business letters, leave one blank line between the

a. salutation and body.
b. paragraphs within the body of the letter.
c. body and complimentary close.
d. complimentary close and typed name.
Dc = .51 Df = .37

58. Which of the following letter parts is included in every AMS Simplified business letter?

a. Attention line
b. Subject line
c. Carbon copy notation
d. Postscript
Dc = .60 Df = .54

59. The subtitle (subhead) in a table is typed by capitalizing

a. all letters (all caps).
b. the first letter of each important word.
c. the first letter of each word.
d. only the first word, then ending title with a period.
Dc = .43 Df = .31

60. Column headings in tables should be typed

a. in all capitals.
b. underlined.
c. a single space above first item in the column.
d. four spaces after the title.
Dc = .51 Df = .28

61. How many blank spaces do you leave between the title (main heading) and subtitle (secondary heading) of a table?

a. Either of the following
b. None
c. One
d. Two
Dc = .54 Df = .55

62. The return address on an envelope should be

a. either of the following.
b. single spaced.
c. double spaced.
d. indented.
Dc = .16 Df = .13

63. The address of an envelope should be

a. single spaced when more than 3 lines are needed.
b. single spaced when more than 4 lines are needed.
c. single spaced, regardless of the number of lines needed.
d. double spaced, regardless of the number of lines needed.
Omit

64. Special mailing information (Registered Mail, etc.), when typed on the envelope, is placed

a. in the lower left corner.
b. in the last line of the address.
c. below the return address.
d. below the stamp.
Dc = .37 Df = .43

65. Instructions, such as "Hold for Arrival," are typed on the envelope

a. below the return address, several spaces down.
b. several spaces up from bottom left corner.
c. below the stamp several spaces.
d. as a part of the address.
Omit

66. Which of the following statements is true in reference to the address on the envelope?

a. Either of the following, according to the number of lines in the address:
b. City on one line, State and ZIP on next line
c. City and state on one line, ZIP on next line
d. City, state, and ZIP on same line
Dc = .28 Df = .25

67. A manuscript that is to be bound at the left means the margin should be

a. 1/2 inch wide.
b. 1 inch wide.
c. 1 1/2 inches wide.
d. 2 inches wide.
Dc = .42 Df = .30

68. The abbreviation for "feet" is

a. (#).
b. (").
c. (x).
d. (').
Dc = .22 Df = .17

69. If the typewriter does not have a key for the symbol "degree," which key is used?

a. Either of the following:
b. Lower case of the letter "o"
c. Upper case of the letter "O"
d. The digit "zero"
Dc = .43 Df = .23

70. The abbreviation for "seconds" is

a. (#).
b. (').
c. (").
d. (.).
Dc = .25 Df = .65

71. Which of the following items represent an expression of dimensions?

a. (
b. /
c. x
d. :
Dc = .33 Df = .40

72. The "weight" of paper is expressed by the symbol

a. all of the following: c. No.
b. (#). d. Wt.
Dc = .11 Df = .81

73. When a special key is not available on the typewriter, the addition sign is made by combining which of the following:

a. (and - c. - and)
b. / and - d. (and /
Dc = .28 Df = .20

74. In which of the following items is the proofreader's mark used <u>incorrectly</u>?

a. there is plenty of time left in the school year
b. There is plenty of time in the school year
c. There is plenty of time left in the school year
d. There is plenty of time Left in the school year
Dc = .30 Df = .70

75. Identify the statement below that has <u>not</u> used the correct proofer's mark?

a. Once upon a time, long years ago . . .
b. Once upon time, a long years ago . . .
c. Once upon a time, long yrs ago . . .
d. Once upon a time, long years ago . . .
Dc = .30 Df = .67

76. The symbol for indicating that typing material should be in <u>all caps</u> is the

a. ≡ c. ———
b. / d. ⌒
Dc = .13 Df = .16

77. To indicate that a letter should be in lower case rather than capitalized, the following proofer's mark is used:

a. ○ c. /
b. = d. ↑
Omit

78. Which of the following rules of word division is incorrect?

a. Do not divide a word at a single letter
b. Do not divide a word on three succeeding lines
c. Do not divide words containing an apostrophe
d. Do not divide figures
Dc = .18 Df = .61

79. Tab stops are set for every () spaces in order to indent quickly to the various steps of an outline.

a. Two
b. Four
c. Five
d. Ten
Dc = .27 Df = .75

80. The setting on an elite typewriter for a manuscript that is to be bound at the left is

a. 6.
b. 9.
c. 12.
d. 18.
Dc = .69 Df = .43

81. Each line of a multi-line column head in a table should be

a. single spaced, centering each line separately.
b. double spaced, centering each line separately.
c. single spaced, blocking each line.
d. double spaced, blocking each line.
Dc = .57 Df = .52

82. Using a pica typewriter, give the left margin setting in the following problem:
(1) paper size is 8 1/2 x 5 1/2 inches
(2) longest line in each of 3 columns is 6, 10, 8
(3) 8 spaces are to be left between columns

a. 15
b. 14
c. 9
d. 7
Omit

83. The symbol that precedes the footnote in the typing of tables is the
Omit

84. In typing the line that divides the body of a table from the footnotes, you should space

a. once after the body, then twice after the line.
b. twice after the body, then once after the line.
c. once after the body, then once after the line.
d. twice after the body, then twice after the line.
Dc = .40 Df = .60

85. The second page heading of a letter consist of the name of the individual or business to whom the letter is addressed, along with the

a. address and date.
b. address and page number.
c. date and page number.
d. date and reference initials.
Dc = .42 Df = .21

86. The top margin of a two-page letter is

a. one inch.
b. two inches.
c. ten spaces.
d. fourteen spaces.
Dc = .42 Df = .37

87. How many horizontal spaces would be required if the longest line in column one was 6 spaces, column two was 8 spaces, and column three was 6 spaces (and you are to leave 6 spaces between the columns)?

a. 20
b. 40
c. 32
d. 52
Dc = .45 Df = .36

88. A five-column table is to be typed and the left margin is set at ten (10). If 6 spaces are allowed for each column and between each column, the tabulator set for the third column should be at

a. 34.
b. 40.
c. 46.
d. 52.
Dc = .34 Df = .48

89. The second page of a long business letter should be written on paper

a. of the same quality, but without printed letterhead.
b. called onion skin, without printed letterhead.
c. of the same quality and printed letterhead.
d. called onion skin, with printed letterhead.
Dc = .42 Df = .27

90. The typing of "leaders" in manuscripts is most commonly found when typing

a. footnotes.
b. bibliographies.
c. title pages.
d. tables of content.

Dc = .54 Df = .54

91. The typing of footnotes requires

a. single spacing, with double spacing between footnotes.
b. single spacing, with single spacing between footnotes.
c. indenting, double spacing, with double spacing between footnotes.
d. indenting, single spacing, with double spacing between footnotes.

Dc = .64 Df = .43

92. In reference to the typing of titles of articles and books, they are handled by

a. underscoring both entries.
b. typing both entries in all caps.
c. underscoring articles and typing books in all caps.
d. inserting quotation marks around articles and underscoring books.

Dc = .46 Df = .43

93. Which of the following is not a part of footnotes and bibliography entries?

a. Author
b. Publisher
c. City
d. State

Dc = .34 Df = .69

94. In the typing of bibliography and footnote entries, how are they similar in method of typing?

a. All of the following:
b. Method of indenting entries
c. Typing of names of authors
d. Typing of article and book titles

Dc = .31 Df = .60

95. The unique characteristic of the "Executive" style letter is the

a. quality of paper used.
b. size of stationery.
c. format (style) followed.
d. punctuation style used.

Dc = .36 Df = .69

96. A unique characteristic of the "hanging indention" or "inverted" style letter is that

a. the inside address is typed near the bottom of the letter.
b. the salutation and complimentary close are omitted.
c. all lines of each paragraph are indented except the first line.
d. all parts are indented that require more than one line of typing.

Dc = .48 Df = .48

97. The typing of a manuscript that is to be bound at the top requires the leaving of how many extra spaces?

a. 3
b. 5
c. 6
d. 9

Omit

98. The longest line in each of 4 columns is 6, 8, 8, 6 respectively. The center of the paper is at 50. What is the setting for a braced heading 14 spaces wide and to be centered over columns 3 and 4? (6 spaces between columns)

a. 63
b. 60
c. 56
d. 53

Omit

99. The military style for typing the date on letters is:

a. 06-24-73
b. June 24, 1973
c. 24 June 1973
d. JUN 24 73

Dc = .24 Df = .79

100. "Blind Copy" notations in the typing of letters are made on the

a. original copy only.
b. original and copies.
c. copies only.
d. envelope only.

Dc = .31 Df = .59

3. FORM B

(With Discrimination and Difficulty Indexes)

1. If the date line of the "personal letter" (or "note") is typed so that it begins at the center of the page, then which of the following letter parts would also begin at the center of the page?

   a. All of the following
   b. Salutation
   c. Body
   d. Complimentary close

   Dc = .23 Df = .13

2. The comma, when used, is typed at the end of which of the following personal letter parts?

   a. Salutation, date, and complimentary close
   b. Salutation and complimentary close
   c. Salutation and date
   d. Salutation and typed name

   Dc = .47 Df = .29

3. Paragraphs may be indented when the

   a. date and closing are indented.
   b. salutation and closing are indented.
   c. date and salutation are indented.
   d. date only is indented.

   Dc = .56 Df = .35

4. A basic rule for dividing words is:

   a. All of the following.
   b. Do not divide words at the past tense.
   c. Do not divide the last word on the last full line of a paragraph.
   d. Do not divide the last word on a page.

   Dc = .35 Df = .30

5. The title in a table is typed in

   a. all caps.
   b. underlined form.
   c. quotation marks or underlined form.
   d. all caps or underlined form.

   Dc = .37 Df = .39

6. The date line of a "personal note" is begun approximately how many spaces from the top of the paper?

   a. 6
   b. 10
   c. 12
   d. 18
   Omit

7. How many times do you space after a semicolon (;)?

   a. None, if it is the last stroke in the line
   b. Once, if it is the last stroke in the line
   c. Twice, if it is the last stroke in the line
   d. None of the above
   Dc = .14 Df = .47

8. The number of spaces that should follow the period is <u>one</u> when the period

   a. follows an abbreviation.
   b. ends a sentence.
   c. is used as a decimal.
   d. is the last stroke in the line.
   Dc = .33 Df = .20

9. The number of spaces between a whole number and a fraction that <u>is</u> located on the keyboard is

   a. either of the following. . . .
   b. none.
   c. one.
   d. two.
   Dc = .27 Df = .25

10. Which of the following statements is <u>not</u> true in punctuation rules?

   a. Space once after a comma (,) used in a sentence.
   b. Space twice after a question mark (?) used at the end of a sentence.
   c. Space once after a colon (:) used to separate hours and minutes.
   d. Space once after the exclamation point (!) used within a sentence.
   Dc = .37 Df = .36

11. Which of the following items has <u>wrong</u> spacing?

   a. 5%
   b. "Please shut the door," he yelled.
   c. $5
   d. G.A. Wagoner
   Dc = .30 Df = .22

12. Good posture at the typewriter means that the

    a. feet are flat on the floor, 12 inches apart.
    b. back is flat against chair back.
    c. elbows are tight against the body.
    d. fingers are curved over the keyboard.
    Dc = .12 Df = .46

13. Paper may be straightened after it is inserted into the typewriter by using which of the following typewriter parts?

    a. Paper bail and scale
    b. Line-space regulator
    c. Paper-release lever
    d. Variable line spacer
    Omit

14. Which of the following operations is <u>not</u> true?

    a. The space bar is controlled with the right hand.
    b. Paper is inserted into machine with the right hand.
    c. The carriage-release lever is controlled by both hands.
    d. The right hand is used to roll the paper into the machine.
    Omit

15. To allow typing beyond right margin setting, use the following typewriter part:

    a. Move the carriage-release lever.
    b. Move the right margin.
    c. Use the ratchet-release lever.
    d. Use the margin-release key.
    Dc = .12 Df = .08

16. The "platen" of the typewriter is also primarily known as the

    a. roller.
    b. carriage knob.
    c. cylinder.
    d. paper roller.
    Dc = .28 Df = .28

17. In typing a complete line in all caps, you need to depress the

    a. cylinder.
    b. shift-lock key.
    c. margin-release lever.
    d. tabulator key.
    Omit

18. If the vertical spacing is three (3) inches from top to bottom, how many spaces does that equal?

    a. Six
    b. Nine
    c. Twelve
    d. Eighteen
    Dc = .37 Df = .31

19. The () allows the typewriter to move freely vertically--when reset, realigns to original line setting.

a. Variable line spacer
b. Ratchet-release lever
c. Tabulator key
d. Carriage-release lever
Dc = .21 Df = .60

20. The location of the beginning of each typewritten line is made possible by which of the following machine parts?

a. Platen
b. Paper guide
c. Margin set, left
d. Tabulator key
Dc = .16 Df = .22

21. When an address is included with the date, the information includes the

a. address of the writer.
b. name and address of the writer.
c. address of the person to whom the letter is being written.
d. name and address of the person to whom the letter is being written.
Dc = .33 Df = .55

22. In order to double space a paragraph, you must

a. put one blank space between words.
b. put one blank space between lines.
c. leave no blank space between lines.
d. indent five spaces.
Dc = .16 Df = .10

23. Most typewriting paper, including business stationery, measures 8 1/2 by

a. 5 1/2 inches.
b. 11 inches.
c. 11 1/2 inches.
d. 14 inches.
Dc = .25 Df = .14

24. How many horizontal spaces are there to one inch (1") on an "elite" typewriter?

a. 6
b. 10
c. 12
d. 18
Dc = .40 Df = .20

25. More than one punctuation mark can occur at the end of a sentence and should be separated how?

a. One space
b. Two spaces
c. Separated by a comma and one space
d. Typed without spacing between them

Dc = .33 Df = .24

26. When a certain word (or words) in a sentence is to stand out (emphasized), the correct thing to do is to

a. either of the following . . .
b. write over the word several times.
c. capitalize every letter in the word.
d. underline the word.

Dc = .35 Df = .42

27. What should you do when the typewriter bell rings and you have already begun to type a new word?

a. Finish typing the word or divide it
b. Finish typing the word
c. Type as much more as is possible before the carriage locks
d. Throw the carriage at once

Dc = .30 Df = .18

28. To type the fraction "three-fourths," it is

a. necessary to use the left shift key.
b. necessary to use the right shift key.
c. not necessary to use either shift key.
d. best to lock the shift key to save time.

Dc. = .21 Df = .25

29. There are () spaces to an horizontal inch on an elite typewriter.

a. 6
b. 8
c. 10
d. 12

Dc = .46 Df = .26

30. The middle finger of both hands rests on which home row keys?

a. (a) and (j)
b. (d) and (k)
c. (f) and (j)
d. (s) and (k)

Omit

31. Which device holds paper firmly against the platen?

a. Paper table
b. Paper bail and scale
c. Line space regulator
d. Paper bail rollers

Dc = .26 Df = .27

32. If a sheet of paper is rolled into the typewriter incorrectly, it can be straightened by

a. manipulating the line space regulator.
b. removing the paper and reinserting it correctly.
c. pressing the carriage release lever.
d. operating the paper-release lever.
Dc = .19 Df = .13

33. Which of the following words would fill a one-inch wide column in an elite typewriter;

a. Keyboard
b. Horizontally
c. Papers
d. Typewriter
Dc = .40 Df = .24

34. What is the correct spacing before and after an abbreviated word within a sentence?

a. One space before the period and one after
b. Space once after the period
c. Space twice after the period
d. Do not space after the period
Dc = .33 Df = .18

35. When typing a sentence containing a colon, you should have

a. one blank space before the colon.
b. two blank spaces after the colon.
c. one blank space after the colon.
d. no blank space after the colon.
Dc = .35 Df = .19

36. How many inches from the left edge of a postal card should the address begin?

a. One
b. Two
c. Three
d. Four
Dc = .11 Df = .56

37. You are to center a line horizontally on an elite typewriter that is 25 spaces wide. At what point might you begin typing the line?

a. 25
b. 38
c. 47
d. 17
Dc = .53 Df = .40

38. Knowledge of which two machine parts is necessary in order to correctly insert paper into the typewriter?

a. Carriage return lever, variable line spacer
b. Ratchet release lever, tabulator key
c. Paper guide, paper release lever
d. Paper bail, line-space regulator
Omit

39. The () device on the typewriter that allows quick movement to preset points.

a. Ratchet release lever
b. Carriage return lever
c. Variable line spacer
d. Tabulator key
Dc = .37 Df = .29

40. Type the dash with

a. the hyphen, spacing once before and after.
b. two hyphens, spacing once before and after.
c. the hyphen, without spacing before or after.
d. two hyphens, without spacing before or after.
Dc = .40 Df = .55

41. The placement of the name of the writer of a business letter is a

a. triple space below the body.
b. double space below the company name.
c. triple space below the complimentary close.
d. double space above the reference initials.
Dc = .60 Df = .49

42. Placement of the "reference initials" in a business letter

a. depends upon the style of the letter.
b. is always at the left margin.
c. should be four spaces below last line of typed name.
d. is six lines below the complimentary close if a company name is used.
Dc = .46 Df = .26

43. The "complimentary close" in a business letter should be

a. placed a double space below the body.
b. placed a double space above the typed name.
c. typed in all capitals.
d. followed by a period.
Dc = .16 Df = .10

44. When the "typed name" and "title" are long, the title is placed

a. one space below the typed name.
b. two spaces below the typed name.
c. on the same line with the name, regardless.
d. omitted.
Dc = .35 Df = .21

45. The "attention line," when used in a business letter, is located between the

a. salutation and body of the letter.
b. inside address and salutation of the letter.
c. mailing notation and the inside address of the letter.
d. date and inside address of the letter.
Dc = .51 Df = .48

46. When used in the business letter, where is the "subject line" placed?

a. Two spaces below the letterhead
b. Two spaces below the date
c. Two spaces below the inside address
d. Two spaces below the salutation
Dc = .44 Df = .39

47. Which of the following responses is the correct order when all three notations are included in a business letter?

a. Enclosure, postscript, carbon copy
b. Carbon copy, postscript, enclosure
c. Enclosure, carbon copy, postscript
d. Carbon copy, enclosure, postscript
Dc = .47 Df = .43

48. When used in the typing of business letters, the colon and comma are placed after the

a. complimentary close and typed name.
b. salutation and complimentary close.
c. complimentary close and company name.
d. salutation and typed name.
Dc = .30 Df = .15

49. Sometimes three (3) letter parts are begun at the center of the paper. Which three are they?

a. Date, complimentary close, typed name
b. Date, subject line, postscript
c. Attention line, subject line, postscript
d. Attention line, subject line, mailing notation
Dc = .30 Df = .21

50. The "salutation" and "complimentary close" are omitted in what style of business letter?

a. Inverted
b. Executive
c. Extreme Block
d. AMS
Dc = .42 Df = .32

51. The subhead (subtitle) in tables should have

a. one blank space before and two after.
b. two blank spaces before and one after.
c. two blank spaces before and two after.
d. three blank spaces after.
Dc = .37 Df = .66

52. In a business letter, the date line should be written

a. Nov. 28, 1973.
b. 11/28/73.
c. November 28, 1973.
d. 11-28-73.
Dc = .25 Df = .12

53. The "subject line" of a letter lends help to the

a. heading of the letter.
b. address of the letter.
c. salutation of the letter.
d. body of the letter.
Dc = .26 Df = .13

54. Which of the following letter parts directs a business letter to the exact person or department that is to receive the letter?

a. Address
b. Subject line
c. Attention line
d. Reference initials
Dc = .65 Df = .36

55. In the business letter, the "inside address" contains the

a. address and date of the writer.
b. name and address of the writer.
c. name and address of the person or firm being written.
d. name, address and date of the person or firm being written.
Dc = .65 Df = .38

56. The words "Registered Mail" may be placed in the business letter

a. two spaces below the attention line.
b. between the salutation and body of the letter.
c. two spaces below the letterhead.
d. between the date and inside address.
Dc = .56 Df = .53

57. In typing business letters, you should have at least two blank spaces between which of the following two letter parts?

a. Body and complimentary close
b. Salutation and body
c. Subject line and body
d. Date and inside address

Dc = .60 Df = .51

58. Though it is not a basic letter part, which of the following items is usually included in the AMS Simplified business letter?

a. Attention line
b. Subject line
c. Enclosure
d. Special mailing notation

Dc = .56 Df = .53

59. Subheadings (subtitles) in tabulation problems should be

a. underlined.
b. typed in all caps.
c. typed with each important word capitalized.
d. underlined, with each important word capitalized.

Dc = .39 Df = .60

60. In typing column headings in tables, you should type them

a. underlined.
b. underlined and a double space above first item.
c. in all capital letters a single space above first item.
d. in all caps a double space above the first line.

Dc = .47 Df = .36

61. In typing the title of a table, you should leave how many blank lines between the title and first line in the body of the table?

a. None
b. One
c. Two
d. Three

Dc = .16 Df = .39

62. The return address on envelopes is typed

a. flushed with the left edge of the envelope.
b. one inch from top of the envelope.
c. single spaced.
d. double spaced.

Dc = .42 Df = .32

63. When addressing an envelope, the number of spaces to be left between lines is

a. none, regardless.
b. one, regardless.
c. two, regardless.
d. one, if there are more than three lines

Omit

64. When a special mailing instruction, such as "Special Delivery," is put on the envelope, it is placed in all caps

a. in either bottom corner of the envelope.
b. below the return address, two or three spaces.
c. to the left of the first line of the address.
d. under the stamp.
Dc = .32 Df = .39

65. Directions ("Personal," "Attention," etc.) are often placed on envelopes and are typed approximately

a. two spaces above the lower left corner of the envelope.
b. three spaces below the stamp.
c. three spaces below the return address.
d. two spaces above the lower right corner of the envelope.
Omit

66. Which of the following methods is <u>correct</u> for typing city, state, and ZIP?

a. City on one line, state and ZIP on next line
b. City and state on same line, ZIP on next line
c. All three on the same line
d. ZIP should be placed in lower right corner of envelope
Dc = .39 Df = .21

67. An unbound manuscript would have a left margin of

a. 1/2 inch.
b. 1 inch.
c. 1 1/2 inches.
d. 2 inches.
Dc = .54 Df = .32

68. The symbol used for the abbreviation "feet" is the

a. number mark.
b. quotation mark.
c. hyphen.
d. apostrophe.
Dc = .40 Df = .31

69. If a special key is not available, which key is used in typing the "degree" sign

a. Little "o"
b. Big "O"
c. Zero
d. It doesn't matter.
Dc = .19 Df = .15

70. Which key do you strike to type the symbol for "seconds" (as in time)?

a. Apostrophe
b. Quotation mark
c. Period
d. Number sign
Dc = .35 Df = .60

71. Which of the following is not an expression for dimensions?

a. x
b. "
c. '
d. /
Dc = .49 Df = .37

72. A symbol for expressing the weight of paper is

a. (").
b. (#).
c. (*).
d. (/).
Dc = .35 Df = .33

73. When a special key is not available on the typewriter, the addition sign is made by which of the following two symbols?

a. Left paren, hyphen
b. Diagonal, hyphen
c. Right paren, diagonal
d. Left paren, diagonal
Dc = .46 Df = .37

74. Identify the statement below that has not used the correct proofer's mark.

a. We have not really changed our ways.
b. We have really changed our ways.
c. We have not really changed our ways.
d. We have not really changed our ways.
Dc = .14 Df = .56

75. In which of the following items is the proofer's mark used incorrectly?

a. Ask for me tomorrow, and you will see.
b. Ask for tomorrow me and you will see.
c. Ask for me tomorrow, and you will see.
d. Ask for me tomorrow, and you will see.
Dc = .11 Df = .65

76. In proofreading, when material should be typed in all caps, the indication is made by the

a.
b.
c.
d.
Dc = .19 Df = .11

77. Which of the following proofers marks tells the typist to put into lower case a letter that has been capitalized?

a. ○ c. /
b. // d. ^
Omit

78. Which of the following items is wrong? Do not divide

a. a word at the past tense. c. words on three succeeding lines.
b. an abbreviation. d. figures.
Dc = .32 Df = .68

79. To speed the typing of outlines, several tabulation points are preset for

a. two spaces. c. five spaces.
b. four spaces. d. ten spaces.
Dc = .23 Df = .75

80. To set the left margin of a pica typewriter to allow for the binding of manuscript typing, you would need to space in () spaces from the left edge of the paper.

a. Ten c. Fifteen
b. Twelve d. Eighteen
Dc = .74 Df = .49

81. When a column heading of a table needs more than one line of typing, you should

a. double space each line and center each line.
b. single space each line and center each line.
c. double space each line and block each line.
d. single space each line and block each line.
Dc = .46 Df = .32

82. Using an elite typewriter, give the left margin setting in the following problem:
(1) paper size is 8 1/2 x 5 1/2 inches
(2) longest line in each of 3 columns is 6, 10, 8
(3) 8 spaces are to be left between columns

a. 15 c. 13
b. 14 d. 12
Omit

83. Which symbol precedes the footnote when typing footnotes with tables?

a. Ampersand
b. Asterisk
c. Exclamation point
d. Number mark
Omit

84. The footnote, when typed with a table, is placed

a. two spaces down from the last line in the body.
b. three spaces down from the last line in the body.
c. three spaces down from the divider line.
d. four spaces down from the last line in the body.
Dc = .16 Df = .76

85. Included in the heading of the second page of a two-page letter is the name of the individual or business of the

a. writer, with page number and date.
b. writer, with address and date.
c. addressee, with address and date.
d. addressee, with page number and date.
Dc = .70 Df = .44

86. The margin from the top edge of the paper to the "second-page" heading of a business letter is

a. one inch.
b. two inches.
c. 10 spaces.
d. 14 spaces.
Dc = .47 Df = .25

87. You have three columns to type--6, 8, 6 spaces respectively is the widest item in each of the three columns--you are to leave 6 spaces between the columns. What is your space line?

a. 20
b. 26
c. 32
d. 38
Dc = .54 Df = .48

88. There are five columns, with each column having items 6 spaces wide, leaving 6 spaces between each column--the third column would begin at what point if the first column began at 10?

a. 28
b. 34
c. 40
d. 46
Dc = .58 Df = .48

89. What kind of paper is used for the second page of a two-page business letter?

a. Onion skin
b. Monarch
c. Baronial
d. Plain bond
Dc = .47 Df = .36

90. "Leaders" are used in the typing of manuscript

a. tables of content.
b. title pages.
c. bibliographies.
d. footnotes.
Dc = .51 Df = .54

91. Which of the following items is an accurate description of the typing of footnotes in manuscript typing?

a. Single spacing, double spacing between footnotes
b. Double spacing, double spacing between footnotes
c. Indented, single spacing, double spacing between footnotes
d. Indented, double spacing, double spacing between footnotes
Dc = .60 Df = .32

92. The two symbols used in typing titles of articles and books in footnotes are

a. quotation marks and underscore.
b. all caps and quotation marks.
c. underscore and all caps.
d. asterisk and all caps.
Dc = .49 Df = .40

93. Which one of the following is not usually included in the footnote or bibliography entry?

a. City
b. State
c. Year
d. Page number of quote
Dc = .37 Df = .66

94. In typing footnote entries and bibliography entries, the method is the same in the

a. indention of entries.
b. typing of names of authors.
c. identification of entries (numbering, etc.).
d. typing of book titles.
Dc = .47 Df = .55

95. The size of the stationery is a distinction of the

a. AMS style letter.
b. Inverted style letter.
c. Executive style letter.
d. Hanging indention style letter.

Dc = .56 Df = .42

96. What is the main difference between the "handing indention" style letter ("inverted" style) and other letter styles?

a. All letter parts are indented that require more than one line of typing.
b. The inside address is typed near the bottom of the letter.
c. All lines of each paragraph are indented except the first line.
d. The salutation and complimentary close are omitted.

Dc = .51 Df = .61

97. A top bound manuscript provides for how much extra space at the top?

a. One inch
b. Two inches
c. Three inches
d. Six spaces

Omit

98. There are 4 columns with the longest line in each being 6, 4, 8, 6 respectively. The center of the paper is 42. What is the setting for a braced heading 10 spaces wide and to be centered over columns 3 and 4? (6 spaces between cols.)

a. 45
b. 48
c. 51
d. 58

Omit

99. The correct placement of the day of the month in typing the date of a letter in military style is

a. before the month and year.
b. between the month and year.
c. after the year and month.
d. the day of the month is omitted.

Dc = .40 Df = .52

100. If several carbon copies of a letter are to be sent without knowledge to the person being written, the procedure that should be followed is called

a. "executive copy."
b. "blind copy."
c. "on arrival instruction" notation.
d. "special mailing instruction" notation.

Dc = .58 Df = .43

4. CODING SHEET FOR COMPUTER ANALYSIS

Columns	Identification
1-2	Student Number
3-20	Student Name
21-22	School Identification 1-40 = secondary schools 41-60 = colleges 61-80 = junior high or middle schools 81-99 = area school
23	Pre-College Typewriting Education 0 = none 1 = 1 semester 2 = 2 semesters 3 = 3 semesters 4 = 4 semesters 5 = 2 semesters + voe 6 = 4 semesters + voe 7 = voe only 8 = other
24	College Typewriting Education 0 = none 1 = 1 quarter 2 = 2 quarters 3 = 3 quarters 4 = 4 quarters 5 = 1 semester 6 = 2 semesters 7 = 3 semesters 8 = 4 semesters 9 = other
25	Test Form 1 = pink (form a) 2 = blue (form b)
30	Test Items 1 = cards with items 1-50 2 = cards with items 51-100
31-80	Test Item Marked (cards 1 and 2) 1 = a 2 = b 3 = c 4 = d 5 = blank

5. EXAMPLES OF CHANGES IN TEST ITEMS

(FORM A)

Because alternative "d" received no responses, the following change was made to Item 18:

_____There are how many vertical spaces to an inch?		
a. Six		a. 6
b. Ten		b. 9
c. Twelve		c. 10
d. Eighteen	Changed to:	d. 12

Item 23 was omitted in the Final Test because of the close similarity to Item 22:

22. If you wanted to single space a paragraph, you would

23. If the paragraphs of a "personal note" were to be single spaced, you would

Item 30 (Item 41 on the Final Test) was changed because alternative "c" was not technically correct though the response was intended to be the correct answer.

_____The name of the writer of a business letter should be typed
c. a double space above the reference initials.
Changed to:
c. a single or double space above the reference initials.

Item 32 (Item 43 on the Final Test) was changed because alternative "a" was too obvious:

_____When typing the complimentary close of a business letter
a. it is placed a double space below the body.
Changed to:
a. the first and each important word is capitalized.

Item 53 (Item 64 on the Final Test) was changed because alternative "b" received no responses:

_____Special mailing information (Registered Mail, etc.), when typed on the envelope, is placed
b. in the lower right corner.
Changed to:
b. in the last line of the address.

6. EXAMPLES OF CHANGES IN TEST ITEMS

(FORM B)

The stem of Item 17 was changed to obtain a more valid response:

_____In typing a title or complete line in all caps, you need to depress the

Item 24 (Item 23 on the Final Test) was changed to include part of the responses in the stem:

_____Most typewriting paper, including business stationery, measures
a. 8 1/2 by 5 1/2 inches.
b. 8 1/2 by 11 inches.
c. 8 1/2 by 11 1/2 inches.
d. 8 1/2 by 14 inches.

Change: "8 1/2 by" was put in the stem.

The stem in Item 46 (Item 57 on the Final Test) was altered to make the item grammatically correct:

_____In typing business letters, you should leave <u>at least two blank spaces</u> between which of the following?

_____In typing business letters, you should leave <u>at least two blank spaces</u> between which of the following two letter parts?

Two alternatives in Item 68 (Item 81 on the Final Test) were changed because of superfluity of words:

a. double space each line and also center each line.
b. single space each line and also center each line.

Item 76 (Item 89 on the Final Test) was changed because the alternative "c" received no responses.

_____What kind of paper is used for the second page of a two-page business letter?

a. Onion skin		a. Onion skin
b. Monarch	Change:	b. Monarch
c. Letterhead		c. Baronial
d. Plain bond		d. Plain bond

APPENDIX C

PERFORMANCE TESTS

1. INSTRUCTIONS TO TEACHERS

To Cooperating Teachers:

Thank you for assisting me in my research study at The University of Tennessee by offering to administer the typewriting performance tests to your students.

The tests are divided into three groups according to performance levels: Group 1, Levels 1 and 2; Group 2, Levels 2 and 3; Group 3, Levels 3 and 4. These tests should be administered in the following manner:

Group 1, 1st semester high school or approximately 45 college class hours.
Group 2, 2nd semester high school or approximately 90 college class hours.
Group 3, 3rd semester high school or approximately 135 college class hours.
Group 4, 4th semester high school or approximately 180 college class hours.

Students should use their own supplies except for envelope forms, which are supplied by me.

The following times (stated in minutes) are allotted to each section of the tests:

Test Item	Levels 1	2	3	4
Timed Writing	5	5	5	5
Letter	10	10	10	10
Tabulation	10	10	10	10
Manuscript	--	10	13	13
Number Typing	--	--	--	3
TOTALS	25	35	38	41

Teachers may need to administer one section of the test each day for two days.

Would you assist the students in completing the identification sheet that is attached to each test? An example of completing the second line by a college student might be:

High School (1)(2) 3 4 Semesters College 1(2)3 4 5 Semesters/Quarters

The circles indicate the student completed two semesters of high school typewriting and has completed or is enrolled in the second semester of college typewriting.

Please return the test items, tests, and identification sheets for each student.

Sincerely

Ivey Chance

Ivey Chance

2. INSTRUCTIONS TO STUDENTS

TO COOPERATING STUDENTS:

Thank you for assisting me in my research study at The University of Tennessee. You are participating in a project that will benefit typewriting students in future years.

The supplies you need for this project are:

a. 8 1/2 x 11 inches plain typewriting paper
b. typewriting eraser
c. carbon paper
d. carbon copy paper (paper like in "a" above will suffice)

Envelopes will be supplied by your teacher.

Would you also complete the following information? Simply circle the semester (or quarter) number indicating your present standing.

Date_____

Name_____ School_____

High School 1 2 3 4 VOE Semester College 1 2 3 4 Quarter/Semester

3. FORM A

Level 1--Timed Writing

This man was born in Boston in 1809. The parents were both of the 13
stage; they toured all the states. When he was only a few years old, his 28
folks died. A friend by the name of John Allen took him in and raised him 43
well. He was sent to the best schools in the land. What was his name? 57
His name was Poe. 60

As a writer of short stories Poe had no equal in the land. He is 73
said to have been the first one to write what we know now as the detective 88
story. It was pure art the way he worked up the plots and the way he wrote 103
in such a clear way the scenes of gloom, horror, and terror. 115

Poe had a very sad life and he died at the young age of forty. While 129
at one school Poe took up the bad habits of drink and gambling. His debts 144
were so great that the man who had raised him could not help him pay them 158
off. In fact, he said he would not ever help Poe again. The story of Poe's 173
life for the next twenty years is one of the saddest of any great man in our 188
past. For all these years he lived a very poor life with just few rays of 203
light here and there. 207

To Poe, poems were music, and there was no poem that was not song. 221
Even the folk who heard him recite his works said his voice was like a song. 236
The poem most loved by those who came to hear him was the poem about the 250
raven. 251

Some may not know it but Poe was married. His wife died two years 265
before he did. His own death came from drinking too much. Some believe that 280
Poe could not or may not have been able to write such peoms had not he lived 294
the sad life that he lived.

Level 1--Letters

Directions: Type the following personal letter, using any acceptable letter style with appropriate punctuation. (10 minutes)

(1) 60-space line margin

(2) Space down 13 times from top of page to begin typing the return address and date

(3) Space down 8 times from date to salutation

(4) Single space body of letter

(5) Space down twice after each paragraph

(6) Space down twice from body to complimentary close

1917 Radcliff Drive
Knoxville, TN 37912
(Current Date)

Dear Betty, The party at your house on Saturday night was a real success. We certainly had a wonderful time. (Paragraph) When we returned home, we found the front door wide open and our dog Toby was outside having a fine time. So, it looks like Saturday night turned out fine for all. (Paragraph) We just wanted you to know how much we enjoyed your dinner and all the good fellowship that came with it. You must let us take our turn by having everyone over here soon--maybe in October, for a Halloween Party. Make a note on your calendar. Sincerely,

Level 1--Tabulation

Directions: (1) Center horizontally the longest line in body

(2) Center vertically on full sheet of paper

(3) Hand in when completed--you are through

(4) (10 minutes)

TENNESSEE CITIES

Dayton

Lake City

Bristol

Sparta

Franklin

Columbia

Jackson

Milton

Martin

Woodbury

Level 2--Timed Writing

The school house: The school house stood near the center of the 13
district, at the forks of four roads, so near the usual track of wagons that 28
a large stone was set up at the end of the house to keep it from injury. 43
Except in the dry season the ground was wet, and the soil by no means firm. 58
The spot was purposely exposed to the bleak winds of winter; nor were there 73
any shade trees to keep the children from the hot rays of the summer's sun, 88
as they were cut down many years ago. Neither was there any such thing as 102
an outhouse of any kind, not even a wood shed. 112

The size of the house was 22 by 20 feet. From the floor to the top it 126
was seven feet tall. The chimney and front door took up about four feet at 141
one end, leaving the room itself 18 by 20 feet. Around the sides of the room 156
were big desks, placed so that when the pupils were sitting at them their 171
faces were to the teacher and their backs to the wall. Placed to the sides 186
of the desks near the teacher were stools for the small ones. The teacher's 201
desk and chair took up the center. On this desk were placed a rod, or 215
ferule; sometimes both. These, with books, writings, inkstands, rulers 229
and plummets, with a fire shovel, and a pair of tongs (often broken), were 244
the main furniture. 248

The room was warmed by a large and deep fire place. So large was it, 262
and so good in warming the room otherwise, that there had been seen about 275
one-eighth of a cord of good wood burning in it at a time. In bad weather 292
it was estimated that the amount usually used was not far from a cord a week. 307

Level 2--Letters

Directions: Type the following letter, making one carbon and addressing an envelope. You may use any acceptable letter style, with appropriate punctuation style. Assume that (1) you are using letterhead paper and (2) the envelope has the return address preprinted so that only the address need be typed. (10 minutes)

(Current Date) International Travel Agency, 3413 Oakdale Avenue, Memphis, TN 37423 Gentlemen My wife and I are planning a vacation in Europe beginning August 1. Would you provide us with travel costs and other information for such a trip? (P) We would like to visit Ireland (3 days), Germany (4 days), England (1 week), France (2 weeks). This schedule gives us one month abroad though my vacation period is six weeks long. You may, therefore, use up to one additional week for travel between points. (P) We would like to plan part of the trip to be taken by automobile; therefore, would you also figure the rental of a small car, such as the Volkeswagen? (P) May we hear from you soon? Yours truly J. Fred Harper, President (Your Initials)

Level 2--Manuscript

Directions: (1) Type the following article in manuscript form, using a 60-space line (Pica) or a 70-space line (Elite)

(2) Leave a top margin of 1 1/2" on first page; 1" on other pages

(3) Leave a bottom margin of 1"

(4) (10 minutes)

THE HARVEST

A person who should take a knife and begin to slash his flesh until the blood began to run from it would be shut up in an insane asylum; but we are all the time cutting our mental selves with the edged thought-tools--hatred, revenge, anger--and yet we think we are sane and normal. Every thought is a seed from which grows a mental plant and the same as itself. If there is a venom in the seed thought-plant, there will be venom in the fruit which will poison the life, which will stop our happiness and success. If you sell yourself to your desires, you must expect the harvest to be the same. A man who sells himself to a selfish life, a life of taking and never giving, must not complain if there are thistles and thorns in his harvest. (P) Life is just to us. It gives us what we pay for. The truth is, many of us ask for things and we are not willing to pay the price, and, of course, we receive only as we pay, for Nature keeps a cash store. She gives us all we pay for; we cannot take away a thing if we do not pay the price.

Level 2--Tabulation

Directions: Center horizontally and vertically on a full sheet of paper the following problem. Erase and correct all typing errors. Use double spacing. Leave 10 spaces between columns. Hand in when completed. (10 minutes)

CITIES TO VISIT IN TENNESSEE

(by Month)

Bristol	January
Knoxville	February
Maryville	August
Cleveland	October
Nashville	December
Sparta	November
Winchester	February
Columbia	August
Jackson	September
Memphis	October

Level 3--Timed Writing

Crip wobbled when he walked, and most people who didn't know him thought 14
he was drunk. But he never drank. It was just that he had weak legs. From 29
the waist up there wasn't a stronger man in all Rutherford County. 42

Crip worked for Mr. Green Sawyer at the Railway Express Company, 55
loading and unloading the express wagon that met all the trains. When he 70
spread his legs apart and put a heavy crate on his shoulders you wouldn't 84
know there was anything wrong with him. The weight seemed to steady him. 99

I don't remember when Crip started working for the Express Company, but 113
I do remember when he had to quit. It was in the late 20's that Mr. Sawyer 128
decided he had to move along with the times, so he got rid of the horse and 143
wagon and bought a truck. Crip, of course, had never learned to drive. 157

People still used a lot of coal fires in those days, and Crip decided 171
to go into business for himself--hauling kindling wood. Mr. Sawyer helped 186
him get started by giving him a jennet and second-hand spring wagon. 199

Crip named the jennet Mr. Sawyer. On one side of the wagon he painted 213
"Crip's Kindling, Wagon No. 1." On the other side he painted "Crip's 227
Kindling, Wagon No. 2." Crip said that made it look like he had a fleet. 242

Business was good. Then one night the shed where Crip kept the jennet 256
and wagon burned up. He managed to get the wagon out, but the jennet 270
wouldn't move. Mr. Crip got a new jennet, though, and named him Mr. Sawyer 285
No. 2. 286

Level 3--Letters

Directions: Type the following letter, making one carbon and addressing an envelope. You may use any acceptable letter style, with appropriate punctuation style. Assume that (1) you are using plain bond paper, and (2) the envelope is plain, requiring the typing of both the return address and address. (10 minutes)

Central High School, Oliver, TN 37024, (Current Date)
Brookfield Motors, 2012 South Bend Avenue, Knoxville, TN 37916. Attention Mr. L. S. Jones
Gentlemen Central High School will conduct its annual "Career Day" program on Friday, April 12. Would you help us again this year? (P) Last year your company provided us with one of your top mechanics to speak on his career. If you will remember, his program was rated second only to a NASA Astronaut who just happened to be passing through Oliver on his way to Houston. This year we do not have an astronaut; therefore, we feel sure your mechanic will be the most popular guest on our program. (P) Could you also send an automobile salesman this year? Our Business Club would like to have someone from the Sales Department. (P) We will appreciate your help very much. A copy of the 1972 program is enclosed to give you an example of a typical "Career Day" program. Yours truly Teresa Giles, Student Body President, (your initials)
Enclosure

Level 3--Manuscript

Directions: (1) Type the following article in manuscript form, using a 60-space line (Pica) or a 70-space line (Elite)

(2) Leave a top margin of 1 1/2" on first page; 1" on other pages

(3) Leave a bottom margin of 1"

(4) Correct all errors

(5) (10 minutes)

The Cup

As I am writing this there are men from all parts of the world who are flying throughthe air in france for the cup which typifies the highest round of the ladder in the art of aviation, and under conditions which make it almost certain that accidents will happen whichwill lead to the loss of life or limb. At the first glance one is tempted to ask why they are doing it and if the game is well worth the candle. Were the winning of the cup the sole object in view the answer would be that it is not, but suchis not the case; the prize in itself is not and can never be equal in value to a single human life, but it is the thing that the cup stands for which really counts. The time is at hand when man will conquer the air as he had already conquered the land and the sea, and every contest like the presentonly serves to bring the victory one

step nearer, and the worth of but a single step in the progress of the world is something too vast to be set down in figures or even to be counted in human lives. It not seldom happens, too, that such a step is really a leap in the dark, and the taking of it may lead to fields so broad in extent that one could not imagine them it exist before the step was taken and the curtain of the future thrown aside. The winning of a prize as small as a grain of mustard seed may lead to rewards so great that their weight will shake the very foundations of the globe.

Add side-heading
Leap in the Dark

Level 3--Tabulation

Directions: Center horizontally and vertically on a full sheet of paper the following problem. Erase and correct all typing errors. Use double spacing. Hand in when completed. (10 minutes)

COMMON WORD LIST

overstock	direction	pamphlet	divide
social	profit	manuel	involve
holiday	fulfill	neutral	compare
estimate	compose	window	clipping
workload	elective	military	ultimate
question	argument	kindliness	totally
surprise	typewriter	largest	gratitude
opposite	modern	shoulder	journey
complete	volume	report	between
youthful	country	internal	little

Level 4--Timed Writing

It seems the police have fallen into a way of thinking that is common 14
in a modern industrial society: If a job can't be done by a machine, it 28
can't be done. 31

This may be a good principle in farming, construction work, and other 45
such jobs. But good police work still means pounding the streets looking 60
for witnesses, asking the right questions, and a good supply of what some 74
like to call the "work ethic." 80

No doubt there are still many policemen who have a desire for 92
work. But it seems too many like to ride around in their cars looking 106
for the obvious instead of undertaking the serious digging necessary to 120
turn up hard clues. 124

No doubt this has added to the growing fight between the courts and 138
the police over the number of convictions obtained in court. 150

The land's courts and laws still require that people get on the 162
stand and testify to their knowledge of a crime. It is little wonder that 177
so many cases which have been prepared on the basis of lie tests and 191
electronic surveillance--without hard facts--are found wanting in the courts. 206

The quality of law enforcement is not likely to improve until the 220
nation's police forces are staffed with more dedicated officers who want 235
to work and the citizenry shows a desire to pay good men enough for the 249
work they are expected to do. 255

The people should be willing to pay the price for good law enforcement; 269
the man who wants to be a policeman must really want to be one. 282

Level 4--Letters

Directions: Use any acceptable letter style, with appropriate punctuation style. Type an envelope and carbon copy. Put dates and times (paragraph 2) in tabular form. These instructions are incomplete--certain decisions for typing this letter appropriately are left to you. (10 minutes)

Dean Raymond L. Smithson, School of Business, City University, Nashville, TN 37204 Dear Dean Smithson Subject: Communications Consultants Your university has been recommended as one that can provide us with a special service. A group of 150 management trainees are arriving in Nashville for a one week seminar on plant procedures. The seminar will last from August 1 through August 7. A copy of the program is included. (P) Would your school provide us with communications consultants to talk with our trainees on the following dates and times? August 2, 8-10; August 3, 10-12; August 4, 8-10; August 5, 10-12. We are in a position to pay $50 for each two-hour session. In addition, our company would like to send a check for $200 to be used in school programs and projects. (P) Do you think you would be interested in providing this service to our company? May we hear from you soon? Yours truly, Allan L. Logan, District Manager (your initials)

Level 4--Manuscript

Directions: (1) Assume that the manuscript is to be bound on the left side of paper

(2) Leave a top margin of 1 1/2" on first page; 1" on other pages

(3) Leave a bottom margin of 1"

(4) Type footnotes at the bottom of each page

(5) (10 minutes)

Vocational Subjects Offered in High Schools by Patty Glover Campbell

An official with the United States Department of Education states that one way the magnitude of the job vocational educators are facing can be comprehended is by examining the great number of potential young people for whom Federal assistance programs are planned. He believes that since only 20 percent of high school students will actually complete a four-year college program, the remainder, about 10.4 million students (in 1965), could benefit from vocational education. This number can be expected to be around 13.6 million by 1985.[1] (P) James B. Conant, in The American High School Today, states that vocational education, an integral part of the whole program of education, requires aptitude not possessed by students at the lowest academic level.[2] (P) A noted business educator, Elvin S. Eyster, says that there is a tendency for career preparation for technical positions in business to move out and up from the high school, and out and down from colleges and universities. He feels that junior colleges, community colleges, business colleges, and colleges that offer one- and two-year business programs will increasingly train students in high-level technical business courses.[3]

[1]Calfrey C. Calhoun, "Vocational, Technical, and Adult Education Research for 1967," Journal of Business Education, XLII (February, 1967), 218.

[2]James Bryant Conant, The American High School Today (New York: McGraw-Hill Book Company, Inc., 1959), p. 123.

[3]Elvin S. Eyster, "Education for Business and Office Careers," American Vocational Journal, IV (September, 1965), 20.

Level 4--Typing Numbers in Context

Directions: (1) Do not start--Your teacher will signal to start

(2) Space down 16 single spaces from top of the paper

(3) Set left margin at 13 for Pica, 22 for Elite

(4) Set tab stops--Pica: 32, 47, 66
Elite: 41, 56, 75

(5) Do not erase--if you make an error, start over on new sheet

(6) (3 minutes)

extension	92.62	allow	29.83
fund	57.84	forwarded	95.61
satisfied	63.15	history	57.32
front	46.89	referred	49.67
begin	81.86	semester	19.53
attaching	13.49	chest	97.18
advising	79.47	court	12.84
heard	26.78	pleasant	58.66
traffic	43.21	relative	64.35
purchaser	68.32	single	92.85
finest	17.34	salesmen	64.35
session	70.86	finish	27.93
whose	48.16	arrange	32.24
allowance	96.03	cooperate	27.45
interests	79.35	armed	23.40
cause	68.97	consumer	59.78

Level 4--Tabulation

Directions: Use a full sheet of paper for typing the following problem in acceptable form. Erase and correct all typing errors. Use double spacing. Hand in when completed. (10 minutes)

VOE CONFERENCES (1974)

State	City	Region	Date
Alabama	Brocton	23A	January 4
Kentucky	Trenton	46B	January 11
Georgia	Atlanta	11D	February 8
Tennessee	Jackson	33G	February 15
Tennessee	Nashville	21F	March 1
Tennessee	Knoxville	13E	March 8
Tennessee	Memphis	49M	March 15
Alabama	Huntsville	5H	April 5
Georgia	Athens	27L	April 12
Tennessee	Knoxville	12R	April 19

4. FORM B

Level 1--Timed Writing (Alternate Item)

In an old square house that was made out of wood and sat on the edge 14
of the sea was born one of the most famous of all our American writers. 28
The name of the state in which he was born was Maine. He was born two years 43
before one other great man of the land, by the name of Poe. What was the 57
name of this great man? His name was Longfellow. 67

His life from the very start moved on straight lines. He came from a 81
family that lived in a good home and one in which there never had to be 95
concern from where the next meal would come. This poet went to school with 110
other boys who at a young age were thinking more of verse making than of all 125
the things that boys should love to do at such an age. 136

After school, he travelled over the seas to see the many things and 150
places he would write about the rest of his life. He came back to school as 165
a teacher and taught for more than twenty years. He quit at a young age to 180
spend the rest of his life writing and to visit with his many friends. 194

He was twice married. His first wife died while they were on a trip 208
overseas to study. He was married to his next wife for 19 years. In fact, 223
she was put to rest on the day that would have marked their nineteenth year. 238
He was so saddened by her death that for years he could not write--and no 252
one could dare speak of his wife. 259

This man was one of the greats of all our writers. He took what he saw 273
or heard or read and wrote his own works. He wrote out of what he learned 288
from others. 290

Level 1--Letters (Alternate Item)

Directions: Type the following personal letter, using any acceptable letter style with appropriate punctuation. (10 minutes)

(1) 60-space line margin

(2) Space down 13 times from top of page to begin typing the return address and date

(3) Space down 8 times from date to salutation

(4) Single space body of letter

(5) Space down twice after each paragraph

(6) Space down twice from body to complimentary close

1917 Wade Boulevard
Nashville, Tennessee 37258
(Current Date)

Dear Kathy, We certainly enjoyed having you and Richard over for dinner the other night. (Paragraph) Our new neighbors had a wonderful time, and it seemed everyone else did, too. The children really had a great time playing with our cat, didn't they? It was hard to tell who had the most fun; the cat has been sleeping all day today. (Paragraph) Marilyn and I are planning to go to the lake in two weeks. Maybe you two would like to come along. Think about it and call us a few days in advance if you can come along with us.

Level 1--Tabulation (Alternate Item)

Directions: (1) Center horizontally the longest line in body

(2) Center vertically on full sheet of paper

(3) Hand in when completed--you are through

(4) (10 minutes)

GEORGIA TOWNS

Glenmore

Sardis

Waycross

Augusta

Statesboro

Millen

Valdosta

Douglas

Tifton

Albany

Level 2--Timed Writing (Alternate Item)

The windows were five in all, of twelve panes each. They were placed 14
so low in the walls as to give full chance to the pupils to see each 27
traveller as he passed--and to be seen. The floor and ceiling were level, 42
and the walls were dobbed. 48

The school was seldom closed for a day or two; however, the teacher 61
and pupils were sometimes compelled to cut or saw wood to stop the closing 76
of the school. The wood was left in the road near the house, so that it 90
often was buried in the snow, or wet with rain. The fires were to be 104
started about half an hour before the time of starting the school. When 118
someone failed to build a fire, it would be very cold all the way to noon. 143
On the other hand, sometimes the warmth of a big fire made it just as bad. 157
Sometimes too, pupils were annoyed by smoke. 166

The winter school opened about the first week of December, and continued 181
for 12 to 16 weeks. The summer term started about the first of May. The 195
length of summer terms was three or four months. Later the time was 208
stretched to 20 weeks. 213

The teacher: Good moral character, and a master of the main subjects 227
was required. Most of them, both males and females, were from sixteen to 241
eighteen years of age, and a few, over twenty-one. 251

Until within a few years, no studies have been allowed in the day 264
school but spelling, reading, and writing. Math was taught by a few 278
teachers, one or two times in a week, but, in spite of the most determined 293
opposition, math is now allowed in the day school. 303

Level 2--Letters (Alternate Item)

Directions: Type the following letter, making one carbon and addressing an envelope. You may use any acceptable letter style, with appropriate punctuation style. Assume that (1) you are using letterhead paper and (2) the envelope has the return preprinted so that only the address need be typed. (10 minutes)

(Current Date) Mr. J. Fred Harper, 2413 Elm Street, Memphis, TN 37336
Dear Mr. Harper Thank you for giving International the duty to plan your trip abroad. We have arranged the trip in such a way that you will have more than a week to rest at home before returning to your work. (P) The plan enclosed gives you full details of the trip: August 3-5, Ireland; August 6-13, England; August 15-18, Germany; August 20-September 2, France; September 3, home. The days skipped are set aside for travel. (P) Because this is your first trip over, we wanted your trip by car to be easy. The big car shown in the schedule is yours at no extra cost. (P) May you have a good trip.
Sincerely yours Hal E. Robins, Travel Agent (your initials)

Level 2--Manuscript (Alternate Item)

Directions: (1) Type the following article in manuscript form, using a 60-space line (Pica) or a 70-space line (Elite)

(2) Leave a top margin of 1 and 1/2" on first page; 1" on other pages

(3) Leave a bottom margin of 1"

(4) (10 minutes)

THE BEST IS NEVER TOO GOOD

If all I have said be true, and I can see no flaw in it, then the prizes which are to be won on the machine, or, to put it another way, the dollars which are to be had from its use, must come from the speed of the operator and from little else. As a rule that is so and the salary will depend on the quantity of work turned out in a given time. (P) There is nothing that can be bought or sold that is not measured by the inch, the quart or the pound. If your neighbor does twice as much work as you do every day then he will get twice as many dollars for doing it. And when it comes to quality--well, fresh eggs and cold storage eggs vary in price, it is true, but at the outset you should make up your mind to eschew the cold storage stuff and sell nothing in the way of labor that is not first-class. The best is never too good, so if you are wise you will make out your price list on the basis that as you furnish the best goods you are entitled to the best price, the amount being strictly in accord with the quantity.

Level 2--Tabulation (Alternate Item)

Directions: Center horizontally and vertically on a full sheet of paper the following problem. Erase and correct all typing errors. Use double spacing. Leave 10 spaces between columns. Hand in when completed. (10 minutes)

TOWNS TO VISIT IN GEORGIA

(by Month)

Augusta	November
Thompson	December
Washington	February
Atlanta	November
Toccoa	February
Clayton	October
Dalton	October
Savannah	August
Waycross	January
Lakeland	September

Level 3--Timed Writing (Alternate Item)

We do not know which of the many roads to decay Crete chose; perhaps she took them all. Her once great fields of cypress and cedar vanished; today two-thirds of the land are a stony waste, incapable of holding the cold rains. Perhaps there too, as in most faining cultures, control of the number of people went too far, and the birth rate left to the failures. Perhaps, as wealth and luxury increased, the pursuit of the pleasures sapped the will of the race, and slowed its will to live or to defend itself; a nation is born stoic and dies epicurean. Maybe the fall of Egypt after the death of its king upset Creto-Egyptian trade and took away the wealth required trade, and markets for her industries; like modern England she was very dependent on the control of the seas. Perhaps war among her own destroyed the land's manhood, and left it unprepared for a war. Perhaps an earthquake shook great buildings into ruins, or a big war within avenged in a year of terror all the weight of the many years.

And yet the signs of Egyptian culture in Crete are in every age. The two cultures are at first so much alike that some think a wave of Egyptian people to Crete must have occurred. Let us think that in its racial birth the Cretan culture was of Asia, in many of its arts Egyptian; in essence and total it was one of a kind.

Level 3--Letters (Alternate Item)

Directions: Type the following letter, making one carbon and addressing an envelope. You may use any acceptable letter style, with appropriate punctuation style. Assume that (1) you are using plain bond paper, and (2) the envelope is plain, requiring the typing of both the return address and address. (10 minutes)

2012 South Bend Avenue, Knoxville, TN 37916 (current date)
Miss Teresa Giles, Central High School, Oliver, TN 37024. Dear Miss Giles Thank you very much for your letter and for requesting Mr. Johns to address the graduates at Central High on "Careers Day." We will be happy to; and Mr. Johns asked me to tell you he is looking forward to returning as one of your speakers. (P) Our leading new-car salesman for six months consecutively is Mr. A. J. Shaker, who is a graduate of Central High (graduated in 1965). He will be your guest, along with Mr. Johns. The application with both names of these gentleman is enclosed. (P) I was the operational officer on our first atomic submarine, the Nautilis. It is a wonderful career for a special kind of sailor. Maybe the graduating male students would like to hear more. If so, you may consider me for a guest next year. (P) Congratulations to Central graduates. Cordially yours
BROOKFIELD MOTORS President (your initials)

Level 3--Manuscript (Alternate Item)

Directions: (1) Type the following article in manuscript form, using a 60-space line (Pica) or a 70-space line (Elite)

(2) Leave a top margin of 1 1/2" on first page; 1" on other pages

(3) Leave a bottom margin of 1"

(4) Correct all errors

(5) (10 minutes)

Faith in Thyself

A few years ago a man wrote a book. He had never written one before, so far as I know, but he believed that he had a story to tell--it was locked up in his brain and he wanted to get rid of it--so he wrote it out and sent it to a publisher and sat down to await the result. He did not have to wait very long for his copy came back without loss of time and with it the usual printed form with thanks to the author for sending and an apology for not using the matter. But the man had faith in himself--something we all must have if we hope to win--and he also had faith in the work he had done. He knew the story of bruce and the spider and was willing to try again and to keep on trying to the end of the chapter if need by. So he kept that copy on its travels hoping to find somebody who would print it, and at last he did. At length the book was

Add side heading A Spark of Genius

printed and copies sent to the critics, as is the custom, and these later decided, honestly enough, that there was not much to praise in the story, as a story and that what there was in the way of a plot in it was weak and crudely put together, but--and in that "but" they showed their right to be called critics--that they saw in the book a spark of genius which might be fanned into quite a blaze on the end. A short time afterward the author died and before it had become known that he had won one of the big prizes in literature.

Level 3--Tabulation (Alternate Item)

Directions: Center horizontally and vertically on a full sheet of paper the following problem. Erase and correct all typing errors. Use double spacing. Hand in when completed. (10 minutes)

POPULAR WORDS

Adequate	banner	capture	difficult
example	finansa	granted	handful
insistent	judgment	knowledge	landlord
musical	nevertheless	outright	paramount
qualify	reviewed	sincere	supersede
tabulation	understood	vocation	wonderful
yourselves	zealous	yellow	leadership
itemized	hazardous	possessive	glossary
flattered	encourage	creative	benefactor
assurance	classify	harmful	overturn

Level 4--Timed Writing (Alternate Item)

In every great crisis of violence or corruption in our great land, 13
man tends either to turn away from it in cynicism or blame it on the 27
moral decline of the land as a whole. It is an old habit in our land: 41
We either forget or bleed. 46

Still, at the start of a new school year, when even Washington is 59
just getting the first sweep of cool clear autumn air, one asks if we 73
could not have a lot more honest discussion in our land on how all these 87
strange things happened, and what, if anything, they mean in our values 102
and ideas. 104

This was the big question. And the main question was why so many 117
people felt isolated, pointless, and even helpless, and whether it was 131
possible or useful to plan ways of talking, not only about legislation to 145
avoid violence and corruption, but about the morals and values, and the 160
philosophical underpinnings of the whole thing. 169

The sad thing is that all this sincere and careful study of our 182
problems does not seem to lead anywhere. The people are left with the 196
politicians and the reporters and the editorial writers and the thoughtful 211
people at foundation meetings who do the best they can but in the end do 225
not really answer the questions they raise. 234

While the American people today do not believe in the old ways, and 247
are confused by all this vague debate, they believe in believing in the 261
old values and yearn for some better way to escape from the isolation and 276
importence that troubles their lives. 283

Level 4--Letters (Alternate Item)

Directions: Use any acceptable letter style, with appropriate punctuation style. Type an envelope and carbon copy. Put dates and names (paragraph 2) in tabular form. These instructions are incomplete--certain decisions for typing this letter appropriately are left to you. (10 minutes)

Mr. Allan L. Logan, President, Atlantis Electronic Corporation, Memphis, TN 37335 Dear Mr. Logan, Subject: Management Trainee Seminar. We thank you very much for requesting our help in providing your firm with management consultants for your seminar. (P) Two of our professors can be available on August 2-5 to speak to your trainees. Professors Tom Hawes and Ed Jones are highly trained for this assignment. Both men have management experience in industry, as well as educational training in industrial management. Their schedule permits the following plan: August 2, Hawes; August 3, Jones; August 4, Hawes; August 5, Jones. Is this schedule all right with you? (P) I have informed Professor Hawes and Professor Jones that your firm will pay $100 to each of them for conducting the seminars. They will contact you within the next week. (P) Thank you for inviting our university to participate in your management seminar. We hope you will call on us again. Sincerely yours, Raymond L. Smithson, Dean (your initials)

Level 4--Manuscript (Alternate Item)

Directions: (1) Assume that the manuscript is to be bound on the left side of paper

(2) Leave a top margin of 1 1/2" on first page; 1" on other pages

(3) Leave a bottom margin of 1"

(4) Type footnotes at the bottom of the pages

(5) (10 minutes)

Vocational Subjects Offered in High Schools by Patty Glover Campbell

Office education, a type of vocational education, enrolls more high school students than all other types of vocational education combined. The preparation of stenographers, typists, and clerical workers is vocational education. The largest percentage of students who are preparing for office work is to be found in high schools. The United States Department of Labor has estimated that by 1970, 12.8 million Americans will be working in this occupation group.[1] (P) Edward A. Krug, in The Secondary School Curriculum, states that an important part of human achievement in skill and knowledge is transmitted by the business field. This field is important in intellectual content and is indispensable in human affairs. The place of business education in vocational preparation, he feels, is assured.[2] (P) Today's culture, with its increased demands on young people, has produced a large number of teenagers who do not keep pace with the regular school program. Some schools are apparently trying to offer the traditional courses and the newer courses as well. As nearly 50 percent of the student body may end up as dropouts, the mass production program of education may not be reaching all students. Therefore, some educators apparently feel that public education should try to develop and offer programs to meet the needs of all youth.[3]

[1]Bernard A. Shilt, "Office Education, A Partner in Vocational Education," American Vocational Journal, XL (March, 1965), 21.

[2]Edward A. Krug, The Secondary School Curriculum (New York: Harper and Brothers, 1960), p. 467.

[3]Eugene P. Whitney, "A Program for Students with Special Needs," The Journal of Business Education, XLIII (October, 1967), 6.

Level 4--Typing Numbers in Context (Alternate Item)

Directions: (1) Do not start--Your teacher will signal to start

(2) Space down 16 single spaces from top of the paper

(3) Set left margin at 13 for Pica, 22 for Elite

(4) Set tab stops--Pica: 32, 47, 66
Elite: 41, 56, 75

(5) Do not erase--if you make an error, start over on new sheet

(6) (3 minutes)

marketing	23.75	hands	49.96
face	39.82	professor	56.31
submitted	65.91	maximum	31.48
error	74.96	provides	26.29
hotel	47.19	actually	35.86
concerned	59.62	phone	21.47
selected	17.98	prove	49.53
refer	32.49	whatever	86.27
checked	68.31	accident	14.73
inventory	49.56	inform	52.89
permit	32.75	presented	64.58
privilege	54.36	sorry	37.92
seeing	68.41	American	91.03
medical	53.87	toward	67.24
funds	24.06	process	79.86
specified	78.95	warehouse	20.34

Level 4--Tabulation (Alternate Item)

Directions: Use a full sheet of paper for typing the following problem in acceptable form. Erase and correct all typing errors. Use double spacing. Leave 6 spaces between columns. Hand in when completed. (10 minutes)

AREA SCHOOL CONFERENCES (1974)

State	City	Region	Date
Florida	Daytona	5D	March 1
Georgia	Athens	50E	March 8
California	San Diego	51C	April 5
Tennessee	Nashville	21F	April 12
North Dakota	Bismark	46H	March 15
Oregon	Portland	40J	March 22
Nevada	Las Vegas	37R	April 19
Vermont	Concord	27K	April 26
New York	Albany	28T	March 29
Kentucky	Frankfort	19S	March 12

6. CODING SHEET FOR COMPUTER ANALYSIS

Description		Columns
Student Number		1-2
Student Name		3-22
School Identification 01-49 Secondary Schools 50-99 Colleges		23-24
Typewriting Level 1 Semester 1 2 Semester 2 3 Semester 3 4 Semester 4 5 VOE 6 Quarter 1 7 Quarter 2 8 Quarter 3 9 Quarter 4		25
Test Form Levels (Lower) Test Form Levels (Upper) Level 1 through 4 Form A or B		26, 28 27, 29
	First Level	Second Level
Timed Writing Speed Errors Score	 31-32 35-36 39-40	 33-34 37-38 41-42
Letter Score	43-45	46-48
Tabulation Score	49-51	52-54
Manuscript Score	55-57	58-60
Number Typing Score		61-63

5. TEACHER'S COMMENTS ON PILOT TESTING PROGRAM

1. How much instruction should be given the student before administering the performance tests?

2. How much preparation is the student allowed before timing begins?

3. The time allotted is not indicated on all problems (times were given in Instructions to Teachers).

4. Is each segment of each level of test to be timed separately?

5. Should the students start over if they complete the problem within the time allowed? (The tabulation problem was particularly short and students had time left to get ready for the next item.)

6. What method of correcting errors on the problems should be followed?

7. Should students be allowed to figure speed and errors on Timed Writings?

8. Should students be given a warm-up Timed Writing before the initial Timed Writing?

9. Should Level 1 students be required to answer all items on the Objective tests?

10. How much instruction should be given to the student after testing begins?

APPENDIX D

CRITERIA FOR SCORING PERFORMANCE TESTS

1. PROFESSIONAL GROUPS

Group A

Professor George A. Wagoner
Professor Helen Henry
Katherine Lasater, VOE Regional Supervisor
Gilbert Harrison, VOE Regional Supervisor

Group B

Professor George A. Wagoner
Professor Helen Henry
Professor Helen Petree
Professor Patty G. Campbell

Group C

Professor George A. Wagoner
Professor Helen Henry

Group D

Professor George A. Wagoner
Professor Helen Henry
Professor Helen Petree
Professor Patty G. Campbell
(Secondary School Teachers: 6 teachers from Middle Tennessee, 2 from East Tennessee, and 2 from West Tennessee)

2. EVALUATION FORM

Letters

1. Incorrect or Inappropriate Letter or Punctuation
   Level 1 _____ Level 2 _____ Level 3 _____ Level 4 _____

2. Poor Letter Placement--3 Spaces Horizontally/6 Spaces Vertically
   Level 1 _____ Level 2 _____ Level 3 _____ Level 4 _____

3. Uneven Line Length--Longest/Shortest Line, 7 Spaces
   Level 1 _____ Level 2 _____ Level 3 _____ Level 4 _____

4. Incorrect Typing of Letter Parts--Placement, Style, Omission, Spacing After
   Level 1 _____ Level 2 _____ Level 3 _____ Level 4 _____

5. Omission of Carbon Copy
   Level 1 _____ Level 2 _____ Level 3 _____ Level 4 _____

6. Failure to Make Corrections on Carbon Copy--Discrepency in Dates, Amounts, etc.
   Level 1 _____ Level 2 _____ Level 3 _____ Level 4 _____

7. Failure to Make Corrections on Carbon Copy--Does Not Alter Meaning of Letter
   Level 1 _____ Level 2 _____ Level 3 _____ Level 4 _____

8. Omission of Envelope
   Level 1 _____ Level 2 _____ Level 3 _____ Level 4 _____

9. Poor Placement of Address on Envelope--3 Spaces Horizontally/Vertically
   Level 1 _____ Level 2 _____ Level 3 _____ Level 4 _____

Tabulation

10. Poor Horizontal Centering of Problem--3 Spaces Off Permitted
    Level 1 _____ Level 2 _____ Level 3 _____ Level 4 _____

11. Poor Vertical Centering of Problem--3 Spaces Off Permitted
    Level 1 _____ Level 2 _____ Level 3 _____ Level 4 _____

12. Incorrect Typing of Table Parts--Centering, Capitalization, Spacing After
    Level 1 _____ Level 2 _____ Level 3 _____ Level 4 _____

13. Incorrect Vertical Spacing In Body--Per Instructions
Level 1 _____ Level 2 _____ Level 3 _____ Level 4 _____

14. Incorrect Spacing Between Columns--Per Instructions
Level 1 _____ Level 2 _____ Level 3 _____ Level 4 _____

Manuscripts

15. Incorrect Format--Deviation From Margins Per Instructions (Left Bound, etc.)
Level 1 _____ Level 2 _____ Level 3 _____ Level 4 _____

16. Uneven Line Length--Longest/Shortest Line, 7 Spaces
Level 1 _____ Level 2 _____ Level 3 _____ Level 4 _____

17. Poor Vertical Placement of Problem--One-Page Manuscript
Level 1 _____ Level 2 _____ Level 3 _____ Level 4 _____

18. Incorrect Typing of Headings/Subheadings--Centering, Placement, Spacing After
Level 1 _____ Level 2 _____ Level 3 _____ Level 4 _____

19. Incorrect Typing of Footnotes--Placement, Content, Spacing To and From
Level 1 _____ Level 2 _____ Level 3 _____ Level 4 _____

20. Incorrect Vertical Spacing in Body--Per Instructions
Level 1 _____ Level 2 _____ Level 3 _____ Level 4

Miscellaneous

21. Poor Erasure--Uncorrectable
Level 1 _____ Level 2 _____ Level 3 _____ Level 4 _____

22. Poor Erasure--Correctable Without Retyping
Level 1 _____ Level 2 _____ Level 3 _____ Level 4 _____

23. Incorrect Word Division
Level 1 _____ Level 2 _____ Level 3 _____ Level 4 _____

24. Incorrect Interpretation of Proofer's Marks--Uncorrectable
Level 1 _____ Level 2 _____ Level 3 _____ Level 4 _____

25. Incorrect Interpretation of Proofer's Marks--Correctable Without Retyping
Level 1 _____ Level 2 _____ Level 3 _____ Level 4 _____

26. Incorrect Interpretation of Proofer's Marks--Trivial Error, Leave Alone
Level 1 _____ Level 2 _____ Level 3 _____ Level 4 _____

Major Error--Uncorrectable, Must Retype Problem

Intermediate Error--Correctable Without Retyping Problem

Minor Error--Insignificant, Trivial, Do Not Bother To Retype or Correct

Examples of Typographical Errors

	Level
Misspelled Word	
Failure to Capitalize Word/s	
Strike-over	
Raised Capital	
Transposition of Words	
Omission of Word/s, Line/s	
Typewriting Same Word or Line Twice	
Extra Space Between Words	
Uneven Left Margin--Twice	
Uneven Left Margin--More	
Failure To Capitalize	
Omitted Hyphen	
Spaces Within Words	
Uneven Typewriting of Letter Within Words	
Uneven Touch--Light/Dark Characters	
Incorrect Spacing After Punctuation Marks	
Typewriting on Back of Original	
Failure To Space Between Words	
Typewriting in Space Between Columns	

3. CRITERIA FOR SCORING

Error Description:

Major (Ma) = Uncorrectable, problem must be retyped
Intermediate (Int) = Correctable without retyping problem
Minor (Mi) = Would not error to be corrected

Letters

Incorrect typing of letter or punctuation style (Ma)

Poor letter placement--horizontally/vertically, over 6 spaces (Ma)

Uneven line length--longest/shortest line, over 9 spaces (Ma)

Incorrect typing of letter parts--placement, style, omission, spacing after (Ma)

Omission of carbon copy (Ma)

Failure to correct carbon copy, resulting in
serious error (Ma)
trivial error (Mi)

Omission of envelope (Ma)

Poor placement of address on envelope--horizontally/vertically, over 6 spaces (Int)

Tabulation

Poor horizontal centering of problem, over 6 spaces (Ma)

Poor vertical centering of problem, over 6 spaces (Ma)

Incorrect typing of table parts--centering, capitalization, spacing after (Ma)

Failure to use correct spacing in body (single, double) per instructions (Int)

Incorrect spacing between columns, over 2 spaces

Manuscript

Incorrect format--deviation from margins (left bound, etc.) per instruction (Ma)

Uneven line length--longest/shortest line, over 9 spaces (Ma)

Poor vertical placement of one-page manuscript, over 6 spaces (Ma)

Incorrect typing of headings/subheadings--centering, placement, spacing after (Ma)

Incorrect typing of footnotes--placement, content, spacing to and from:
uncorrectable (Ma)
correctable (Mi)

Failure to use correct spacing in body (single, double) per instructions (Ma)

Miscellaneous Errors

Poor erasure--uncorrectable (Ma)

Erasure--correctable without retyping (Int)

Incorrect word division (Ma)

Error in interpretation of proofer's mark:
uncorrectable (Ma)
correctable (Int)

Error resulting from machine malfunction (NOT COUNTED)

Examples of Typographical Errors

Misspelled Word (Intermediate)

Failure to Capitalize Word/s (Intermediate)

Incorrect Capitalization of Word/s (Intermediate)

Strike-over (Intermediate)

Raised Capital (Intermediate)

Transposition of Words (Intermediate)

Omission of Word/s, Line/s (Major)

Typing Same Word or Line Twice (Major)

Extra Space Between Words (Minor)

Uneven Left Margin--Twice (Minor)--More (Major)

Failure to Capitalize (Intermediate)

Omitted Hyphen (Intermediate)

Spaces Within Words (Intermediate)

Uneven Typing of Letter Within Words (Intermediate)

Uneven Touch--Light/Dark Characters (Major)

Incorrect Spacing After Punctuation Marks (Minor)

Typewriting on Back of Original (Major)

Failure to Space Between Words (Intermediate)

Typing In Space Between Columns (Major)

VITA

Ivey Chance was born in Waynesboro, Georgia, on November 28, 1933. He later moved to Ware County, Georgia and graduated from Manor High School, Manor, Georgia, in 1952. The following September he entered Young Harris Junior College, Young Harris, Georgia. After four quarters, he transferred to Georgia Southern College, Statesboro, Georgia, where he received his Bachelor of Science degree in 1959. From 1954 to 1958, he served in the U.S. Navy in Radio Communications, receiving an honorable discharge as Radioman Second Class, U.S. Navy Reserve, in 1962.

In December, 1954, he received the Master of Science degree from The University of Tennessee. His teaching experience includes five years at the secondary school level and nine years at the college and university level at Berry College, Abraham Baldwin College, and Middle Tennessee University.

Mr. Chance is married to the former Marilyn Zazzi of Tullahoma, Tennessee. Their son Bill is 11 years old and their daughter Kimberly is eight years old.