ABSTRACT

AN ANALYSIS AND COMPARISON OF THE SHORTHAND SECTION OF THE CIVIL SERVICE STENOGRAPHIC EXAMINATIONS AND PUBLIC HIGH SCHOOL BUSINESS TEACHER SHORTHAND TESTS

by Mildred L. Williams

Purpose of the Study

The purposes of this study were threefold: (1) to analyze and compare State Civil Service stenographic tests and testing practices with those of public high school teachers of advanced shorthand and transcription; (2) to analyze and compare statistically the difficulty level of the shorthand sections of State Civil Service entry-level examinations and the difficulty level of tests given by public high school teachers of advanced shorthand and transcription; and (3) to determine the statistical relationship, if any, between student performance on a conventional, teacher-type dictation test and on a State Civil Service nondictation type of test.

Procedures

The normative survey method was used to gather pertinent information from Civil Service Commissions and from business teachers. A questionnaire was developed and mailed to 50 State Civil Service Commissions, together with a request for a recent copy of the entry-level dictation materials used for testing purposes. A second questionnaire was designed and mailed to 500 randomly selected public high school teachers of advanced shorthand and transcription.

A percentage analysis was then made of the replies of each group. Comparisons were made of these percentage analyses to determine the similarities and differences which existed.

The syllabic intensities of selected tests of both groups were calculated and then compared statistically to determine whether there was a significant difference in difficulty between the tests of the two groups.

Another statistical comparison was made of the scores of students who took both the nondictation Civil Service test and a teacher-type, orally dictated shorthand test.

Findings

The typical State Civil Service Commission entry-level shorthand test consisted of a 3-minute test, orally dictated at the rate of 80 words per minute with a transcription period of either 3 minutes or 20 minutes to produce a typewritten transcript. The accuracy level was determined by a formula or a range of percentages. However, two populous states used a nondictation test with a fill-in type of transcript and several states used a fill-in transcript in conjunction with orally dictated tests. Testing practices of the states revealed that they were administratively oriented.

A profile of the fourth-semester public high school advanced shorthand and transcription teachers' tests was somewhat similar to the states' tests in that the tests were orally dictated for a period of either 3 minutes or 5 minutes at the rate of 120 words per minute for an A grade to 80 words per minute or less for a D grade. The transcription period allowed was 30 to 35 minutes to produce a typewritten transcript at the 95 percent accuracy level.

The mean difficulty level of 1.56 syllabic intensity for State Civil Service stenographic tests was statistically significantly higher at the .01 level of

significance than the mean difficulty level of 1.46 syllabic intensity for teacher-type tests.

A Spearman Rank correlation coefficient of .60 at the .001 level of significance was obtained as a result of a comparison of scores of public high school students who took both a traditional, teacher-type, orally dictated test and a State Civil Service nondictation shorthand test.

Conclusions

The following conclusions were drawn from an analysis of the findings of the study:

Stenographic testing standards and practices used by State Civil Service Commissions are not out of harmony with the recommendations of educational authorities with testing standards and practices which teachers are using in the classroom.

With respect to the difficulty of dictation materials as measured by syllabic intensity, teachers' tests tend not to be as difficult as the Civil Service tests. However, since many other aspects of the tests and testing practices appear to be comparable, it should not be construed that Civil Service tests are more difficult than teachers' tests in all respects.

Mildred L. Williams

High school stenographic students who do well on the orally dictated, teacher-type shorthand dictation tests will tend to do equally as well on a State Civil Service nondictation type of shorthand test.

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By

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CHAPTER I

INTRODUCTION AND STATEMENT OF THE PROBLEM

I. INTRODUCTION

Many high school business teachers are of the opinion that State Civil Service stenographic tests and testing techniques are different from the tests and testing techniques that teachers use in the classroom. Such teachers could play a more effective role in preparing students to qualify for State Civil Service stenographic examinations if they were more fully aware of the types of tests and testing procedures used by state governments.

There is a need for research to give teachers definite and detailed information concerning the Civil Service tests and testing procedures. The questionnaire survey method offers a feasible way of evaluating the testing practices of the business teachers and of the State Civil Service Commissions.

A study of this nature should prove helpful to both teachers and State Civil Service Commissions.

II. Statement of the Problem

Purposes of the Study

The purposes of this study were threefold:

1. To analyze and compare the State Civil Service testing procedures and tests with those of selected public high school business teachers of advanced shorthand and transcription with regard to type and form of test, the difficulty of the dictation material used, the methods used for scoring tests, and the minimum standards required.
2. To analyze and compare statistically the difficulty level of the shorthand sections of the State Civil Service entry-level examinations and the difficulty level of selected public high school shorthand tests.
3. To determine statistically the relationship, if any, between student performance on conventional teacher-type dictation tests and student performance on a selected State Civil Service non-dictation type of shorthand test.

Answers to these questions were sought:

1. Are there variations in the type and form of shorthand tests used by State Civil Service Commissions? If so, how do they vary?

2. Are there variations in the type and form of shorthand tests used by public high school teachers of advanced shorthand and transcription? If so, how do they vary?
3. What differences exist, if any, between the type and form of shorthand tests used by State Civil Service Commissions and those used by public high school teachers of advanced shorthand and transcription?
4. What scoring and testing methods are used in State Civil Service examinations?
5. What scoring and testing methods are used by public high school teachers of advanced shorthand and transcription?
6. What differences, if any, exist between the scoring and testing methods used by State Civil Service Commissions and those used by public high school teachers of advanced shorthand and transcription?
7. Are the scoring and testing methods used in the shorthand tests of the State stenographic Civil Service examinations and those used by public high school teachers of advanced shorthand and transcription in the selected schools in line with recent research in shorthand testing and scoring?

8. How is the dictation material prepared and selected for the shorthand dictation tests which are given in the classroom by public high school teachers of advanced shorthand and transcription in the selected schools?
9. How is the dictation material prepared and selected for the shorthand dictation tests which are given as a part of the State Civil Service stenographic examinations?
10. What differences, if any, exist between the methods used for preparing and selecting shorthand dictation tests by State Civil Service Commissions and the methods used by public high school teachers of advanced shorthand and transcription?
11. What is the difficulty level as measured by syllabic intensity of the shorthand portion of the State Civil Service stenographic examinations?
12. What is the difficulty level as measured by syllabic intensity of the shorthand dictation tests used by public high school teachers of advanced shorthand and transcription?
13. What statistical difference, if any, exists between the syllabic intensity of the orally dictated shorthand tests used by public high school

teachers of advanced shorthand and transcription and the syllabic intensity of the shorthand portion of the stenographic examinations used by the State Civil Service Commissions?

14. What are the minimum standards required by State Civil Service Commissions for the State Civil Service stenographic examinations?

15. What are the minimum standards required by public high school teachers of advanced shorthand and transcription in the classroom?

16. What differences, if any, exist between the standards required by State Civil Service Commissions as a part of the State Civil Service stenographic examinations and the standards required by public high school teachers of advanced shorthand and transcription in the classroom?

17. What conclusions can be drawn from this study and what recommendations can be made to State Civil Service Commissions and to teachers of advanced shorthand and transcription with regard to the evaluation of testing for competency in shorthand?

18. Will a selected group of high school students perform as well on a nondictation type of Civil Service shorthand test as on a selected, conventional teacher-type test?

Hypotheses to be Tested

There were three hypotheses proposed.

The first one was a nonstatistical hypothesis which was subject to a percentage analysis.

Hypothesis:

The majority of State Civil Service stenographic examinations will differ markedly from the public high school classroom advanced shorthand and transcription teachers' tests with regard to the type and form of test, the type of transcript required, the time allowed for transcription, the scoring methods used, and the related areas tested.

The second and third null hypotheses were tested statistically.

Hypothesis:

There will be no statistically significant difference between the difficulty level as measured by syllabic intensity of the shorthand portion of the State Civil Service stenographic examinations and of selected public high school classroom shorthand dictation tests.

Hypothesis:

There will be no statistically significant difference between the performance of a group of students from specified high schools on a nondictation State Civil Service shorthand test and on a selected teacher-type classroom shorthand dictation test.

Procedures

The normative survey method was used to gather information from the Civil Service Commissions and from the business teachers included in the study.

A questionnaire concerning testing procedures, test material selection, scoring methods, and standards was developed and mailed to 50 State Civil Service Commissions. A request was also made for a recent copy of the shorthand portion of the entry-level State stenographic examinations.

A second questionnaire was designed and mailed to 500 randomly selected advanced shorthand and transcription teachers in public high schools. Questions were asked relating to the tests and testing practices of these teachers.

A percentage analysis was then made of the replies from the Civil Service Commissions and the replies of the teachers. Comparisons were made of these percentage analyses to determine the similarities and differences which existed between the tests and testing techniques of the two groups.

The syllabic intensity of the shorthand tests used by the Civil Service Commissions and the syllabic intensity of the shorthand tests used by teachers were compared statistically to determine whether there was a

significant difference in the difficulty level between the tests of the two groups.

Another statistical comparison was made of the scores of a group of students who took both the nondictation Civil Service test and the teacher-type, orally dictated shorthand test.

Importance of the Study

High school business educators have been apprehensive and quite often unfamiliar with State Civil Service stenographic entry-level requirements. Teachers have wondered whether classroom training has been sufficient to enable recent graduates to pass Civil Service examinations.

The importance of this study was to gather information concerning the testing practices of State Civil Service Commissions and to relate this information to the testing practices of public high school and transcription teachers. It was anticipated that as a result of the findings of this study a better understanding of the stenographic tests and testing techniques of both groups would emerge. Furthermore an experiment comparing students' performance on a Civil Service nondictation, fill-in transcript test with their performance on a teacher-type dictated, complete typewritten transcript test should result in meaningful information concerning testing procedures.

Definition of Terms

The following terms are defined according to their usage in this study:

Advanced shorthand.--Advanced shorthand is the second year of the study of shorthand given in the public high schools after all of the shorthand theory has been taught in previous classes.

Transcription.--Transcription is the process of typing correspondence or other documents in proper form from shorthand notes.

Teacher-type test.--The teacher-type test refers to the timed, orally dictated shorthand test which is transcribed at the typewriter.

Oral dictation.--Oral dictation is any verbal dictation. It is an even flow of dictation used for testing purposes with words counted and timed.

Office style dictation.--Office style dictation is dictation practiced in the classroom which approximates the mode of expression used by many businessmen. Characteristics of this dictation are hesitations, repetitions, corrections, and variations in speed.

Printed dictation.--Printed dictation, sometimes known as nondictation, consists of dictation materials prepared in printed form from which the individual writes shorthand notes and later transcribes.

Syllabic intensity.--Syllabic intensity is a measurement of the difficulty of dictation materials that is computed by counting the total number of syllables in a given article and dividing it by the total number of actual words.

Standard word.--The standard word is a device used for equalizing the difficulty of shorthand dictation materials. It is computed by allowing every 28 syllables to equal 20 standard words.

Performance test.--A performance test is a type of test in which a student or job applicant is asked to demonstrate the activity to be performed in a business situation. The test requires reasoning ability as well as knowledge of the subject matter.

The Silverthorn list[1].--The Silverthorn list is a list of the 5,000 most frequently used words in business writing. It is divided into groups of 100 words with these groups arranged in the order of their frequency from 1 to 50.

The researcher.--The researcher is the author of the study.

Markedly different or marked difference.--The terms markedly different or marked difference are used as

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[1]J. H. Silverthorn, Word Division Manual for the Basic Vocabulary of Business Writing (Cincinnati: South-Western Publishing Co., 1958.

criteria in connection with the first hypothesis of this study. They are descriptive terms used in comparing the various test characteristics and are said to exist whenever the majority of the replies of the states and teachers are in direct opposition to each other on any test item or particular.

Delimitations of the Study

This study was delimited to the evaluation of the entry-level tests and requirements of the stenographic examination of the Civil Service Commissions of 49 states. One state was not included in this study for it did not reply to the correspondence mailed to it.

The statistical comparison made of the difficulty level as measured by syllabic intensity of the shorthand tests of the Civil Service Commissions and of the shorthand tests of public high school advanced shorthand and transcription teachers was delimited to 38 states of the total 49 states. Only 38 states supplied the shorthand portion of their State Civil Service stenographic examination; therefore, only 38 states were involved in the analysis. There were 49 states, however, who replied to the questionnaire with regard to testing practices.

The sample used in the testing experiment was composed of 93 senior high school students from 8 high

schools located within a geographical area in and surrounding Lansing, Michigan. These students had taken the State of Michigan Civil Service entry-level stenographic examination one week prior to taking the teacher-type test dictated by the researcher.

III. Organization of the Study

This study is organized in the following manner:

Chapter I presents the purpose of the study and the questions to which answers were sought, together with a statement of the importance of the study and the hypotheses to be tested. Chapter II contains a review of the pertinent literature related to this study. Chapter III describes the methods and procedures used. Chapter IV contains an analysis and presentation of the data concerning State Civil Service tests and testing techniques, and a statistical comparison of the shorthand portion of the State Civil Service entry-level stenographic tests with advanced shorthand and transcription teachers' tests. Chapter V presents an analysis and presentation of the data concerning public high school advanced shorthand and transcription tests and testing techniques used by public high school teachers.

Chapter VI presents an analysis of the similarities and differences between State Civil Service tests and testing techniques and those of selected public high school advanced shorthand and transcription teachers. Chapter VII

includes a statistical analysis and comparison of the performance of 93 students on an orally dictated teacher-type test and a Civil Service nondictation type test.

Chapter VIII contains the summary, conclusions, and recommendations.

CHAPTER II

REVIEW OF THE LITERATURE

The review of the literature is concerned with three facets:

I. What are the findings of recent research studies which contribute to a better understanding of the shorthand testing process?

II. What are the problems encountered and the trends observed in the testing procedures used by State Civil Service Commissions?

III. What basis of reconciliation, if any, exists between the diverse goals of high school business educators and Civil Service Commissions; namely, the use of testing by the teachers as a vehicle to stimulate quality performance and the use of testing by the State Civil Service Commissions as a means of selecting the best qualified candidate from a heterogeneous group of job applicants?

PART I

Findings of Recent Research Studies Which Contribute to a Better Understanding of the Shorthand Testing Process

This part of the review of the literature is arranged in four categories: (1) studies concerning validity and reliability of objective tests, (2) studies in the problem of difficulty measurement, (3) studies in transcription standards, and (4) studies concerning innovative testing practices that could be adapted to the classroom.

Studies Concerning the Validity and Reliability of Objective Tests

It was surprising to note that only a small amount of research has been reported on this topic.

The Phillips Study[2]

Phillips, one of the most recent researchers in this area, said that there was an urgent need for an objective-type shorthand-transcription test that could be used in education, business, and government. She pointed

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[2]Priscilla Moulton Phillips, "Development and Validation of an Objective Shorthand-Transcription Achievement Test," (unpublished Doctoral dissertation, Boston University, Boston, 1965).

out that an objective test possesses several advantages, such as vocational placement, comparison of shorthand and transcription achievement of the students on the secondary level, or placement of the shorthand student transferring from one school to another. Of particular interest to the researcher was Phillips' recommendation that objective tests could be developed to measure classroom achievement. She discussed this in general terms but did not show how they could be adapted specifically for effective classroom use for speedbuilding achievement tests.

Her contribution was the development of a machine-scored shorthand achievement test for use in the second year of shorthand instruction on the secondary level.

Phillips constructed business letters using a controlled vocabulary consisting of words selected from Silverthorn's word list.[3] She perfected her test first by instructing teachers to dictate her letters verbatim at 80 words per minute to a group of students. Then by choosing a few of the incorrect responses, she revised the letters to be used for the objective test. The test itself included multiple-choice and alternate response items which could be machine-scored, based upon the student's shorthand notes taken from dictation by the testee. This

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[3]Silverthorn, op. cit.

objective test was given to 304 students at 80 words per minute. The students marked an IBM machine-scored answer sheet, and the responses were then analyzed for discrimination index and difficulty level. These findings were incorporated into revised business letters by substituting selected words which met the criteria standards. The final form of the test was administered within a two-week period to 415 students by 27 teachers in 20 schools and correlated with the results of the well-known Turse-Durost shorthand achievement test (fill-in type) given to the same students.

Phillips explained that the Turse-Durost Shorthand Achievement Test (copyrighted 1941), a terminal test for first and second year students, has been the accepted measurement tool among all known existing shorthand objective achievement tests. It is the most widely used. This test purports to measure three areas: shorthand, penmanship, and language. The dictation material is orally dictated to the student. Then the student completes a booklet of multiple-choice information from her notes. The dictation material is not controlled. It is not taken from a particular word list and is not measured for difficulty of material or word frequency count, nor is the dictation speed controlled. Various speeds are found within a dictated letter. In contrast, in Phillips

experimental test, these factors were controlled. In fact her test was designed to overcome some of the deficiencies of the Turse-Durost Test. For instance, her test covered shorthand, spelling and punctuation. She felt it was more nearly akin to actual work conditions.

Phillips concluded that her final form test and the Turse-Durost Test, to a large extent, measured the same area. The correlation coefficient between the two was .69, which Phillips said was far from perfect, for the reason that these tests were designed to measure similar but different areas, as noted above. Therefore, perfect correlation could not be expected. But, nevertheless, she felt that the validity of her final form test in comparison with the Turse-Durost Test had been established.

It should be noted that her final form test was dictated at only 60 words per minute. The reason for this low speed was that it was early in the third semester; therefore, it was felt that students were not ready for a higher speed. However, Phillips discovered a total of 169 longhand notes written among the shorthand students' notes indicating that the test was probably given at too low a speed. She said that even though the test was of average difficulty, the more capable students were not challenged; therefore, she recommended further study should be conducted to determine the advisability of increasing the

speed and retesting the test. The researcher agrees with this recommendation. Because of the above factor, the lack of closer similarity between the two tests and the dearth of evidence from other sources, the researcher feels that there is need for more research to establish conclusively the validity of objective tests.

Apparently Phillips was unaware of the Hammond study, which was completed about the same time and the practices of the States of California, Michigan, and several other states. In her bibliography she mentioned the Calder study, but makes no reference to it. She did say that the Hiett Simplified Shorthand test (see page 27) first published in 1938, was considered inadequate in terms of the statistical data concerning it. She cited a Master's thesis by Martocchio[4] who developed a modified form of the Turse-Durost test which was statistically highly correlated to the original Turse-Durost Test. She cited the United States Civil Service Test, AN 2400R2 objective type test (1951) but she was unable to gain any statistical information concerning its validity or reliability. She did not mention the Otis and Laurent test

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[4]Bernadette Martocchio, "An Experimental Study to Determine the Comparative Validity and Reliability of Two Methods for Measuring Shorthand Achievement," (unpublished Master's thesis, Boston University, Boston, 1949), p. 27.

(see page 54), or the Schoetke test (see page 55), or the United States Employment Service Test No. 11 (see page 60).

The Hammond Study[5]

Hammond conducted a study in college transcription classes in which scores on traditional, oral dictation tests were compared with printed dictation (non-oral) tests. In this study, the two selected transcription classes (Section I and Section II) were taught in the same way by the same instructor.

Two three-minute oral dictation tests were given to both classes of students during the first and third weeks of the study. After a brief warm-up period, the first test was dictated at a speed of 120 words per minute, and the second at a speed of 100 words per minute. Students were allowed a period of 25 minutes to transcribe the better of the two tests and correct their transcripts. A transcript of the orally dictated material was supplied by the instructor to use in correcting transcripts.

During the second and fourth weeks, printed (non-oral) dictation tests were given to the same students. The content of the printed dictation test was the same as

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[5]Karen Joyce Hammond, "A Comparison of the Shorthand Achievement on Tests Administered by Oral and Printed Dictation," (unpublished Master's thesis, Brigham Young University, Provo, 1963).

the orally dictated one. Tests were composed of specially constructed typewritten materials arranged in two columns and triple-spaced to allow the students to write shorthand notes below the printed material on a special type of tracing paper overlaying the typewritten sheet. Students were instructed to copy in shorthand from the printed material for three minutes as rapidly as possible. The same transcription period of time was allowed as for the oral dictation test for transcribing shorthand notes appearing on the tracing paper and for correcting transcripts. (The printed dictation tests gave one minute more of printed dictation materials than the oral dictation tests allowed.) Printed dictation tests were always given the week following the oral dictation test and a total of four tests of each type were administered to both classes during the semester.

Both types of tests were evaluated in the same manner with errors counted for misspelled words, punctuation, typographical mistakes, and errors in transcription. Scores of tests were computed on syllables in correct words transcribed, rather than correct words per minute.

The statistical treatment used to determine the difference in achievement on the two methods of testing was the coefficient of correlation, computed by the Pearson Product Moment formula. Scores on the first test (oral dictation) were compared with scores on the same test

(printed dictation), which was given one week later, for each class followed by a comparison of scores for each of the second, third, and fourth tests in each of the classes. A comparison of the significance of the difference in achievement of the two methods of testing was made by determining the critical ratio.

The following findings were reported:

1. The coefficients of correlation found by comparing the scores on both types of tests 1, 2, 3, and 4 for the students in the Section I class were .449, .598, .605, and .267 respectively.
2. The coefficients of correlation on the same tests for the students in the Section II class were .120, .738, .651, and .796 respectively.

Hammond, therefore, concluded that in the interest of administering one shorthand test which would give a precise measurement of speed, and which would permit students to write at their individual rate, printed dictation may be used. She further concluded that evaluation obtained from shorthand tests administered by printed dictation as compared with oral dictation may vary from negligible relationship to substantial relationship. In most instances substantial relationship existed, although there were two cases where correlation was low. Hammond did not indicate the level of significance of the correlation coefficients.

The critical ratios of the scores in tests administered by oral dictation as compared with those administered by printed dictation were 2.42, 3.13, 1.09, and 2.41 for tests 1, 2, 3, and 4 respectively.

The author, therefore, concluded that there was no significant difference in the students' achievement when using printed dictation as compared with oral dictation on tests 1, 3, and 4 at the 1 percent level of confidence; but there was a significant difference at the 1 percent level of confidence on test 2. Based on the critical ratio at the 5 percent level of confidence, there was no significant difference in the students' achievement on tests 2 and 3; but there was a significant difference in the students' achievement on tests 1 and 4 at the 5 percent level of confidence.

The researcher's appraisal of Hammond's methodology points out several weaknesses. Students were familiar with the oral method of dictation due to previous classroom experience, but unfamiliar with the nondictation (non-oral) materials known as "dictaplate." The same dictation materials were used for both testing methods; and even though the tests were given a week apart, the results of the second testing may have been influenced by memory of the dictation materials. Another limitation is the small sample size from which conclusions were drawn.

In addition, two of the tests indicated correlation figures that showed negligible relationship.

The Calder Study[6]

Calder made a study to determine if student growth in second semester high school shorthand classes can be measured through the use of a simple objective test. She compiled an experimental test divided into three parts: vocabulary, dictation, and English skills. She used a selection from Business Teacher magazine as the control test (syllable intensity of 1.3) dictated at the rate of 60 words per minute for five minutes, allowing 30 minutes for a complete typewritten transcript. Each of the parts, including subtests, was correlated with each other part and with the control test and with the students' ten weeks' grade. The coefficients obtained showed that marked or high correlation was present; only two of the comparisons showed less than a marked correlation. Calder felt that the tests had very high reliability coefficients. Of particular interest to this study was the comparison between dictation tests and the control test as these tests were objective in nature. The syllabic intensity averaged

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[6]Edith Anne Calder, "A Study of the Extent to Which Objective Tests May be Used to Measure Shorthand Skills," (unpublished Master's thesis, The University of Washington, Seattle, Washington, 1956).

1.3, the same as that of the control test. The duration of dictation was two minutes. The transcript was the fill-in type in which the student used her notes to complete a skeleton transcript. The total score on the dictation subtests had a validity coefficient of -.85 with the control test. The coefficient was minus for the reason that the control test was scored by marking the number of errors while the dictation tests were graded according to the total number of correct responses. The experiment was administered to 409 students in nine Seattle high schools over a two-day period. The students had had approximately 130 periods (35 minutes in length) of training prior to the experiment.

It would have been much more desirable, from the researcher's standpoint, if the experiment had comprised advanced shorthand students; but, nevertheless, this high correlation was very notable and warranted further investigation in order to determine whether objective tests could be substituted, at least in part, for the time-consuming dictation tests. Calder expressed the same thought.

> All students should have practice in making complete transcripts of materials dictated. For them to transcribe every test completely when the same results can be obtained with a fill-in transcript test, however, is a waste of time.[7]

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[7] Ibid., p. 52.

Presumably what she meant by "when the same results can be obtained" was that fill-in transcripts will adequately measure performance in lieu of typing a complete transcript; but she probably did not mean that the students will gain the same experience in the actual process of transcription if fill-in tests are substituted. Fill-in tests, after all, only test certain parts of transcription skill, notably ability to read notes and to take dictation at certain speeds. Since Calder was primarily concerned with the first year of shorthand in which speedbuilding is stressed, her comment would probably be more applicable to the first year study of shorthand.

In the researcher's opinion, there is no adequate alternative yet devised which will train students for complete competency in stenographic skills without a great deal of practice in actual transcription.

Jester[8] has given us insight into the make-up of the transcription process. His findings showed that the transcription process is composed of a series of highly, interrelated elemental tasks all of which contribute to the intricate process of producing quality transcripts. In the researcher's opinion, it is doubtful whether an

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[8]Donald D. Jester, "A Time Study of the Shorthand Dictation Process" (unpublished Doctoral dissertation, Northwestern University, Evanston, 1959).

objective test could measure most of these components in isolation. Spelling might be tested separately, but it would be difficult to prepare a test for letter production for the reason that there are many variables to consider.

Calder offered some helpful advice when she pointed out that it was easy to devise a fill-in test. Any dictation material can be transformed simply by selecting carefully the crucial words for omission.

The Hiett Simplified Shorthand Test[9]

An objective-type shorthand test, called the Hiett Simplified Shorthand Test, published by the Bureau of Educational Measurements of Kansas State Teachers College, was another example of a nondictation test that had been developed. It was developed for hand-scoring or machine-scoring; correct answers were indicated by encircling the proper answer or blackening a space on the answer sheet.

Conclusion

In the search of the literature and research relating to the validity and reliability of objective tests, there was some evidence to support the contention that

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[9]Mathilde Hardaway, Testing and Evaluation in Business Education (Cincinnati: South-Western Publishing Company, 1966), p. 286.

there is a positive relationship between the objective type tests and the traditional type dictation tests as given in public high schools; but there was no conclusive evidence in this regard. Further research is needed. The difficulty with the research uncovered to date was that it was deficient in either (1) a lack of controlled conditions between the experimental group and the control group in terms of physical factors, such as population characteristics or in the tests themselves, or (2) faulty or non-existent statistical evidence.

Studies in the Problem of Difficulty Measurement

Measurement of difficulty of the dictation materials has been a source of concern by researchers and educators alike, both from a theoretical and practical standpoint. In theory, it would be ideal to be able to adjust the difficulty level to (1) the precise state of the students' learning progress, and to (2) select material at each stage which is neither too easy nor too difficult for the student in order to properly motivate her. In a practical vein, all teachers have experienced with dismay, dictating various letters which they thought were constant in difficulty, but which students found either too easy or too difficult to handle.

Leslie[10] stated that "the Germans for many years have expressed their shorthand speeds directly in terms of syllables a minute" instead of words per minute. He indicated that this would be more satisfactory and more scientific than by actual word count or by standard words.

> The standard word greatly equalizes the difficulty of shorthand dictation material, but there is still some difference in difficulty.[11]

Other devices which have been used to measure difficulty of dictation are: typing stroke count, shorthand character count, sound count, artificial restriction of vocabulary, vocabulary spread index, vocabulary analysis, sentence length, syllable intensity and the standard word. But of all these methods only the syllable intensity and the standard word have survived. Recently, new methods have been proposed to overcome the inherent weaknesses in the difficulty measurement, but they have not been widely accepted as yet.

Early Researchers

Wellman,[12] one of the earliest researchers to study difficulty of dictation tests found that the

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[10]Louis A. Leslie, Methods of Teaching Transcription (New York: McGraw-Hill Book Co., Inc., 1949), p. 201.

[11]Ibid.

[12]Rowena Wellman, "An Examination of Certain Factors Involved in the Reporting and Transcribing of Stenographic Materials" (unpublished Doctoral dissertation, Columbia University, New York, 1937) cited by Mildred C. Hillestad, "Factors Which Contribute to the Difficulty of Shorthand Dictation Materials" (unpublished Doctoral dissertation, University of Minnesota, Minneapolis, 1960).

vocabulary level seemed to be a better index of difficulty than syllable intensity. Because Wellman did not have the advantages of computers or refined statistical techniques, she held all but one factor constant at varying times. These factors were sentence length, syllabic intensity, shorthand stroke (average number of strokes per word), and vocabulary frequency level. For instance, as pointed out by Uthe who also reviewed this study:

> (Wellman) found no significant difference between mean scores (errors) on transcripts of dictation materials having syllabic intensities as divergent as 1.4 and 1.8 syllables per word. . . . In contrast, a significant difference was found between means of errors made on two tests in which all elements were identical. Such findings would indicate that something other than syllabic intensity was operating to make one test more difficult than the other when difficulty was measured by the number of errors.[13]

The Elsen Study[14]

Elsen made a study of three of the factors used to measure the difficulty of dictation material using

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[13]Elaine Uthe, "An Evaluation of the Difficulty Level of Shorthand Dictation Materials" (unpublished Doctoral dissertation, University of Minnesota, Minneapolis, 1966), p. 14.

[14]Sister Mary Elfrida Elsen, "Factors of Difficulty in Shorthand Dictation Material" (unpublished Master's thesis, De Paul University, Chicago, 1946).

Gregg Anniversary shorthand: syllable intensity, vocabulary spread, and the shorthand character count. Her findings indicated that it was important to predetermine and control the rate of speed of dictation. Her conclusions signified that syllabic intensity is a fairly accurate indicator of the difficulty of the shorthand dictation material; that the number of spelling and punctuation errors correlate more closely with the vocabulary spread index than it does with the syllable intensity figure; that the total errors of all kinds correlate more closely with the syllable intensity figure than with any other index or combination of index figures. Her main conclusion was that syllable intensity has the greatest validity of the three as a predictor of the difficulty of stenographic material and is the easiest to compute.

Leslie[15] gave praise to Elsen for this piece of work. But apparently her study has not stood the crucial test of impartial scientific methodology. Subsequent researchers, among them Hillestad[16] and Uthe[17] have criticized her work.

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[15]Louis Leslie, Methods of Teaching Gregg Shorthand (New York: Gregg Publishing Division, McGraw-Hill Book Company, Inc., 1953), p. 43.

[16]Mildred C. Hillestad, "Factors Which Contribute to the Difficulty of Shorthand Dictation Materials" (unpublished Doctoral dissertation, University of Minnesota, Minneapolis, 1960).

[17]Uthe, op. cit.

Hillestad[18] criticized Elsen's study as follows:

1. No account was taken of the differences in the type of dictation, other than those pointed out by the abrupt rise of errors.
2. No indication was given that the letters chosen were at random.
3. No statistical analysis was reported.
4. Bar graphs were drawn on separate scale for errors and syllable intensity.
5. No attempt was made to reduce the measures to common units in order to compare them. Had this been done, the slope which conveniently proves her argument may have been changed.
6. None of the original data was included in the study making it impossible to go over her figures.
7. No details were furnished regarding the scheduling of the dictation.

It should be noted that all seven points were procedural in nature, but only item five questioned her findings.

Uthe[19] criticized Elsen's study mainly for the lack of random sampling in the choice of the dictation materials and the lack of penetrating statistical analysis.

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[18]Hillestad, op. cit., pp. 15-18.

[19]Uthe, op. cit., p. 15.

Others have criticized the use of syllable intensity as the best measurement of test difficulty and have proposed various ways of measuring difficulty. For the purposes of this study the syllabic intensity measurement was used as it was easy to compute and has been the traditional method used.

The researcher would like to call attention to an observation noted in Elsen's handling of the data that might have refined her conclusions. In Elsen's quest for suitable dictation materials at higher syllable intensity levels, she turned from conventional business correspondence to Congressional dictation material as it was difficult to find desirable business compositions. It is felt that her finding; namely, that errors increase when the syllable intensity is raised from 1.7 to 1.9, is not due entirely to intensified syllabic intensity levels but is partially influenced by the advanced shorthand student's unfamiliarity with specialized governmental terms. Elsen should have tested for this likelihood by devising two series of tests at the same syllabic intensity levels, one composed of business correspondence and the other of Congressional material.

The Curtin Study[20]

As reviewed by Uthe:

> Curtin (1958) obtained a coefficient of correlation of .128 between mean syllables per word and the number of shorthand errors made on a set of 41 letters randomly selected . . . This degree of relationship is not statistically significant for a sample size of 41 and would seem to indicate that for these letters syllabic intensity would not predict difficulty in recording dictation.[21]

The Hillestad Study[22]

Hillestad was one of the first researchers to study systematically the relative importance of the elements of dictation which cause the students the most difficulty in taking dictation. Hillestad said that the findings of many studies were inconclusive for two reasons: (1) designs used (models) and (2) inadequate statistical treatment of the data. In addition she pointed out that none of these studies made an attempt to measure statistically the difficulty according to errors. Her model purported to do this since she had access to a computer to handle the statistical computation and data involved.

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[20]Rita Curtin, "The Relationship Between Selected Factors and Difficulty of Dictated Material" (unpublished Doctoral dissertation, Indiana University, Bloomington, 1958).

[21]Uthe, op. cit., p. 16.

[22]Hillestad, op. cit.

The need to measure scientifically the difficulty level was twofold: (1) to have a consistent measure of the difficulty of the dictation material in order to plot correctly the student's progress in accordance with accepted theory of learning, and (2) to select material that is neither too easy nor difficult so that the student will be motivated properly.

Such reasoning led her to conclude that errors and difficulty were interrelated. For instance, one of her observations gained from learning theory was that students simplified words they did not fully understand into their own terms, thereby causing errors. She did not probe deeply into the psychological or sociological principles accounting for errors, however. But based on the assumption that recording errors and difficulty of materials are related, she carefully assembled sixteen variables selected in part from possible predictive factors proposed by existing research at the time.

Hillestad developed a multiple regression equation identifying those elements in dictation material and the shorthand system which could be used to predict the difficulty the student would have as reflected by errors made in recording shorthand from dictation. She found that the length of words counted in syllables (a form of syllabic intensity) and the vocabulary level (frequency of word

usage) were the significant predictors. The variable, words beyond the first 1500 words on the Silverthorn List, was substituted for the vocabulary level variable in her final formula, because these two variables were both measures of vocabulary level. The correlation coefficient was .967 between the two, indicating that these two variables measure the same thing. Furthermore, words beyond the first 1500 were easier to handle than vocabulary level. However, the errors were more directly related to the vocabulary level than to the number of syllables in the words in the proportion of .7681 to .4106 in computing regression.

The elements of the shorthand system seemed to be more valuable as indicators of learning difficulty than as predictors of difficulty of dictation materials.[23] Therefore, Hillestad recommended more intensive drills for these factors.

Uthe[24] pointed out two shortcomings in Hillestad's methodology: (1) the speed of dictation was not uniform from class to class, and (2) the sampling of students was not independent.

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[23]Uthe, op. cit., p. 36.

[24]Uthe, op. cit., p. 37.

The Farmer Study[25]

Several researchers, Farmer, Baggett,[26] and Peterson,[27] attempted to validate Hillestad's formula of error prediction, but the researchers were not successful in their endeavors.

Farmer (1961) designed a study using Hillestad's formula as a criterion for six classes of second year students in Calgary, Alberta, Canada, using Pitman Shorthand. Her conclusions were:

> Although Hillestad's theory of difficulty may successfully predict errors in the notes taken in Gregg shorthand, it might not be as valid a predictor of errors in the transcripts of Pitman shorthand notes. The conclusion cannot be made on the basis of this experiment that Hillestad's measure operates as a calibrator of the difficulty for transcripts made from Pitman shorthand.[28]

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[25]Geraldine Mary Farmer, "An Experiment to Test the Validity of a Measure of the Difficulty of Shorthand Dictation Materials," Dissertation Abstract, Vol. 22 (1962), p. 3945.

[26]Harry William Baggett, "The Validity of a Measure of the Difficulty of Gregg Shorthand Dictation Materials," Dissertation Abstract, Vol. 26 (1965) p. 1648.

[27]Richard B. Peterson, "An Investigation of the Validity and Reliability of a Formula for Determining Difficulty of Shorthand Dictation Materials" (unpublished Master's thesis, Mankato State College, Mankato, 1958).

[28]Farmer, op. cit.

The Baggett Study[29]

Baggett (1964) conducted a study based upon the Hillestad formula using seven classes of second year shorthand students in the Richmond, California, School District using Gregg Simplified Shorthand. His conclusions were:

> . . . the Hillestad formula for predicting difficulty could discriminate between the difficulty of the six letters (of his model) but was not effective in predicting their order of difficulty.[30]

The Peterson Study[31]

Peterson (1964) designed a study to validate Hillestad's formula, by constructing eight letters using words selected from Silverthorn's list. The first letter contained mainly words from the first 400 words, the second letter, from the second 400 words and continued in irregular progressions through the eighth letter, which was composed of words from the 5,000 most used words and beyond. The letters were dictated, one-minute in length, to both first and second-year students at the end of the school year. Peterson found that the coefficients of correlation between the Hillestad predicted error score (y's) and the percent of error for all three groups--the

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[29]Baggett, op. cit.

[30]Ibid., p. 1648.

[31]Peterson, op. cit.

entire group, the first year students only, and the second year students only--was too low for predictive purposes.[32]

Uthe in reviewing this study notes that because of the short dictation time, the irregular progression in the use of the vocabulary levels on the Silverthorn list and the lack of information about the similarity of classes, Peterson's findings must be viewed cautiously. Uthe concluded that additional research would seem necessary to validate Hillestad's formula for she stated:

> . . . that further research is necessary to investigate whether this is due to the design of the study, the influence of other variables not included or chance.[33]

The Uthe Study[34]

Uthe (1966) developed a formula that would consistently predict the difficulty level of dictation material used in learning and testing purposes. She developed a multiple regression equation that would predict the number of errors a student would be likely to make in her shorthand notes when recording a shorthand dictation test using Gregg Diamond Jubilee shorthand.

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[32]Uthe, op. cit., p. 43.

[33]Uthe, op. cit., p. 43.

[34]Uthe, op. cit.

Two types of data were gathered on 100 individual letters from which the regression equation was derived: (1) those characteristics inherent in the words themselves; such as, syllabic intensity, vocabulary level, brief forms in the 1-100 vocabulary level range, and (2) those characteristics related to the shorthand system itself; such as, shorthand stroke intensity in brief forms, shorthand stroke intensity in brief form derivatives, shorthand stroke intensity in constructed words.

The study was concerned with the number of errors made by fourth semester high school students in recording Gregg Diamond Jubilee shorthand from dictation.

Within the above two groups, Uthe identified 35 variables that might serve as predictors. Using 33 variables in a multiple regression analysis, she obtained a correlation coefficient of .84 between the variables and the criterion, the adjusted mean word error scores students made. However, Uthe selected only the three best or more practical variables for use in the final formula. These variables remaining at the .95 level of probability were: brief forms, words beyond the 1500 most frequently used words as developed by Silverthorn, and endings. She obtained a correlation coefficient of .76 between the three weighted variables and the criterion. Uthe upholds the use of the three variables in contrast to the full 33

variables because the correlation coefficient of .76 seemed adequate for the purpose she had in mind; namely, to develop an equation to predict consistently the number of errors a student makes on a selected piece of dictation material.

Although the researcher is of the opinion that this is a commendable piece of research, it is doubtful that the average high school teachers would avail themselves of her formula because of its complexity. As yet publishers of dictation material have not adopted her formula; therefore in the interest of uniformity and prevalent practices this researcher will use syllabic intensity as a measure of differences in difficulty between high school teacher dictation tests and the entry-level stenographic dictation tests required by State Civil Service Commissions. It would be valuable if further studies were made to corroborate her predictive formula.

The Mellinger Study[35]

Mellinger offered another approach to measuring syllable intensity. He questioned the use of the standard word as an adequate measure of the difficulty of dictation

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[35]Morris Mellinger, "Let's Adopt the Yardstick of a Word Frequency Index," Business Education World, XLV (December, 1964).

material. In this regard, he analyzed Silverthorn's list of 300,000 words and found that the average syllabic intensity was 1.56 instead of 1.4 which is so widely used today. Furthermore, he pointed out that even poor students have little difficulty writing in shorthand some common words familiar to all, such as "information," regardless of the number of syllables contained in the word. Whereas these students have trouble with less common words, even though the word may have only one or two syllables. Thus syllable counts as measures of difficulty would be misleading since some would be associated with easy-to-take words while others would be associated with hard-to-take words.

As a solution to this dilemna, he suggested the adoption of a word frequency index. This index would be composed of Silverthorn's 200 most frequently used words. All dictation material would be evaluated according to the percentage of these 200 words contained in the letter or manuscript selected for dictation. It would be a simple process, once the teacher or the student had committed to memory or otherwise mastered these words, to count them. Once the idea caught on, this percentage could be published along with the dictation material.

Mellinger worked out a table to measure difficulty based on this arrangement:

Classification	Proportion of 1-200 Silverthorn Frequency Words
Difficult	Less than 60 percent
Average	60 to 69 percent
Easy	70 percent or more

He noted that 60 percent of Silverthorn's 300,000 words were these 200 most frequently used words which led him to hypothesize that any business letter would also contain 60 percent of these words. This was the basis of the table.

He did a limited amount of verification of this table (approximately 400 letters from various sources) from which he concluded that:

> It now seems clear that additional samples of letters will not change the results significantly, and the results mentioned in this report can be assumed to apply to virtually all letters.[36]

Conclusion

Traditional measurements of difficulty level are being challenged today, as well as in the past, because of their lack of validity or reliability; nevertheless, these measures are still widely used. The reasons for their use are these: (1) publishers continue to use them, (2) the alternative methods have not been conclusively demonstrated to be superior or are too complicated to use

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[36] Ibid., p. 31.

in their present form, (3) custom, (4) inertia. But perhaps there is another reason. It is possible that teachers are not really aware of, or concerned with, the full potential such measures offer. This possibility would be worthy of further investigation.

Studies in Transcription Standards

Three studies concerning transcription standards were reviewed.

The Barras Study[37]

Barras' research was an empirical study pointing to transcription practices which need improvement. Barras made a study to determine the transcription rate and the quality of transcription of fourth semester shorthand students in selected Catholic high schools.

A dictation and transcription test was administered to 324 fourth semester shorthand students in 18 randomly selected Catholic high schools in the Midwest. This test consisted of three nontechnical letters containing a total of 400 standard words which were dictated at the rate of 80 words per minute and transcribed at the typewriter within a 30 minute period. Transcription rates were

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[37]Sister Mary Joanna Barras, OSF, "Transcription Achievement of Fourth Semester Shorthand Students in Selected Catholic High Schools in the Midwest," (unpublished Master's thesis, The University of Wisconsin, Madison, 1961).

determined by dividing the total number of gross words transcribed, plus an allowance of one word for every five strokes of nondictated material typed, by the number of minutes used in transcribing them. Transcripts were checked for accuracy and were given a quality rating of either verbatim, mailable, or unmailable. Transcription errors were classified to determine their frequency of occurrence. A comparison of the findings of the survey with those of similar studies by means of comparative tables was made.

It was found that the average transcription rate was 14.3 words a minute; the median rate was 14.5 words. The range was from 6.6 to 27.8 words a minute. Only 4 percent of the students attained a rate of 20 words a minute or higher. About 17 percent of the letters were transcribed verbatim, while 32.9 percent were rated mailable. Errors of substitution outranked every other type of error by a wide margin while other errors occurred in the following order of frequency: omissions, typographical, poor erasures, spelling, additions, punctuation, English usage, letter mechanics, and syllabication. When these classifications were grouped in terms of the three basic skills involved in the transcription process they ranked as follows: Shorthand 66.2 percent, English 17.1 percent, and Typewriting 16.7 percent. A difference was

noted in the frequency of the transcription errors made in this study with those of other studies not cited. Whereas English errors ranked first in other studies, they ranked second in this study and accounted for only about one-sixth of the total errors.

The average percent of accuracy for students was 96.6. There was no significant difference between the results of this study and that of a similar study conducted in the public school system in 1952. The median transcription rate was slightly higher in the Barras study, while the quality of transcripts of the 1952 study was somewhat superior.

The researcher found no evidence that transcription speeds had been improved over the intervening years. In a nationwide study of hundreds of shorthand students who completed their transcription training, it was found that the average transcription rate for students was 14 words a minute.[38]

The Jester Study[39]

Jester has contributed to the profession with an analysis of what transpired in converting shorthand notes

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[38]Hardaway, op. cit., p. 297.

[39]Donald D. Jester, "A Time Study of the Shorthand-Transcription Process" (unpublished Doctoral dissertation, Northwestern University, Evanston, 1959).

into final copy. He singled out 36 advanced shorthand students for time study by identifying and examining the numerous tasks they performed while transcribing material.

He observed,

> . . . that transcription is a series of activities, each one consuming an interval of time. Typing occupies only 38.1 per cent of the overall time, contrasted to 61.9 per cent devoted to non-typing activities.[40]

From this, he concludes that:

> . . . transcription training must include more than drill in typing from shorthand notes. It must include training in the performance of the non-typing activities of transcription.[41]

The non-typing activities grouped themselves naturally into four major areas. The most important, requiring 32.9 percent of overall time, were activities of identifying and solving typing problems. Activities of this type included identifying and correcting errors, problems of style and placement, and problems of machine manipulation. Shorthand problems ranked second, requiring 14.3 percent of overall time, centering around deciphering incorrect outlines, reading notes for context and meaning, deciphering poor penmanship, and supplying omitted outlines. The third ranking area of non-typing activities requiring

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[40] Ibid., p. 33.

[41] Ibid., p. 33.

8 percent of overall time were those of an informational nature. They included activities of supplying, verifying, and correcting information for fill-ins and for letter parts, such as inside addresses, signature elements, salutations, and complimentary closings. Problems of English usage ranked as least important, occupying only 6.7 percent of the time. Jester indicated that English problems included spelling, punctuation, syntax, and syllabication.

The informational problems seemed to be common to all transcribers; whereas, the typing, shorthand, and English usage problems varied more pronouncedly from transcriber to transcriber apparently depending on the background, skill, and intelligence of the individual. The transcribers relied on their own backgrounds of knowledge in solving typing, shorthand and English problems; but with informational problems, the students consulted reference sources more often.

Slow transcribers tended not to keep their eyes on the shorthand notes during the typing activity, were hesitant about making decisions, took more time with erasing and correcting errors (but did not necessarily make more errors), did not handle the paper and adjust the typewriter with dispatch, were uncertain about proper headings, and signature location, etc., and seemed not to know where to find needed information. Fast transcribers

on the other hand performed these operations well, exhibiting smooth rhythmical motions of typing.

The typing function itself consisted of very short intervals of sustained typing--less than 30 seconds for 92.9 percent of the time, caused by interruptions due to performing non-typing activity. The transcription typing rate without taking into account non-typing activity was approximately 45-55 percent of the student's straight typing rate, and correlated with the student's straight typing rate, which means that transcription is a much more complicated and inclusive activity than straight typing.

The implications of Jester's study will have far-reaching influences on the quality of instruction in future high school transcription classes. Not only did he point out that non-typing activities consume more time than actual typing, but that inefficiencies in these activities have contributed heavily to the slowness of the total transcription process. He pin-points specific areas where improvement could be attempted such as drills in the use of reference materials or improving skills in writing correct shorthand and the approximate amount of attention that should be devoted to each. He leaves for future research the precise implementation that these improvements should take.

The Thomas Study[42]

Thomas developed a criterion for the measurement of shorthand transcription production using some of the ideas of leading thinkers and writers in the field of shorthand transcription. Stated more specifically, the purpose of his study was (1) to determine the physical characteristics of the materials to be transcribed; (2) to determine the procedures to be followed in conducting transcription tests; and (3) to arrive at a set of rules for the grading and scoring of the completed transcripts.

Through a survey of opinions of experts in the field of business education, the following findings were reported with regard to the physical characteristics of the materials to be transcribed:

1. The syllabic density of the dictation material may vary from 1.35 syllables per word to 1.45 syllables per word.
2. The word count of the dictation materials should be based on 1.4 syllables per counted word.
3. Quarter-minute markings of the letters should show an accumulated word count.

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[42]Archie C. Thomas, "The Development of a Criterion for the Measurement of Shorthand Transcription Production" (unpublished Doctoral dissertation, Okalahoma Agricultural and Mechanical College, Stillwater, 1951).

4. Dictation materials should specify the number of words to be added to the word count of the body of each letter for the elements of the letter other than the body. For example: envelope address, date line, inside address, etc.

Procedures to be followed in conducting the transcription tests were reported as follows:

1. No time should be allowed for pre-reading of shorthand notes.
2. A period of transcription should be 30 minutes, but it is not expected that testees should complete transcription of all letters dictated.
3. The time allowed for proofreading transcripts should be included in the transcription time.
4. Transcription timing should not begin until all students have been given an opportunity to become adjusted to their machines and settled for typing. Testees should be responsible for proofreading and making corrections and should, therefore, be told the amount of time remaining in the period to allow for completing letters.
5. An envelope should be addressed for each letter dictated, and the address should be arranged and punctuated in the same manner and style as the

inside address of the letter. Time required should be included in the transcription time.

6. Typing errors should be erased and corrected on original and carbon copies within the transcription time.
7. The date and inside address should be included as part of each letter but not as a part of the timed dictation.
8. Test materials should not be previewed or practiced prior to the conducting of the tests.
9. Testees should be permitted to verify the street address, city and state and spelling of proper nouns of the inside address before the dictation of the ensuing letter begins.
10. Students should determine both their gross and net rates of transcription production.

The following findings were reported with regard to the rules for grading and scoring of transcripts:

1. A transcript does not have to be verbatim.
2. A satisfactorily corrected error should have no penalty.
3. Letters become unacceptable if they have the following fatal errors: misspelled words, uncorrected typographical errors, incomplete or

fragmentary sentences, incorrect choice of words, poor sentence construction, degree and judgment errors, etc.

4. Gross words used for figuring score include incomplete letters. Gross transcription rate shall be the number of gross words transcribed divided by the elapsed time of 30 minutes.
5. Net number of words transcribed shall be the number of gross words transcribed less penalty deductions.
6. Net transcription rate shall be the number of net words transcribed divided by the elapsed time of 30 minutes.

Recommendations made as a result of the Thomas study indicated that the criteria he developed concerning physical characteristics of materials to be transcribed, the procedures to be followed in conducting transcription tests and the rules for grading and scoring transcripts should be used by transcription teachers in both high schools and colleges and by personnel managers as an employment entrance test.

In light of Jester's contributions to determine what the existing standards of transcription production are in high schools and colleges in comparison to what

this study recommends, it would seem that further research is needed.

Studies Concerning Innovative Testing Practices

A search of the literature for evidence of experimentation and research leading to improvement in shorthand testing practices revealed very few articles or studies dealing with this subject. But what was available exhibited a willingness on the part of teachers to depart materially from the "tried and true" and offered a foretaste of what might be achieved if more innovative projects were undertaken. For instance, Sadoff and Perkins described an unusual way to reduce effort in shorthand testing.

> A shorthand test of a nondictation nature is the Otis and Laurent Test of Shorthand Skills published by the Personnel Research Institute. This test does not include any dictation or typewriting transcription--it is merely a carbon pack composed of a printed form of a letter arranged in triple spacing. Under each typed line the applicant is asked to transcribe the letter in shorthand. Upon completing the shorthand copy, the applicant is given the carbon copy on which the same letter partially transcribed appears and on which the carbon imprint of his shorthand notes appears. The applicant then completes the transcription from his own shorthand notes. A score is determined from the accuracy and the time it takes to finish the transcription.[43]

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[43]Frances Sadoff and Edward Perkins, Jr., "There Must Be a Better Way to Test for Employment," The Balance Sheet, XLVIII (October, 1966), p. 67.

The article did not state whether research was undertaken to establish the new technique's validity nor how widespread its application was. Such information would have been desirable; however, the authors have unveiled new horizons of imaginative thinking.

Schoetke also developed a practice technique similar to the Otis and Laurent Test for classroom use in which printed dictation materials were used in building speed in shorthand.[44] The shorthand speed tests and the transcription tests, which were to be practiced and used as instruction material, were typed triple-spaced on master copies. Shorthand outlines were written between the triple-spaced lines. The master copies were then duplicated and distributed each day to the students.

PART II

Problems Encountered and Trends Observed in Testing Procedures Used by State Civil Service Commissions

This part of the review of the literature is concerned with the problems encountered and the trends

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[44]Flossie Katherine Schoetke, "An Evaluation of the Phonetic Approach to the Learning of Gregg Shorthand in a One-Year High School Course at Dewitt, Iowa Public High School" (unpublished Master's thesis, State University of Iowa, Iowa City, 1951).

observed in the testing procedures used by State Civil Service Commissions.

The literature is very limited; however, there is enough available to discover the objectives of typical Civil Service stenographic testing programs, the problems encountered, the trend toward remedying some of the weaknesses. The purpose of State Civil Service Commissions is primarily one of administration. They do not use tests to improve skills, but only to select in a rational way the best qualified applicants that choose to apply for employment and to follow their progress toward more responsible positions.

The California Study[45]

Chopson and Cawley stated that a very satisfactory solution to the testing problems of Civil Service in the State of California was achieved by using printed dictation for the performance portion of the stenographic examinations. The complexities of the transportation and communication systems of the State dictated a need for the speed-up of processing of tests given to the thousands of job applicants for stenographic positions. Administering

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[45] E. W. Chopson and Pauline B. Cawley, "New Method of Examining and Certifying Typists and Stenographers," Public Personnel Review, (October, 1949), pp. 201-205.

orally dictated tests was cumbersome, time consuming, costly, unequitable, and often unusable for the reason that the prospective employee was no longer interested in employment by the time the registers could be compiled. Such factors as errors made by dictators, prohibitive costs of mechanical means of dictation, and a multitude of other adverse conditions led to the development of dictation material in printed form. This new type of test could be distributed easily, given continuously rather than intermittently, graded uniformly, and registers (composed of persons actively seeking employment) prepared expeditiously at very significant cost savings. Therefore, the State of California felt that this type of testing offered a great deal toward simplifying their operations.

The printed dictation material could be copied in shorthand within a certain period of time and then transcribed through the use of a duplicate printed transcript in which a variety of words and phrases were underlined and numbered. Correct or incorrect answers could be indicated on an IBM answer sheet as true or false. Five minutes were allowed for copying the printed material into shorthand and thirty minutes were allowed for the transcription. (Comparing the copy with the applicant's notes.) There were predetermined passing scores.

No dissatisfaction on the part of the applicants was reported. Repetition of the same test form by individuals was prevented by using various test forms at different times of the year.

To test the validity of their stenographic performance test, the state conducted limited research. The findings were as follows:

> Statistical analysis of the results of such stenographic tests administered experimentally to groups of stenographers already employed showed that when scored by the most favorable formula, correlations of scores on this test with scores on conventional stenographic tests approximated .75. Validity correlations were also calculated against various criterion scores. While the criteria themselves were not sufficiently reliable to serve the purpose adequately, obtained correlations indicated that the printed machine-scored tests were probably as valid as the conventional tests.[46]

This study was a very significant one as it dealt with validating a new approach to shorthand testing. To a limited extent the state tested the validity of this new method and was satisfied that it was probably as valid as conventional testing. However, since only a limited amount of testing was done to insure its validity, care should be exercised in accepting the state's presumption that the test is as "valid as conventional testing" without substantiation from other sources.

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[46] Ibid., p. 202.

The United States Employment Service Study[47]

The United States Employment Service (USES) in cooperation with California, Illinois, New York, and the Utah Employment Security Services completed a study in 1965 (1) to determine the optimum length of dictation needed on tests, and (2) to ascertain whether shorthand proficiency could be measured adequately utilizing a separate answer-sheet format.

The USES made this study because they felt that there were advantages to the fill-in type examination.

> The traditional complete transcription method of testing the ability to take dictation is generally accepted as the most valid approach, but scoring a transcript is a time-consuming operation. Use of a separate answer sheet form of a dictation test, like those used in the study, has the obvious advantage of reducing scoring time to a fraction of that required for determining the number of errors in a transcription.[48]

Research Concerning Optimum Test Length

The sample used in this portion of the USES research consisted of 228 applicants for stenographic positions in Illinois and New York. Most applicants possessed

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[47] Technical Report on Determination of Optimum Length and Format of Dictation Tests, A Report Prepared by the United States Employment Service in Cooperation with California, Illinois, New York, and Utah State Employment Services, June, 1965.

[48] Ibid.

a high school education and some work experience. The research consisted of administering two dictated tests at the rate of 80 words per minute for a period of three minutes allowing twenty minutes for transcription. Both tests were administered at one sitting. Applicants were not informed of the experimental nature of this test. The first test, the control test, was the United States Employment Test No. 11 consisting of 240 words averaging 1.6 syllables per word. This test is considered as indicative of performance expected by the average worker in governmental employment and is widely regarded as a standard against which other tests are measured. The second or experimental test was constructed especially for use in this study and contained 240 words averaging 1.5 syllables per word. These two tests were scored by marking the number of errors found in typed transcription for the first 160 words dictated, for the first 200 words dictated, and for the entire 240 words dictated.

Combined reliability coefficients for the applicants' test scores in the states of Illinois and New York at the first 160 words dictated level, at the first 200 words dictated level, and at the 240 words dictated level were .82, .84, and .81. Conclusions drawn from the study indicated that:

> . . . Results of this study provide evidence that the optimum length of text for an 80 words per minute dictation test is about 200 words. The relationship between scores on separate 240 word administrations of different dictation material is higher when scores are based on more or less than the first 200 words. On the basis of these results, it was decided that the forms of the new USES dictation tests to be constructed should be 200 words in length.[49]

The researcher noted that the correlation coefficients closely approximated one another denoting that perhaps sweeping conclusions could not be drawn with regard to the optimum length of dictation needed in stenographic testing. It is fair to note, however, that in all comparisons made by the USES the 200 word cut-off point definitely gave the best coefficient between the experimental and control tests indicating that there is merit in using shortened tests without loss in measurement accuracy. This research then contributes to measures which afford economy in time and effort.

Research Concerning Separate Answer Sheet Format

The sample used in this portion of the research consisted of 361 employed stenographers, job applicants and students of advanced stenography in the states of California, Illinois, and Utah. The educational level of testees was the same as the first experiment, but work experience was much longer.

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[49] Ibid.

The testing procedure consisted of dictating at 80 words per minute for three minutes, the experimental test used in the previous experiment. The testee transcribed the dictation material from her shorthand notes. This was test No. 1. Multiple-choice and true-false answer sheets were developed incorporating the same dictation material as on the experimental test. These tests were designated as tests No. 2 and No. 3, respectively. A fourth test, the USES No. 11, was used as a control test as in the first experiment. The examinees took all four tests in one sitting. In the first three tests the examinee used the shorthand notes which were written once at the time of the dictation of the experimental test. Test No. 1 can be described as representative of traditional testing; namely, complete typewritten transcript, graded according to the Gregg rules. Test No. 2, the multiple-choice form, consisted of a transcript with a considerable number of spaces left blank in the place of the words dictated. The examinee, first of all, determined from her shorthand notes which word or words belonged in each blank; and, secondly, selected the word or words which corresponded to her shorthand notes from a list of words supplied on the left side of the test and then recorded the letters A, B, C, D, or E on the answer sheet which were identified with the word or words on the word list.

Test No. 3, the true-false form, consisted of a complete transcript in which words and word combinations were underlined. (The underlined words corresponded exactly with the blanks of Test No. 3.) Some of these underlined words had been dictated and some had not. The examinee was to determine from her shorthand notes whether each of the numbered, underlined words or combination of words had been dictated, and to encircle the number if the underlined word or words had been dictated and to underline the word or words if they had not been dictated.

Test No. 4 was the standard by which comparisons of the three other tests were to be made.

The study revealed that:

> The correlation between the criterion test No. 11 and the separate-answer sheet version of the experimental test was .74 for the multiple-choice form and .70 for the true-false form. These are sizeable correlations with the criterion test, but they are both markedly lower than the correlation of .79 between the criterion test and the transcription form of the experimental test, the estimate of reliability of transcription scores.[50]

This portion of the research indicated that there was a definite correlation between the traditional method of testing and the fill-in type transcript method of testing. However, the correlation between the control test and the traditional method was significantly higher

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[50] Ibid.

than the correlation between the control test and the fill-in type tests. But it must be borne in mind that the fill-in tests were taken at the same time and that the material used in the fill-in portion was identical with that of the experimental test. Therefore, there was probably retention of words gained in completing the first test which would upset the correlation relationships to some degree. This research, therefore, was not conclusive evidence that the traditional method of testing measures to a better degree the performance of qualified applicants. It did, however, indicate an attempt to investigate scientifically the potentials of newer testing techniques.

Lamb's Observations[51]

Lamb stated that misleading results can come from any one skills test. She cited the experience of the United States Civil Service Commission who gave examinations to 225,000 temporary-appointment stenographers to qualify for permanent positions at the conclusion of World War II. A high percentage failed. The blame, as usual, was laid on the school. Later the blame was shifted to the government for its testing program. It

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[51]Marion Lamb, Your First Year of Teaching Shorthand and Transcription (Cincinnati: South-Western Publishing Company, 1961), p. 159.

seems that government staff executives complained that those who failed were competent stenographic workers. Lamb said the real fault lay with the fact that the testees were examined under unnatural conditions for she said:

> A skills test measures not the ability of the testee to perform on the job but her ability to perform under test conditions and between these two there is a great deal of difference.[52]

Conclusion

The State Civil Service Commissions are highly administratively oriented. Civil Service Commission officials must consider many more aspects of the testing program than is typical of the classroom. They must use discriminating tests in order to select the best qualified person and notify her as quickly as possible. The test usually must be processed centrally in order to be fair to all applicants and to keep adequate statistical records. The examination rooms and the operational processing procedures must be carefully planned to create a more ideal testing atmosphere because of the inherent artificial conditions that exists.

It should be noted that the larger states are experimenting with objective-type tests. The traditional method of oral dictation is a very time-consuming task

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[52] Ibid., p. 160.

from their standpoint in terms of processing effort and waiting-time for the applicant. Their purpose is not one of instruction, but of ascertaining the person's qualifications; consequently, any device which is valid and reliable and will predict a person's probable performance on the job is definitely desirable.

It would be desirable to note in detail the contrasts and similarities between the state and classroom testing procedures in order to make concrete recommendations which can improve both and result in harmonizing the two concepts wherever possible.

PART III

This part of the review of the literature is concerned with the basis of reconciliation, if any, that exists between the diverse goals of high school business educators and Civil Service Commissions; namely, the use of testing by the teachers as a vehicle to stimulate quality performance, and the use of testing by the State Civil Service Commissions as a means of selecting the best qualified candidate from a heterogeneous group of job applicants.

The purpose of this section is to discover what the divergencies in standards are and to note the common ground between the standards of teachers and state government; since in reality one group (the teachers) are trying

to produce what the other group (state government) want--competent stenographic workers.

The Technical Requirements Expected of Future Stenographic Employees

Leslie observes:

> The stenographer will be judged (and paid) on the basis of the number and quality of mailable transcripts produced. If the volume and quality of transcription are satisfactory, the employer will not care whether the shorthand penmanship is good or bad, whether the shorthand theory is correct or incorrect. The employer pays for transcripts, not for shorthand notes.[53]

The Green Study[54]

Green conducted a study of the dictation rates, dictation materials, and dictation practices of 72 business offices. He found that dictators spoke at many different speed levels and the flow of dictation was dependent upon their ability to express thoughts. In this connection he found that the dictation speed of 60 words per minute met the needs of only 10 percent of dictators;

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[53]Louis A. Leslie, Charles E. Zoubek, Russel J. Hosler, Instructor's Handbook for Gregg Shorthand, Vol. I, Diamond Jubilee Series, (New York: Gregg Division, McGraw-Hill Book Company, 1965), p. 48.

[54]H. H. Green, "The Nature of Business Dictation" (unpublished Doctoral dissertation, The University of Pittsburgh, Pittsburgh, 1951), as cited by C. A. Nolan, Carlos K. Hayden, and Dean R. Malsbary, Principles and Problems of Business Education (Cincinnati: South-Western Publishing Co., 1967), p. 381, and also as cited by H. H. Green, "Study of Office Dictation Shows the Real Need for High Shorthand Goals," Business Teacher (May-June, 1955), p. 3.

80 words per minute met the needs of 35 percent; and 100 words per minute, 50 percent. A dictation speed of 120 words per minute will meet the needs of almost all dictators.

However, another study showed that:

> . . . although dictation is given in speed spurts, some of which may be quite fast (ranging from 110 to as high as 140 words a minute), the duration of such spurts is extremely short (a few at .2 of a second, the majority not over .1 of a second) . . . Thus an average speed of 80 words a minute is considered satisfactory, for the ordinary needs of business.[55]

The dictation materials used in the Green study were of standard difficulty and readability, which meant that sentences were of average type and length. The syllable intensity was greater, however, than that of the standard word.[56]

Green concluded that dictation materials currently used in classrooms were not as difficult as those dictated in offices. The classroom speed of 100 words per minute was actually about 7 percent slower than the office dictation speed of 100 words per minute due to syllabic intensity differences. In order to compensate for this he recommended that dictation materials in the classroom be 1.5 syllable intensity.

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[55]Inez Frink, "Implications of Research in Shorthand and Transcription," National Business Education Quarterly, (Spring, 1961), p. 17.

[56]Green, op. cit., p. 381.

In line with Green's conclusion, Mellinger affirmed that schools should strive for higher syllabic intensity levels. He has carefully measured the syllabic intensity of Silverthorn's frequency of words contained in a sampling of over 2,000 general business correspondence which totalled 300,000 words. His findings disclosed that the syllabic intensity of the entire list was 1.56 from which he concludes that the average syllabic intensity of all business communication is probably closer to the 1.56 syllabic intensity of the Silverthorn list than to the widely quoted 1.4 figure.[57]

Green[58] also recommended shorter periods of dictation, rather than sustained dictation for five minutes, and more practice with office style dictation. Students should be informed of the nature of dictation practices, of stenographic working conditions, and the types of materials dictated in offices.

He also observed that few stenographers ever develop a higher skill on the job than that developed in the classroom. Therefore, he recommended that prospective

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[57]Morris Mellinger, "Has the Syllabic Intensity Yardstick Lost Its Magic?" Business Education World, XLV (November, 1964), p. 9.

[58]Green, loc. cit.

stenographers should be motivated for the highest possible speeds attainable while still in school.[59]

The Divergence in Standards Between Schools and Employers

Nolan in discussing standards writes:

> Since employers have such widely divergent job standards, and as long as they cannot speak of their own standards objectively, the educator who attempts to compare a school standard of achievement with a generally accepted job standard is attempting to compare his standard with something that is non-existent.[60]

School systems also have divergent standards. Final grades are the instructor's attempt to measure the proficiency of her students. The grades, of course, serve as motivating forces upon the student, but in a larger sense they serve as the teacher's evaluation of the student's ability to meet standards which should coincide with community needs. The teacher is confronted with the task of establishing those standards which purport to reflect the requirements of the job. As a result of this individualistic effort, there is no universal agreement as to what constitutes the best standards.

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[59] Ibid.

[60] Nolan, et al., op. cit., p. 370.

The Crandall and Christensen Research[61]

Crandall and Christensen reported on the dissimilarity in shorthand standards which they encountered when they analyzed state and local departments of education manuals relating to shorthand skills. Well-defined, understandable, uniform standards, purporting to measure expected achievement realistically, would be very advantageous to educators and the business community alike. Educators are entrusted with the responsibility of guiding young people to maturity, capable of rendering a useful service to society as well as to themselves. In order to fulfill this obligation, educators, from the State Education Commissioner to the teacher, have individual duties to discharge which entail myriad of choices among possible alternative courses of action. Obviously if they possessed suitable benchmarks of what acceptable performance should be, their planning and follow-up activities would more than likely yield very fruitful dividends. Businessmen are vitally affected by the quality of education because they must accept the end product of the schools--the citizens of tomorrow.

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[61]Lars G. Crandall and Edward L. Christensen, "Dissimilarity in Shorthand Standards," Business Education Forum, XVII (October, 1962), p. 11.

But are shorthand standards well-defined and is there substantial consensus on what constitutes acceptable levels of output especially since shorthand by its very nature is amenable to such specification? The answer is "no"; in fact, Crandall and Christensen found the exact opposite to be the case. They found that state and school district manuals on the subject to be: (1) nonexistent (local level only), (2) vague and not explicit, omitting essential variables, (3) lacking concise, well-defined standards and (4) varying from very sketchy to very complete in both coverage of the subject matter and description of the particular standard.

Crandall and Christensen did not present any statistical evidence to signify the extent of this variability. Probably it would not be very meaningful if they had since every state and district expresses the rather lengthy discussion of standards in its own unique style and tends to emphasize those aspects that it considers important. This practice would tend to defy statistical treatment. However, on the small group of universally discussed standards, a statistical analysis might have been very revealing. Even with such supposedly uniform standards relating to the desirable rates of dictation for the first year shorthand classes, an amazing degree of differences was evident. When it came to transcription rates,

one district allowed 15 minutes to transcribe 300 words while another permitted up to 45 minutes. Of course, much of the dissimilarity in the mode of expression can be attributed to the fact that there are so many independent and quasi-independent jurisdictions involved; but the fact remains that vocational subjects such as shorthand should lend themselves to some definite norms of both meaning and acceptable levels of output in order to be purposeful for educators and businessmen alike.

The Selden and Edwards Recommendations[62]

Selden and Edwards, of the Department of Public Instruction of the State of Pennsylvania, have recommended the following standards that they consider would serve as guides for the teachers of Pennsylvania:

> Final grades for achievement may be determined by averaging the grades for the rate of dictation, the rate of transcription, and the percent of mailability.

Specific Grades	Rate of Dictation	Rate of Transcription	Percent of Mailability
A	110 wpm. up	30 wpm.	96 to 100
B	100 wpm.	25 wpm.	90 to 95
C	90 wpm.	20 wpm.	84 to 89
D	80 wpm.	18 wpm.	79 to 83

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[62]William Selden and Robert D. Edwards, "Business Education Standards," The Balance Sheet, XLVII (November 1966), p. 113.

An accuracy rate of 95 percent on at least three transcripts at the same speed is required. Total number of errors include missed words, spelling, capitalization, and punctuation should not exceed 5 percent of the words dictated.

The transcription rate should be based on the average of three writings, but the following factors should be considered: length of letter, difficulty or complexity of the material, syllabic intensity, need to check spelling and syllabication, number of carbon copies, addressing envelopes, verification of dates, addresses, telephone numbers, and statistical information.

Percent of mailability is considered separately from rate of transcription or rate of dictation. Mailability might be defined as a letter that most executives would be willing to sign. Emphasis should be on accuracy, neatness and correct use of grammar inasmuch as businessmen are primarily concerned with these three items.

What the School System Can Do or is Doing to Produce Qualified Employees

Nolan and others state:

The task before business educators is not to discover definite job standards that are generally accepted by all employers, since there are few, if any, such standards; it is rather to cooperate with employers in working out standards for beginning employees that are reasonable, that can be achieved by average business students, and that will be mutually acceptable to schools and to employers.[63]

Teachers and school administrators can create an ideal learning environment in order that employers will not only be attracted to what is going on in the classroom

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[63]Nolan, et al., op. cit., p. 371.

but to do something about it. For instance, the high school teacher's role as a shorthand test administrator today is being enlarged. For the future this role conceivably might be broadened to such an extent that most employers would accept her verification of the student's stenographic qualifications in lieu of their own testing procedure. This would materially aid the employer in hiring well-qualified personnel as well as reducing his recruiting expenditures. This would in turn add to the teacher's stature in the community.

Already the Federal Civil Service is accepting certificates of student's performance if the teacher's tests meet the Civil Service's standards. The Federal Civil Service cites these benefits to students, teachers, and the government.

> Advantages to the applicant are that they are able to take performance tests in familiar surroundings, without the stress and strain of a formally conducted examination with dictation by an unfamiliar voice. Less time was then taken for giving the test because previous performance in speed had already been attained.
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> . . . . . .
>
> By giving the school and teachers a positive role in the examining process, they are able to secure high caliber graduates.[64]

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[64]Richard A. Fulton, "Civil Service to Accept Teacher Certificates of Proficiency," The Balance Sheet, XLV (December, 1963), p. 159.

If the trend continues, the teacher's testing method will assume more and more importance. Consequently, research into the best measures of student's proficiency will become indispensable.

Conclusion

Employers' technical requirements for stenographic employees appeared to be more demanding than high schools were requiring. But employers' standards were so diverse it was hard to generalize. It should be noted that school systems have diverse standards also. The task of the business educators, then, should be to cooperate with the employer in working out standards for beginning employees that can be achieved by average students. At the same time they should seek methods to improve their own teaching techniques to raise the quality of future office workers.

CHAPTER III

PROCEDURES

This chapter describes the methods and procedures used for the study and is divided into three sections: Section I contains the procedures used to ascertain the type, difficulty, and scoring methods of tests administered by State Civil Service Commissions; Section II contains the procedures used for ascertaining testing methods, materials, and standards used for grading purposes by public high school business educators in advanced shorthand and transcription; and Section III contains the procedures used to ascertain comparability between performance on teacher-type tests and a selected State Civil Service examination using a statistical approach.

I. Ascertaining the Type, Difficulty, and Scoring Methods of Tests Administered by State Civil Service Commissions

Determination of the Scope of the Problem

The literature that was available on Civil Service stenographic testing was limited, both in quantity and quality, so it was decided that other sources should be

sought. Michigan State Civil Service testing personnel were requested to give assistance. From the ensuing talks, they felt that it would be necessary to contact each state concerning whether or not they would be willing to answer specific questions about their testing methods and whether they would be willing to supply actual testing data suitable for the proposed research study. Therefore, letters of inquiry were written to appropriate state officials in each of the states requesting cooperation. A majority of the states showed definite interest in participating provided they would be furnished with a copy of the results of the study, and provided their materials would be held in confidence.

Designing and Refining the Questionnaire

Inasmuch as it would be impractical to arrange for personal interviews with all of the states' testing organizations, the questionnaire method was adopted as the most efficient and expedient way to obtain valid data.

A combined check list and fill-in type of questionnaire, which included explicit questions on testing procedures, test material selection, standards, and scoring methods was designed with clarity and brevity in mind. The object was to permit each state to answer every item with complete understanding. In order to appraise its

desired effectiveness, this tentative questionnaire was referred to the testing personnel of the State of Michigan for their reaction and comments. After the instrument was thoughtfully revised in line with the suggestions given, it was decided that the questionnaire was ready for use among the various states.

Mailing the questionnaire

The questionnaire was directed to a mailing list which had been assembled from the 1966 Directory of State Merit Systems listing current officials in charge of testing programs within each of the states. Accompanying each of the fifty questionnaires was a letter explaining the purpose and importance of the study. The letter also contained a request for a current or fairly recent copy of the shorthand portion (at the entry level) of the state stenographic test.

Follow-up of Outstanding Questionnaires

The first mailing of the questionnaires to State Civil Service Commissions netted a total return of 29 or 58 percent. There were 10 states who replied who failed to enclose requested specimens of their shorthand entry level tests. An additional return of 20 questionnaires as a result of the first, second, third and fourth follow-up raised the total questionnaires received to 49, or

98 percent of the total mailing. However, only 38 states, or 76 percent of the total number of states who replied, furnished samples of the shorthand section of the state stenographic tests. The remaining 11 states, or 22 percent, stated that they were unable to supply testing materials because of various state regulations. One state did not reply to the questionnaire.[65]

Although the total response was gratifying, a few states replied that their current testing material had been obtained from the Federal Government, and under the State's agreement with the Department of Health, Education and Welfare the State was unable to furnish the materials requested.[66] The Director of the Division of State Merit Systems, Department of Health, Education and Welfare was, therefore, contacted by telephone followed by written communication. As a consequence, permission to release materials was granted to the states. The Department of Health, Education and Welfare also supplied the researcher with copies of tests used by some states with the understanding that there would be a guarantee of complete security of all documents making a total of 38.

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[65] South Dakota did not reply to the questionnaire.

[66] Only 38 states supplied the shorthand portion of their State Civil Service stenographic examinations; therefore, only 38 states were involved in the analysis. There were 49 states, however, which replied to the questionnaire with regard to testing practices.

Analysis of the Data Collected

The results of the findings and their implications will be discussed in Chapter IV.

II. Ascertaining Testing Methods, Materials, and Standards Used for Grading Purposes by Public High School Business Teachers in Advanced Shorthand and Transcription

The importance and feasibility of obtaining information concerning testing practices of business teachers was discussed with leading business educators within the local area. As a result of these discussions, it was decided that the information needed could be obtained through the questionnaire and sampling technique. This method would make it possible to reach as many secondary teachers nationwide as necessary to substantiate this study. A carefully written questionnaire prepared in the form of a check list which could be answered quickly was recommended by all persons consulted.

Designing and Sampling of the Questionnaire

The questionnaire was designed in the form of a check list which included inquiries regarding the methods of testing, the selection of materials used for testing, and the standards used for grading purposes. Part One was prepared for advanced shorthand classes and Part Two for the transcription classes.

Sample questionnaires were submitted to a group of 25 high school business teachers in order to test the instrument for clarity. Willingness on the part of this sample group to complete and return the questionnaires seemed to indicate that other high school business teachers throughout the country would be interested in taking part in the study. Comments made by this group dictated the need for certain revisions of the instrument.

The questionnaire was revamped to allow for incorporation of their suggestions. As a result, a modified questionnaire was completed and resubmitted to the sample group. This second sampling demonstrated that the instrument was ready for use in the research study.

As a result of the analysis of the State Civil Service stenographic tests received, it was evident that there were a number of different kinds of tests given in various states with regard to type of dictation given, type of transcript required and the timing of the transcription period. Therefore, groups were set up according to the various test classifications as follows: Group 1, Printed type dictation with fill-in transcript; Group 2, Dictation type test with fill-in transcript; Group 3, Dictation type test, with three to five minutes transcription period; Group 4, Dictation type test, with ten to fifteen minutes transcription period; Group 5, Dictation

type test, with twenty to thirty minutes transcription period; Group 6, Dictation type test, with other miscellaneous length transcription periods.

A sample that would elicit responses from a comparable number of business teachers in each of these groups of states (states grouped according to type of test) was desirable. Since there were six groups, a total sample size of 500 was suggested as being a sufficient number for the questionnaire survey, with an equal number of persons being randomly selected from each of the groups designated. An important reason for this type of classification was that in this way only the states supplying tests would be represented in the sampling and an equal number of samples would be drawn from each group representing each type of test.

Assembling of the Mailing List

It was important that the mailing list consist of names and addresses of persons currently employed as business educators in public high schools; therefore, a letter was written to each State Supervisor of Business Education requesting an up-to-date list of the business teachers in the secondary schools of the states. In cases where a list was not available, it was necessary to refer

to Patterson's American Education[67] where the names of principals of public high schools were listed. In such instances, letters were addressed to the principal of the high school and a special request was made for him to direct the materials to the teacher (or teachers) of advanced shorthand and/or transcription.

All of the lists that were received, including lists compiled from Patterson, were arranged alphabetically by states within one of the six groups designated as a result of the original state test classification. After lists had been arranged properly within the group classification, each business educator's name and each principal's name from Patterson, on each of the lists, was numbered consecutively. Each group was numbered in a similar fashion, and a Table of Random Numbers was used for the random selection of names. An equal number of names was drawn from each of the six groups, with a total of 500 names completing the mailing list.

Mailing the Questionnaire

A total of 500 questionnaires was mailed to business teachers and principals who had been selected randomly for the study, together with a letter of

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[67] Patterson's American Education (Mt. Prospect, Illinois: Education Directories, Inc., 1967).

explanation regarding the purpose and importance of the study. Teachers were urged to complete and return the questionnaires and principals were directed to turn over the materials received to one of their business teachers.

Follow-Up of Outstanding Questionnaires

The first mailing of the 500 questionnaires to public high school teachers of advanced shorthand and transcription produced a total of 192 returns, or 38.4 percent. Of this amount there were 177 usable questionnaires and 15 unanswered questionnaires with letters explaining that the school did not offer classes in advanced shorthand or transcription.

After a period of two weeks, the first follow-up of questionnaires was completed which netted an additional 62 questionnaires or an accumulated percentage of 50.8. There were 56 usable questionnaires and 6 unusable.

After an additional period of two weeks, a second follow-up was completed which resulted in 32 questionnaires or an accumulated percentage of 57.2. There were 7 unusable questionnaires.

The third follow-up of questionnaires resulted in 3 usable questionnaires and 16 unusable.

It was evident from the poor showing of the third follow-up procedure that a fourth follow-up probably would

result in even fewer usable returns. Consequently, plans for a fourth follow-up were discarded.

The researcher achieved the following results:

	Number	Percent
Total Usable Questionnaires	261*	52.2
Total Returned, Unusable	44	8.8
	305	61.0
Total No Response	195	39.0
	500	100.0

*One questionnaire was not used because it arrived too late to be classified with other materials that had already been electronically processed.

Analysis of the Data Collected

A percentage analysis of the replies to the questionnaires and the implications will be discussed in Chapter V.

III. Ascertaining Comparability Between Performances on Teacher-Type Tests and a Selected State Civil Service Examination

Compiling the data in a suitable format which was embodied within the questionnaires and tests returned by business teachers and Civil Service Commissions made possible the statistical analysis of this data.

A review of the state questionnaires revealed that two of the larger states (California and Michigan) had adopted a novel testing procedure. This disclosure, coupled with another good fortune explained on the next page,

presented an ideal experimental situation. The Civil Service staff for the State of Michigan regularly administers stenographic shorthand tests on the requesting high schools' premises to all seniors who had had stenographic instruction. Here, located in close proximity to the researcher's home address, was an ample selection of students for oral dictation testing who had taken the Civil Service examinations in a state which fostered a radical departure from the conventional motif.

Nondictation Shorthand Tests Provide A Basis for Experimental Purposes

The salient features of these two states' tests embrace the following characteristics: Instead of taking customary oral dictation, the applicant for the stenographic position is given a printed dictation test, with instructions to write out in shorthand as much of the printed narration as possible within the allotted time. In the State of Michigan, four minutes is allowed for writing shorthand, whereas in California, five minutes.

At this point in the testing procedure in each of these two states, the printed dictation test was collected and the applicant was supplied with a printed transcript encompassing the same material, plus an IBM machine-scored answer sheet. California used a transcript with certain key words or phrases underscored and

numbered, some of which were inconsistent with the original copy. The applicant marked the answer sheet true or false depending upon whether the underscored material agreed with her shorthand notes. Michigan's transcript contained one or more blanks in each sentence. To the left of the transcript was a long, alphabetical list of words and phrases. Each of these words and phrases was keyed with an A, B, or C. The applicant selected the appropriate missing word or phrase from this list, and marked her IBM machine-scored sheet A, B, or C, accordingly. In both states the applicant was allowed 30 minutes to complete the answer sheet.

The two states concurred that the test was easy to administer, could be scored within a short time span, was economical, and met their particular needs. Furthermore, California conducted a study in 1949 to determine the validity of its nondictation testing procedure in comparison with conventional stenographic testing techniques. (See page 56.)

Such a radical and apparently successful departure from conventional testing concepts raised the possibility of adopting nondictation methods for classroom use, in order to attain the same benefits that these two states enjoy, namely, savings of time. For the teacher, this would mean reduction in time spent reading

numerous transcripts generated by speedbuilding tests. But before unequivocally recommending that business high school teachers avail themselves of this technique, the researcher aspired to demonstrate that the nondictation tests would lend themselves to the classroom environment. Accordingly the statistical comparisons between dictation and nondictation data were structured to bring out discrepancies or low correlations, if any, or to confirm that nondictation testing was feasible and practical for the classroom.

Questionnaires submitted by teachers nationwide denoted some variation in the characteristics of shorthand testing. Nevertheless, the great majority had enough distinctive points in common to engender a typical profile useful in comparing the nondictation and dictation testing techniques. The researcher used this profile except as noted below in administering teacher-type tests to students who had just taken the Michigan State Civil Service test.

Profile of the Teacher-Type of Shorthand Dictation Test

In order that the researcher would be certain that she was giving a typical teacher-type test, she constructed a profile of the teacher-type tests from an analysis of the questionnaires submitted to the teachers

and giving a test which followed this profile, with one exception: a period of 4 minutes, rather than 3 minutes, was used for comparative purposes with the state tests. (See Chapter VIII and the Appendix)

Administering the Civil Service Nondictation Shorthand Test

The Michigan Civil Service Commission, as previously noted, one of two state commissions using the nondictation testing technique, agreed to cooperate in a comparative study of stenographic orally dictated tests and nondictated tests. The Commission as part of its hiring program administers stenographic shorthand tests to all qualified high school seniors at any high school upon the request of the principal. In this study the Commission administered the test (the researcher's experimental test) as a part of its testing program. The researcher was not allowed to participate in any way with the preparation, the administering or the scoring of the test due to state regulations.

The student applicant was allowed a period of four minutes to copy in shorthand from the printed dictation materials supplied to her. Then she was alloted a transcription period of thirty minutes for selecting the proper answer by blackening a particular space on an IBM machine-scored sheet.

Scoring the Civil Service Nondictation Shorthand Test

The scoring formula used was the number of right answers minus one-third times the wrong answers. Therefore, the penalty for an error was greater than for an omission. The test had a total of 99 points. All scores of 20 points or below were not printed out by the computer; papers with scores of 21 points to 99 points were recorded. Therefore, the cut-off point was a score of 20 points.

Scores could not be identified by name because state law prohibited giving Civil Service examination scores to anyone other than the testee. As a result, all scores given to the researcher were merely identified by the Social Security number.

Administering the Teacher-Type Shorthand Dictation Test

Certain public high schools in the Greater Lansing Area were selected by the researcher for traditional oral testing. The schools chosen had previously requested that the Michigan Civil Service Commission administer its stenographic nondictation test to all seniors who had been trained in the stenographic skills during the course of their education. This type of request is a normal practice for many Michigan schools enabling qualified students to be employed by the state shortly after graduation.

Letters were mailed to the principals of these designated high schools explaining the purpose of the study and asking permission to administer the test (the control test) to the students who had taken the State Civil Service stenographic test. In all cases this dictated test was given within a week following the Civil Service test. (See Appendix for list of schools.)

The following procedure was used to insure uniformity and to acquaint the students with the testing process: The researcher orally dictated familiar practice material without transcription as a warm-up exercise. This was followed immediately by the actual test which consisted of a four-minute orally dictated letter at the rate of 80 words per minute. A period of thirty minutes was allowed for the transcription of the shorthand notes at the typewriter. The material dictated was of average difficulty (1.4 syllabic intensity) and had been selected from the Business Teacher magazine of the year 1959, which meant that in all probability this material would never have been dictated previously by the instructor. To insure that students would not be identified when comparing scores, students placed their Social Security number at the top of the first page of the transcript. This procedure made it possible to conform with the Michigan State law which protects the applicant's test score from being made public.

Scoring the Teacher-Type Shorthand Dictation Tests

All of the seniors' shorthand transcripts were scored according to the Gregg shorthand contest rules. Business education instructors and students involved were familiar with this method of scoring as it was the prevalent method used for regular classwork.

One error was charged for each of the following, and scores reported were the number of correct words transcribed in the time period allowed:

1. Each incorrectly transcribed word, each omitted or added word, each transposition, and each deviation from the copy as read.
2. Each major punctuation error when the sense of the context is affected.
3. Each misspelled word. (When the same word is consistently misspelled, deduct only once.)
4. Each uncorrected typographical error. (Neat erasures are acceptable.)
5. No deduction was made for improper paragraphing, capitalization or arrangement.

Comparison of the Scores of Both Tests

The results of the statistical comparison of scores will be presented in Chapter VII.

CHAPTER IV

ANALYSIS AND PRESENTATION OF THE DATA CONCERNING STATE CIVIL SERVICE TESTS AND TESTING TECHNIQUES

This chapter presents the results of a percentage analysis of replies from State Civil Service Commissions regarding their tests and testing techniques. In addition, this chapter also presents a statistical analysis of the difficulty of dictation materials of entry-level State Civil Service Tests and teacher-type tests.

PART I

A Percentage Analysis of the Data Obtained from Questionnaires Concerning State Civil Service Tests and Testing Techniques

Titles of State Commissions Administering State Stenographic Examinations

States were asked to check the titles of commissions administering the state stenographic examinations. Only one item was checked on the questionnaire. Table I

gives information regarding various titles of commissions administering state examinations.

TABLE 1.--Titles of state commissions administering state stenographic examinations as reported by 49 states

State Commission	States Responding	
	Number	Percent
1. State Civil Service Commissions	45	91.84
2. Other		
a. Employment Security Commissions	2	4.08
b. State Merit Systems	2	4.08
Total	49	100.00

Table 1 shows that 45 states, or 91.84 percent, indicated that their State Civil Service Commissions administered the test. Other titles of commissions mentioned were the Employment Security Commission and the State Merit System, reported by 2 states, or 4.08 percent, in each of these titled categories.

It is, therefore, evident that the most frequently mentioned commission giving stenographic tests is the State Civil Service Commission.

The import of this finding is that having Civil Service Commissions oversee the administration of all testing means that probably there are more uniform procedures used and that standards are set that are in line

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with the general needs of the various state offices and that there is an adequate staff to formulate and carry out the testing program. It implies that there is no costly duplication of testing procedures and that the requirements are uniform for the state as a whole. To the teacher it should mean that there is only one state-wide standard that is necessary for an entrance job and that there will be uniform evaluation and grading of the young applicant.

There is danger, however, that the Civil Service Commission may be out of close touch with actual practices or requirements of the various departments of the state offices and, therefore, set unrealistic standards.

It is recommended that the various Civil Service Commissions periodically invite departmental heads and business educators to review all testing procedures in order that all groups may benefit.

Step-Level Classifications Used for State Testing Purposes

States were asked to list the various step-level classifications they used for testing purposes within their state. More than one classification could be checked on the questionnaire. Table 2 shows the various classifications given.

TABLE 2.--Various step-level classifications indicated by the states for stenographic testing purposes as reported by the 49 states

Classification	States Responding	
	Number	Percent
1. Entry Level	49	100.00
2. Intermediate Level	47	95.91
3. Advanced Level	47	95.91
4. Secretarial Level	49	100.00
5. Court Reporter	23	46.93
6. Other		
Specialized fields (Legal and Medical)	4	8.16
Administrative Secretarial	4	8.16
Hearings Stenographers	2	4.08

Table 2 indicates that all 49 states, or 100 percent of those reporting, had an entry level classification; 47 states, or 95.91 percent, had an intermediate level; 47 states, or 95.91 percent, had an advanced level; 49 states, or 100 percent, had a secretarial level; and 23 states, or 46.93 percent, had a court reporter level. Other classifications listed were the specialized fields such as legal and medical stenographers as reported by 4 states, or 8.16 percent; administrative secretarial as reported by 4 states, or 8.16 percent; and hearings stenographers as reported by 2 states, or 4.08 percent.

Thus, all states give tests at the entry level and the secretarial level. Most of the states also give tests at the intermediate and advanced levels. Only a few states give stenographic tests at the specialized levels mentioned.

Formal entry and step-level examinations are advantageous to both Civil Service Commissions and stenographic candidates and employees. By establishing uniform, minimal education, experience, and achievement requirements at each level, Civil Service Commissions will be enabled to treat all applicants fairly and at the same time insure that only qualified personnel are selected for the various job classifications. Job applicants for stenographic positions can anticipate their future progress or chances for advancement; and, once employed, they will be stimulated to work toward higher step-levels because of the added prestige and increase in earnings usually associated with higher ratings.

A disadvantage to the system is that rigidity tends to become prevalent when everyone must prepare for and pass the same type of test.

The implication for teachers is that they should focus their attention on realistic goals for students in order to meet state entry-level requirements. Since all states have entry-level examinations, the teacher should prepare the students for some degree of proficiency in this respect.

Location of State Testing Centers

States were asked to give the location of places where their tests are given. More than one item could be checked on the questionnaire. Table 3 gives information regarding the locations of state stenographic testing places.

TABLE 3.--State stenographic testing locations as reported by the 49 states

	States Responding	
	Number	Percent
1. Capital City	37	75.51
2. Various Main Cities	45	91.83
3. High Schools	25	51.02
4. Other		
a. Employment Security Commission	5	10.20
b. Business Colleges and Universities	2	4.08
c. Local Communities	1	2.04
d. Resident temporarily located out of state. (Test given by another jurisdiction.)	1	2.04

Table 3 indicates that the various locations reported were as follows: 45 states, or 91.83 percent of the states, gave tests in the various main cities; 37

states, or 75.51 percent, gave tests at their capital; 25 states, or 51.02 percent, gave tests in high schools requesting the test. In addition, 5 states, or 10.20 percent, stated that the Employment Security Commission offices gave tests; 2 states, or 4.08 percent, stated that tests were given in business colleges or universities; 1 state, or 2.04 percent, listed local communities as test areas; and 1 state, or 2.04 percent, indicated giving tests to persons who were residents of their state but temporarily living out of the state.

It can be concluded from the analysis of the information supplied by the states that the stenographic test is given in a number of geographic locations, enabling any qualified person who is interested in applying for state employment to do so with little inconvenience. This is a good example of the state catering to the needs of the community to meet its own requirements. Of particular interest to this study is the fact that over 51 percent of the states responding indicated that Civil Service tests were given in the high schools. This implies that the student need not make arrangements to go to a distant city or a distant location within her own city to take tests but may be examined in her own school not only under the direction of the Civil Service Commission but also with the guidance of the teacher responsible for the student's

skills training. As a result of this familiar environment, a student probably will be more at ease and will tend to perform more effectively.

Because the teacher is aware of the fact that state testing will be conducted within the high school, she may work accordingly toward preparing students to meet the necessary requirements.

It is recommended that nonparticipating states investigate the advantages of testing at high schools. In this connection, it is also recommended that State Civil Service Commissions study the possibility of assembling testing materials especially designed for the high school group, which constitutes a large group, yet within the legal framework of the Commission's authority. The advantages of such a proposal is that the state gains experience coordinating their testing procedures with those of the teachers. They can begin to place reliance on the teachers and ultimately dispense with their own testing procedures for students. One state is already accepting the recommendations of teachers. As noted on page 75 the Federal Government is already accepting high school teachers' recommendations regarding skill competencies of job applicants.

Frequency of Civil Service Test Administration

States were asked to indicate the frequency of administering the state stenographic examinations. More than one item could be checked on the questionnaire.[67] Table 4 gives information concerning the frequency of stenographic test administration.

TABLE 4.--Frequency of administering state stenographic examinations as reported by the 49 states

Frequency	States Responding	
	Number	Percent
1. Daily	19	38.77
2. Two times a week	3	6.12
3. Weekly	17	34.69
4. Semi-monthly	5	10.20
5. Monthly	17	34.69
6. Every two months	1	2.04
7. Quarterly	1	2.04
8. Three times a year	1	2.04
9. Yearly	5	10.20
10. As need exists	13	26.53
11. Varies according to location	1	2.04

[67] It is possible that one state would check "daily" or "yearly" meaning that various step-level classification tests were given at different time intervals.

Table 4 indicates that 19 states, or 38.77 percent of the states, reported daily testing; 17 states, or 34.69 percent, reported weekly testing; 17 states, or 34.69 percent, reported monthly testing; and 13 states, or 26.53 percent, reported testing as the need existed. In addition, there were 5 states, or 10.20 percent, who indicated testing yearly; 5 states, or 10.20 percent, who indicated testing semi-monthly; 3 states, or 6.12 percent, who indicated testing twice a week; and 4 states, or 2.04 percent each who indicated testing every two months, quarterly, three times a year, or varying times according to location.

It is evident from the information received that testing is done very frequently ranging from daily testing to a varying time schedule.

The applicant apparently has ample opportunity to take the state stenographic tests whenever she feels that her skills are adequate. In the event that an applicant did not qualify, there is a chance for her to try again at an early date without having a long period of inactivity.

Reasons Given for Using Current Shorthand Performance Tests

States were asked to give reasons for using their current shorthand performance test as a part of the state

stenographic examination. More than one item could be checked on the questionnaire. Table 5 gives information regarding the reasons given for using current shorthand tests.

TABLE 5.--Reasons given by states for using current shorthand performance tests as a part of the state stenographic examination as reported by the 49 states

Reasons Given	States Responding	
	Number	Percent
1. Easy to administer	19	38.77
2. Easy to score	17	34.69
3. No other measurement available	5	10.20
4. Other		
Best measurement	13	26.53
Realistic duplicate of job situation	6	12.24
Equitable and uniform	4	8.16
Same test as used by schools	3	6.12
Validity	3	6.12
Federal Government Test	1	2.04
Employment Security Commission Test	3	6.12
Economical and available	1	2.04

Table 5 indicates that 19 states, or 38.77 percent of the states, reported that their test was easy to

administer; 17 states, or 34.69 percent, reported that it was easy to score; 5 states, or 10.20 percent, reported that no other measurement was available to them. Other reasons given by states were best measurement by 13 states, or 26.53 percent; realistic duplication of job situation by 6 states, or 12.24 percent; equitable and uniform by 4 states, or 8.16 percent; same test as used by schools by 3 states, or 6.12 percent; validity by 3 states, or 6.12 percent; federal government test by 1 state, or 2.04 percent; Employment Security Commission test by 3 states, or 6.12 percent; and economical and available by 1 state, or 2.04 percent.

States appear to be interested in easily administered and easily scored tests which will enable them to select the best qualified candidate. Their interest, presumably, is in determining quickly and economically the capabilities of the applicant for the state stenographic positions.

Number of Years Current Shorthand Tests Have Been Used

States were asked to check items regarding the number of years that the current shorthand test had been used by the states for stenographic examinations. Only one item could be checked on the questionnaire. Table 6 shows the number of years current shorthand test has been used.

TABLE 6.--Number of years current shorthand test has been used by states for stenographic examinations as reported by the 49 states

Length of Time	States Responding	
	Number	Percent
1. Less than two years	18	36.74
2. Two to five years	14	28.57
3. Six to eight years	7	14.29
4. Nine to eleven years	5	10.20
5. Other		
a. Over 20 years	1	2.04
b. Over 30 years	1	2.04
c. Employment Security Division determined length of time	1	2.04
6. No response	2	4.08
Total	49	100.00

Table 6 shows that 18 states, or 36.74 percent of the states, replied less than 2 years; 14 states, or 38.57 percent, stated 2 to 5 years; 7 states, or 14.29 percent, stated 6 to 8 years; 5 states, or 10.20 percent, stated 9 to 11 years. Other replies were as follows: 1 state, or 2.04 percent, reported over 20 years; 1 state, or 2.04 percent, reported over 30 years; 1 state, or 2.04 percent, reported relying on Employment Security Division for current tests. There were 2 states, or 4.08 percent, which did not respond to this question.

Replies to this question indicate how current the shorthand testing materials are. Five- to 10-year-old tests may not be outdated, but continued use of old materials may indicate that states are not interested in, or aware of the adequacy or the inadequacy of their testing materials.

Replies show that over 60 percent of the states kept their shorthand material up to date by changing their tests within a period of from less than 2 years to 5 years. However, a large percentage, 30 percent, have not updated materials for a period of from 6 to 30 years.

It is recommended that the states that are slow to adopt new material review their tests periodically both as to validity and reliability and to determine whether the tests are in harmony with the findings of recent research in psychology and education. All outmoded materials should be discarded and new sections developed.

The majority of states are aware of the necessity of rotating tests regularly, in order that job applicants who repeat the test after a certain time interval will not have remembered any portion of the test, thereby scoring higher because of test familiarity. In this way it is realistic to assume that the Commission can make a more accurate evaluation of the applicant. More important is the fact that the process of test rotation by states implies that the responsibilities of proper test administration are being carried out.

Frequency of Shorthand Performance Test Changes

States were asked to indicate the frequency of shorthand performance test changes. One item was to be checked on the questionnaire. Table 7 reports the frequency of shorthand performance test changes.

TABLE 7.--Frequency of shorthand performance test changes as reported by the 49 states

Period of Time	States Responding	
	Number	Percent
1. Use alternating forms continuously	6	12.24
2. Every three months	2	4.08
3. Yearly	5	10.21
4. Every two years	3	6.12
5. Every two to three years	1	2.04
6. Whenever need arises	31	63.27
7. Dependent on Employment Security Commission	1	2.04
Total	49	100.00

Table 7 shows that 31 states, or 63.27 percent of the total, changed the shorthand portion of the state stenographic test whenever the need arose. There were 6 states, or 12.24 percent of the total, which used alternating forms continuously; 5 states, or 10.21 percent, which alternated yearly; 3 states, or 6.12 percent, which changed every 2 years; 2 states, or 4.08 percent, which

changed every 3 months; 1 state, or 2.04 percent, which changed every 2 to 3 years; and 1 state, or 2.04 percent, which reported that their change was dependent upon the Employment Security Commission.

Replies to this question indicated that changes were made in the shorthand performance test by most of the states whenever they felt that the need arose. This description is rather broad, but it seemed evident that states changed tests whenever they were prompted to do so.

Frequency of Test Rotation of Stenographic Examinations

States were asked to note the frequency of rotation of the form of the stenographic examination during a six-month period. Table 8 gives data concerning the rotation of the stenographic examinations.

TABLE 8.--Frequency of form of stenographic test rotation during six month period as reported by the 49 states

Amount of Rotation	States Responding	
	Number	Percent
1. No rotation	25[a]	51.02
2. Choice of tests	35[b]	71.42

[a]Five states reported using both methods. The same test was used for lower and/or higher level classifications and performance portion only for state-wide use.

[b]Six states reported using both methods. A choice of tests was used for higher level classifications and lower level classifications, individual departments, one year and three months periods, and the written portion of the test.

Table 8 shows that 25 states, or 51.02 percent of the replies given, showed no rotation in the forms of the tests. Of this figure, there were 5 states who reported the use of both methods; that is, rotating the performance portion of the test only, or rotating for lower level classifications. There were 35 states, or 71.42 percent, who indicated rotation of tests; however, 6 states reported using both methods for higher and lower level classifications and for individual departments.

Percentage of Applicants Who Passed the Shorthand Portion of State Stenographic Examinations

States were asked to check the questionnaire with regard to the percentage of their applicants who passed the shorthand portion of the state stenographic examination. One item was to be checked on the questionnaire. Table 9 shows percentage of applicants passing the shorthand portion.

Table 9 shows that there were 2 states, or 4.08 percent, that indicated a 20 percent to 30 percent passing percentage. There were 4 states, or 8.16 percent, which indicated that 21 percent to 40 percent passed; 10 states, or 20.41 percent, which indicated that 41 percent to 50 percent passed; 5 states, or 10.21 percent, which indicated that 51 percent to 60 percent passed; 10 states, or

20.41 percent, which indicated that 61 percent to 70 percent passed; 11 states, or 22.45 percent, which indicated that 71 percent to 80 percent passed; 1 state, or 2.04 percent, which indicated that 90 percent passed. There were 4 states, or 8.16 percent, which indicated that the percentage varies from time to time. There were 2 states, or 4.08 percent, which did not respond to the question.

TABLE 9.--Percentage of applicants passing the shorthand portion of state stenographic examinations as reported by the 49 states

Percentage Passing	States Responding		Cumulative Percentage
	Number	Percent	
1. 20 to 30	2	4.08	4.08
2. 31 to 40	4	8.16	12.24
3. 41 to 50	10	20.41	32.65
4. 51 to 60	5	10.21	42.86
5. 61 to 70	10	20.41	63.27
6. 71 to 80	11	22.45	85.72
7. 90	1	2.04	87.76
8. Varies	4	8.16	95.92
No response	2	4.08	100.00
Total	49	100.00	

Stated in another way, from the cumulative percentages in Table 9, it can be noted that 63.27 percent

of the states reported that 30 percent or more of the applicants for the state stenographic examinations failed the test.

These findings might be interpreted in line with a statement of Lamb, who says:

> It should be understood that the results of one skills test are likely to be misleading. . . . A skills test measures not the ability of the testee to perform on the job, but her ability to perform under test conditions, and between these two there is a great deal of difference. If the testee had had the opportunity to practice taking tests under the conditions that will prevail in her actual testing period, her chances of success are greater than they would be otherwise, but even so, an excitable temperament, too great anxiety to succeed, or an unfavorable health condition will throw the testee off balance--and balance is essential to skill.[68]

In further discussion Lamb points out that unfortunately in many testing situations where large groups are examined, the dictators may not have had sufficient experience in reading aloud timed dictation, and monitors walk around the room distracting the testees. In addition, many of the applicants have been out of school for a number of years and lack confidence in a test situation.

It is recommended, therefore, that states examine their testing conditions to make sure that their applicants are not handicapped in any of the above ways and that testing rooms are properly equipped with adequate

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[68] Lamb, op. cit., p. 160.

typewriters, etc. It is also important to let applicants know that they will be able to retake tests at a later date if they should fail at this time.

Hylton[69] reported in 1946 that the failure rate in Federal Government stenographic tests was over 50 percent by stenographers who were already working under a temporary employment certificate basis and needed to take tests in order to qualify for permanent employment. She blamed shorthand and typing teachers and made recommendations that would be applicable today. However, as noted above, Lamb criticized the testing procedures more than the lack of preparation on the part of the applicant.

Hylton continues:

> Teachers should assist administrators in setting up programs that insure better selection of students as prospective office employees. They should take an active interest in planning more logical and more fruitful courses of study. They should make certain that such courses are based on present-day job needs, keeping constantly in mind the ultimate objective, that is, to provide employers with competent initial workers.[70]

In addition, she stated:

> Definite standards for graduation and placement should be established and adhered to. Teachers should keep pace with improved methods and techniques of teaching, which as a rule shorten the time required for acquiring basic office skills. Recently developed visual aids

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[69]May C. Hylton, "Results of the Civil Service Examinations for Stenographers and Typists," Journal of Business Education, 22:31, September, 1946, p. 31.

[70]Ibid., p. 31.

> should be secured and properly used. A systematic follow-up program for former students should be carried on. Checks should be made with those students, their employers, and particularly with their immediate supervisors to learn about both general and specific weaknesses in the school training. Corrective action should then be undertaken.[71]

To account for this massive failure to qualify for permanent employment with the Federal Civil Service Commission, the researcher feels neither the teachers as a group nor the possible faulty testing procedures of the government are singly to blame. Rather, it is a shared indictment of both groups and should be corrected by an education process.

Factors Involved in a Change of Passing Score

States were asked to indicate on the questionnaire the factors involved in a change of passing score on the shorthand portion of state stenographic tests. More than one item could be checked. Table 10 shows the factors involved in change.

Table 10 shows that there were 23 states, or 46.93 percent, of the states who reported change of passing scores when there was a great need for stenographers in state government offices. There were 18 states, or 36.73 percent, which reported a change of passing score when a change of standards was noted for their tests; and 13 states, or 26.53 percent, reported a change of passing

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[71] Ibid., p. 31.

score when there was a change of test. One state, or 2.04 percent, indicated a change of passing score on the advice of department heads. There were 15 states, or 30.60 percent, who did not reply to this question.

TABLE 10.--Factors involved in a change of passing score on the shorthand portion of state stenographic tests as reported by 49 states

Factors	States Responding	
	Number	Percent
1. Needs of the market	23	46.93
2. Change of standards	18	36.73
3. Change of test	13	26.53
4. Advice of department heads	1	2.04
5. No response	15	30.60

Table 10 indicates that 30 states, or 61.22 percent, did not change their level of passing score within the past two years. There were 17 states, or 34.70 percent, which changed their level only once; and 2 states, or 4.08 percent, which changed twice. There were 8 states, or 16.33 percent, which raised their level only once; and 1 state, or 2.04 percent, raised their standards twice. There were 9 states, or 18.37 percent, which lowered their standards once; and 1 state, or 2.04 percent, lowered their standards twice during a two year period.

The importance of these replies is that most of the states apparently recognized the need to change passing scores when there was a change in the demand for stenographic help which in recent years has been increasing. There is such a great demand for workers that schools, unfortunately, have not been able to train enough people to fill all vacant stenographic positions. Change of passing scores was reported also with a change in standards and a change of test. It is interesting to note that 15 states did not reply to this question. The researcher wonders if it was for the reason that they did not want to divulge this information.

It is recommended that states which are not now following this procedure of changing their passing scores check periodically to see if their levels of passing scores are in line with the needs of the various state governmental offices and the supply of stenographic help that is available.

Number of Times Passing Score Was Changed

States were asked to indicate on the questionnaire the number of times that the level of passing scores was changed, if any, within the past 2 years; and if so, whether standards raised or lowered. Only one item could be checked for this question. Table 11 gives data regarding changes of levels of passing scores.

TABLE 11.--Changes of levels of passing scores for the shorthand portion of the state stenographic tests within the past two years as reported by the 49 states

Number of Times Level Changed	States Responding		No Change in Standards		Standards Raised		Standards Lowered	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
1. None	30[a]	61.22	30	61.22				
2. Once	17	34.70			8	16.33	9	18.37
3. Twice	2	4.08	—	———	1	2.04	1	2.04
Total	49	100.00	30	61.22	9	18.37	10	20.41

[a]There were 4 states which reported that long term trends have been to lower standards due to the increasingly acute and continuing shortage of stenographers.

Table 11 shows that the replies to this question did not indicate any great changes in the levels of passing scores within the past two years, for there were almost as many states reporting a raise in standards as there were reporting a lowering of standards. There was an indication by 4 of the states that the long-term trend had been to lower standards due to the "increasingly acute and continuing shortage of stenographers."

This reply implies that perhaps over a longer period of time there have been changes in passing levels. Referring to the previous question with regard to the factors involved in a change of the level, needs of the market have been great over a long period of time and would, therefore, demand some change in levels when a shortage of stenographers was apparent.

Types of Tests Used for the Shorthand Portion of State Stenographic Examinations

States were asked to check the questionnaire with regard to the type of test used for the shorthand portion of the state stenographic examination. More than one item was checked, inasmuch as some states had more than one type of test in use depending upon the classification level. Table 12 gives information regarding the type of test used.

TABLE 12.--Types of tests used for the shorthand portion of state stenographic examinations as reported by 49 states

Types of Tests	States Responding	
	Number	Percent
1. Orally dictated test, transcribed at the typewriter.	46[a]	93.87
2. Orally dictated test, fill-in type of transcript.	6[b]	12.24
3. Printed test used for copying shorthand fill-in type transcript, IBM machine-scored.	2	4.08

[a]Four states indicated that they used more than one method. Oral dictation was used for Hearings Reporters only.

[b]One state indicated that they used this method only for lower level classifications.

Table 12 indicates that 46 states, or 93.87 percent, of the states stated that they used the orally dictated test transcribed at the typewriter. There were 4 of these states which indicated that they used more than one method; oral dictation was used for Hearings Reporters only. There were 6 states, or 12.24 percent, which indicated that an orally dictated test, with a fill-in type transcript was used. One state indicated that this method was used only for lower level classifications. There were 2 states, or 2.04 percent, who stated that they used the printed copy test from which shorthand was

written and a fill-in type transcript was used for IBM machine-scoring. Both states had a large population.

Most of the states follow the traditional pattern of the oral type of dictation test with a typewritten transcript, the same type of test that is used by the great majority of the classroom teachers. A few of the states reported variations in dictation with the material on tape instead of an actual dictation by a monitor. In both cases, however, the dictation was carefully timed similar to the learning situation in the high school classroom. A few of the states were using a fill-in type transcript and this seems to be the trend for larger states who are presumably interested in the administrative problems involved in large group testing. (See Review of the Literature, page 15 for experiments conducted with this type of approach in mind.) One state reported the following:

> We experimented several years ago with oral dictation and a fill-in type transcript and found no correlation between scores on that and the score under our normal procedure, so we abandoned it, although it would have been easier to score.

The two states that reported using the printed test which was copied in shorthand and transcribed using a fill-in type transcript reported good results and felt that this type of test suited their situations very well. Not only was such a test easy to administer, but it

provided good results from their standpoint, and there was no need for expensive equipment in testing rooms. There were many other administrative efficiencies and economies that were related with adopting simplified methods of grading.

This discovery that only a few states were using objective tests is extremely enlightening. The researcher in line with many business teachers had thought originally that there would be more states using objective type tests than the survey showed.

Length of Time Allowed for Writing Shorthand Notes

States were asked to indicate the length of time that was allowed for writing the shorthand notes from dictation or the process of copying from printed materials in shorthand for the shorthand portion of the state stenographic examinations. Only one response was requested from each state, with regard to entry-level tests. Table 13 presents information regarding time allowed.

Table 13 shows that 32 states, or 65.30 percent, listed 3 minutes as the time allowed; 3 states, or 6.12 percent, listed 4 minutes; 4 states, or 8.16 percent, stated that 5 minutes was allowed; and 2 states, or 4.08 percent, gave 6 minutes as their time allowance. Other

times listed were as follows: 2 states, or 4.08 percent, 3 1/2 minutes; 1 state, or 2.04 percent, 2 minutes; 1 state, or 2.04 percent, 3 minutes 10 seconds; 1 state, or 2.04 percent, 10 minutes.

TABLE 13.--Time allowed for writing shorthand notes from dictation or copying from printed material in shorthand for the shorthand portion of the state stenographic examinations as reported by the 49 states

		States Responding			
		Writing From Dictation		Copying Printed Materials	
	Time Allowed	Number	Percent	Number	Percent
1.	Three minutes	32	65.30		
2.	Four minutes	3	6.12	1	2.04
3.	Five minutes	4	8.16	1	2.04
4.	Six minutes	2	4.08		
5.	Other				
	a. 2 minutes	1	2.04		
	b. 3 minutes, 10 seconds	1	2.04		
	c. 3 1/2 minutes	2	4.08		
	d. 10 minutes	1	2.04		
6.	No response	1	2.04		
	Total (49) (100 percent)				

In the states that used printed materials to be copied in shorthand, 1 state, or 2.04 percent, allowed

4 minutes; and 1 state, or 2.04 percent, allowed 5 minutes for copying.

There was 1 state, or 2.04 percent, which did not respond to this question.

Timed oral dictation, tests given for a period of 3 minutes, was used by almost 70 percent of the State Civil Service Commissions as a part of the state stenographic tests. Combined with the speed level of 80 words per minute at the entry level, this is a very minimum requirement and should cause little difficulty for the trained stenographic student. Time periods for copying printed material in shorthand were 4 and 5 minutes.

States giving 6- and 10-minute periods of dictation did not indicate whether there was a slight break in dictation as might have been done in the classroom.

It is recommended that all state testing commissions using oral dictation use the 3-minute dictation period inasmuch as this seems to be an adequate time allowance for measuring dictation speed according to the United States Employment Service Study.

Sources Used in Selecting Materials for the Shorthand Portion of the State Stenographic Examinations

States were asked to report the sources used in selecting materials for the shorthand portion of the state

stenographic examination. More than one response could be made to the items listed in the questionnaire. Table 14 gives the sources used.

TABLE 14.--Sources used in selecting materials for the shorthand dictation materials used in the shorthand portion of the state stenographic examinations as reported by 49 states

	Sources	States Responding	
		Number	Percent
1.	Business education books	12	24.48
2.	Business education magazines	8	16.32
3.	Composed from word lists	6	12.24
4.	Assistance from other State Civil Service Commissions	5	10.20
5.	Assistance from State Employment Services	7	14.28
6.	Assistance from Federal Government	23	46.93
7.	Construction of own testing materials from actual materials in file--letters and hearings	14	28.57
8.	Other books and appropriate materials	3	6.12
9.	No response	2	4.08

Table 14 shows that 23 states, or 46.93 percent, listed that "assistance from the Federal Government" was their most frequently used source. There were 14 states, or 28.57 percent, which listed "construction of own testing materials from actual materials in files--letters

and hearings" as their source; and 12 states, or 24.48 percent, indicated "business education books" as their source. Other responses made were as follows: 8 states, or 16.32 percent, business education magazines; 6 states, or 12.24 percent, composed from word lists; 7 states, or 14.28 percent, assistance from other State Employment Services; 5 states, or 10.20 percent, assistance from other State Civil Service Commissions; and 3 states, or 6.12 percent, from other books and appropriate materials. There were 2 states, or 4.08 percent, which did not respond to this question.

Most of the states used business education books and magazines and asked assistance from the Federal Government in selecting materials for the shorthand dictation tests. Both sources supply materials that are specially prepared for shorthand testing; therefore, states apparently used adequate sources for material selection. Additional good sources mentioned are other State Civil Service Commissions and the State Employment Service. Self-constructed tests designed from materials in their files might prove useful in testing on high levels such as in specialized fields of legal, medical, and hearings stenographers but might not be useful for entry-level tests because of the difficulty level and specialization unless careful measurements were applied.

The use of word lists in preparing dictation materials for the entry-level might also tend to make dictation materials more difficult or specialized in their approach.

It is recommended that states continue to choose good sources for selecting testing materials. If it is necessary to use materials from their files, they should be selected carefully so that they will relate closely to the job activity.

Accuracy Standards Required for the Shorthand Transcript of State Stenographic Examinations

States were asked to report the accuracy standards for the shorthand transcript of the shorthand section of state stenographic examinations. Only one response was made by each state. Table 15 presents data concerning accuracy standards.

Table 15 shows that 13 states, or 26.53 percent, indicated using a maximum number of errors standard; and 11 states, or 22.45 percent, indicated that a special formula was used. There were 7 states, or 14.29 percent, which used the 95 percent accuracy level; and 5 states, or 10.21 percent, used the 70 percent accuracy level. The remainder of the states reported as follows: 4 states, or 8.16 percent, reported that their accuracy standard varied with each group tested; 2 states, or 4.08 percent,

reported mailable copy; 2 states, or 4.08 percent, reported 85 percent accuracy; 1 state, or 2.04 percent, reported minimum transcription rate; 1 state, or 2.04 percent, reported 97.51 percent accuracy; 1 state, or 2.04 percent, reported 90 percent accuracy; and 1 state, or 2.04 percent, reported 75 percent accuracy. There was 1 state, or 2.04 percent, which did not reply to this question.

TABLE 15.--Accuracy standards for the shorthand transcript of the shorthand section of state stenographic examinations as reported by 49 states

Accuracy Standards	States Responding	
	Number	Percent
1. 95 percent accuracy	7	14.29
2. Mailable copy	2	4.08
3. Other		
a. Maximum number of errors	13	26.53
b. Special formula used	11	22.45
c. Varies with each group tested	4	8.16
d. Minimum transcription rate	1	2.04
e. 97.5 percent accuracy	1	2.04
f. 90 percent accuracy	1	2.04
g. 85 percent accuracy	2	4.08
h. 75 percent accuracy	1	2.04
i. 70 percent accuracy	5	10.21
4. No response	1	2.04
Total	49	100.00

Replies show that almost 49 percent of the states use maximum number of errors allowable or a special formula as their standard of accuracy measurement while almost 35 percent of the states quote accuracy percentage levels from 70 percent up to 97.50 percent. There seems to be no universal agreement on accuracy standards among the various states except that in some instances the formula mentioned is the same as used in a few states--some of the same states that commented previously that they had used other Civil Service Commissions as their source of testing materials.

Presumably it can be concluded that states are setting standards according to their own needs.

Criteria Used for Determining the Passing Score for the Shorthand Portion of the State Stenographic Examinations

States were asked to give the criteria used for determining the passing score for the shorthand portion of the state stenographic examinations. Only one response was made by each state. Table 16 gives data concerning the criteria used.

Table 16 shows that 20 states, or 40.82 percent, reported establishing a percent of correct answers according to a set scale in determining the passing score for the shorthand portion of the state stenographic

examinations. There were 10 states, or 20.40 percent, which reported various accuracy levels; 7 states, or 14.29 percent, reported an arbitrary cut-off point being established according to the needs for stenographers in their area. There were 6 states, or 12.25 percent, which reported using a special formula as their criteria for determining the passing score. The remainder of the states reported as follows: 1 state, or 2.04 percent, flexible cut-off point according to needs for stenographers; 1 state, or 2.04 percent, combination of speed and accuracy levels; 1 state, or 2.04 percent, scoring same as Federal Government; 1 state, or 2.04 percent, minimum transcription rate; and 2 states, or 4.08 percent, no response.

It is important to note that over 40 percent of the states reported using a percent of correct answers according to a scale as their criteria for determining a passing score for the shorthand portion of the state stenographic test; and that only slightly over 20 percent of the states used accuracy levels. This implies that passing scores are set according to each state's requirement and that a scale of measurement is set. An additional 6 states used a special formula to evaluate tests and determine scores, and 7 states used an arbitrary cut-off point according to needs of stenographers within their area. It is apparent from these replies that the criteria

used for determining passing scores allow for flexibility in grading and does not compare with the methods used by teachers.

TABLE 16.--Criteria used for determining the passing score for the shorthand portion of the state stenographic examinations as reported by the 49 states

Criteria Used	States Responding	
	Number	Percent
1. Percent of correct answers according to a scale	29	40.82
2. Accuracy levels	10	20.40
3. Arbitrary cut-off point according to needs for stenographers	7	14.29
4. Special formula used	6	12.25
5. Flexible cut-off point according to needs for stenographers	1	2.04
6. Combination of speed and accuracy levels	1	2.04
7. Scoring same as Federal Government	1	2.04
8. Minimum transcription rate	1	2.04
9. No response	2	4.08
Total	49	100.00

The replies to this question related closely to the previous one in which accuracy standards were spelled out more clearly. There seemed to be no uniformity in the criteria used and it might be interesting if this

information could be dispensed to the high schools involved in training the stenographic student.

Types of Tests Incorporated in the State Stenographic Examination

States were asked to check the questionnaire with regard to the types of tests incorporated in the state stenographic examination. More than one item could be checked in this question. Table 17 shows the types of tests used.

Table 17 shows that all 49 states, or 100 percent of the states reporting, gave shorthand speed and accuracy tests at the entry level for the state stenographic examinations. There were 41 states, or 83.67 percent, which reported giving typing speed and accuracy tests as a part of their examination and 42 states, or 85.71 percent, also gave a general clerical test. There were 32 states, or 65.30 percent, which reported giving an English usage and Spelling test; and 16 states, or 32.65 percent, gave general information tests. Other tests given as listed by the states are as follows: office procedures and supervision reported by 10 states, or 20.40 percent; oral examination reported by 2 states, or 4.08 percent; power-written test by 2 states, or 4.08 percent; bookkeeping reported by 1 state, or 2.04 percent; and transcription reported by 1 state, or 2.04 percent. There were 2

states, or 4.08 percent, which reported that training and experience were also considered along with the formal testing that was done.

TABLE 17.--Types of tests incorporated in the state stenographic examination as reported by 49 states

Types of Tests	States Responding	
	Number	Percent
1. General information test	16	32.65
2. General clerical test	42	85.71
3. Typing speed test	41	83.67
4. Typing accuracy test	41	83.67
5. Shorthand speed test	49	100.00
6. Shorthand accuracy test	49	100.00
7. English usage and spelling test	32	65.30
8. Other tests		
a. Office procedures and supervision	10	20.40
b. Oral examination	2	4.08
c. Power written test	2	4.08
d. Rating of training and experience	2	4.08
e. Bookkeeping	1	2.04
f. Transcription	1	2.04

All states required demonstration of proficiency in taking dictation and transcribing written shorthand or machine-shorthand notes, but only 41 states required typing speed and accuracy tests. The English usage and spelling test was next in importance followed by a general clerical test and a general information test. A few other types of specialized tests were mentioned as being a part of the whole test. Testing for the stenographic position is, therefore, based not only on the demonstration of skill proficiency but also on other skills having to do with the use of words, spelling, and general intelligence.

With regard to testing for job competency, Hardaway states:

> Vocational competence for a specific job requires reasonable competence in five areas: (1) capacity and aptitude, (2) personal characteristics, (3) background and general training, (4) basic information, and (5) specialized information and skills. It follows, then, that all these phases of job competence must be measured in order to state the standards of competence in quantitative terms.[72]

Most states then have tested for the five areas mentioned above; and, therefore, seem to have adequate testing coverage for the stenographic positions. The

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[72]Hardaway, op. cit., p. 263.

references made to oral examinations and training and experience are only for higher step-level classifications.

It is recommended that states continue their current testing coverage.

Methods Used for Scoring the Shorthand Portion of State Stenographic Tests

States were asked to check the questionnaire with regard to the method used for scoring the shorthand portion of the state stenographic examinations. Only one response was given for each state. Table 18 shows the methods used.

TABLE 18.--Methods used for scoring the shorthand portion of the state stenographic examinations as reported by the 49 states

Scoring Method	States Responding	
	Number	Percent
1. Machine scored	4	8.16
2. Hand scored	42	85.72
3. Combination of machine scoring and hand scoring	3	6.12
Total	49	100.00

Table 18 shows that 42 states, or 85.72 percent of the total states replying, indicated that they used hand scoring methods in checking the shorthand portion of the stenographic examination. There were 4 states, or

8.1 6 percent of the total, which used machine scoring methods; and 3 states, or 6.12 percent, used a combination of machine and hand scoring methods.

Although hand scoring methods have been reported by most of the states, there is evidence of machine scoring and combinations of hand scoring and machine scoring methods being used by over 14 percent of the states. With the development of automated equipment, it is possible to increase the speed of all office operations and, therefore, some of the states have availed themselves of these methods. Some of this equipment involves scoring of specially marked papers, scanning machines for checking typewritten materials, etc. Since states are administratively oriented, they could develop tests that are more easily scored; however, care should be taken regarding the validity and reliability of tests.

It is recommended that states who are not now using newer methods acquaint themselves with automated equipment that could speed up their scoring process. It is further recommended that teachers in larger school districts, where there is sufficient money available, check into the possibility of obtaining mechanized equipment for their use or the possibility of obtaining clerical help for the time-consuming process of checking shorthand transcripts.

Length of Time Allowed for Transcribing

States were requested to give the length of time allowed for transcribing the shorthand notes at the typewriter or to fill in a skeleton transcript of the dictation. Only one response was given for each state. Table 19 gives lengths of time allowed.

Table 19 shows that 14 states, or 28.57 percent of the total, indicated a time allowance of 20 minutes for a typewritten transcript. There were 10 states, or 20.40 percent, which allowed 3 minutes; 5 states, or 10.20 percent, allowed 30 minutes; and 4 states, or 8.16 percent, allowed 15 minutes. In addition the following was reported: 3 states, or 6.12 percent, 5 minutes; 2 states, or 4.08 percent, 10 minutes; 1 state, or 2.04 percent, 4 minutes; 1 state, or 2.04 percent, 6 minutes; 1 state, or 2.04 percent, 12 minutes; 1 state, or 2.04 percent, 40 minutes.

States using the fill-in type of transcript reported as follows: 1 state, or 2.04 percent, 20 minutes; 1 state, or 2.04 percent, 25 minutes; 3 states, or 6.12 percent, 30 minutes.

Time allowed for transcribing notes ranged from 3 minutes to 40 minutes. States allowing shorter periods for transcription, from 3 minutes to 12 minutes, gave no indication of whether or not they expected complete

transcripts, but experience and common sense would lead the researcher to assume that this time allowance was for a partial transcript.

TABLE 19.--Time allowed for transcribing shorthand notes at the typewriter or fill-in type transcript form of test as reported by 49 states

Time Allowed	States Responding: Typewritten Transcript Number	Typewritten Transcript Percent	Fill-in Transcript Number	Fill-in Transcript Percent
1. 20 min.	14	28.57	1	2.04
2. 25 min.			1	2.04
3. 30 min.	5	10.20	3	6.12
4. Other				
a. 3 min.	10	20.40		
b. 4 min.	1	2.04		
c. 5 min.	3	6.12		
d. 6 min.	1	2.04		
e. 10 min.	2	4.08		
f. 12 min.	1	2.04		
g. 15 min.	4	8.16		
h. 40 min.	1	2.04		
5. No response	2	4.08		
Total	(49)	(100 percent)		

According to Calder (See page 24) there is evidence to indicate that a high degree of correlation exists between the first few minutes of transcription and a complete transcript. This implies that there is no need for lengthy periods of transcription if the same results can be obtained in shorter periods of transcription. Tests can, therefore, be developed with shorter periods allowed for transcription. It is the researcher's recommendation that this procedure be investigated for possible adoption. It is further recommended that teachers survey the scoring techniques of their particular State Civil Service Commissions and experiment with some of the methods used.

Criteria Used for Measurement of the Difficulty of the Material Used for the Shorthand Section of the State Stenographic Examinations

States were asked to report the criteria they established to determine the measurement of the difficulty of the material used for the shorthand section of the state stenographic examination. More than one response was allowed for this question. Table 20 shows criteria used for measurement of difficulty.

Table 20 shows that 17 states, or 34.69 percent, reported syllabic intensity, and 10 states, or 20.40

Percent, reported using the standard word as their measurement of difficulty for the material used in the shorthand portion of the stenographic examination. In addition, the following was reported: 8 states, or 16.32 percent, actual word count; 8 states, or 16.32 percent, no measurement; 4 states, or 8.16 percent, Federal Government recommendation; 2 states, or 4.08 percent, evaluation of suitability by person constructing test; and 1 state, or 2.04 percent, judgment of Employment Security division. There were 2 states, or 4.08 percent, which did not respond to this question.

Over one-half of the replies indicated that they used the standard word or syllabic intensity as their criteria for the measurement of the difficulty of the dictation materials used. However, actual word counts, and no measurement, as reported by each of 8 states, respectively, was surprising. In addition, comments such as "measurement by stenographer's judgment" or "evaluation of suitability by person constructing test" are implications that unreliable measures were employed. When the researcher examined tests available from the 38 states, she found syllable intensity figures running from 1.1 to 1.8. (See Part II of this chapter for a statistical analysis of the difficulty level of tests for the 38 states.)

TABLE 20.--Criteria used for measurement of the difficulty of the material used for the shorthand section of the state stenographic examinations as reported by 49 states

Criteria Used	States Responding	
	Number	Percent
1. Standard word[a]	10	20.40
2. Actual word count	8	16.32
3. Syllabic intensity[b]	17	34.69
4. No measurement	8	16.32
5. Other measurement		
a. Federal Government recommendation	4	8.16
b. Stenographer's judgment	1	2.04
c. Evaluation of suitability by person constructing test	2	4.08
d. Employment Security division's judgment	1	2.04
6. No response	2	4.08

[a]There were 2 states which reported using both the standard word and syllabic intensity.

[b]There were 2 states which reported using both syllabic intensity and standard word.

One state reported:

> We attempt to equate various dictations used in terms of the standard word count and syllabic weighting. We do not find this to be an entirely satisfactory method of equalizing dictations.

However, authorities in the field of shorthand and transcription make the following comments.

Leslie[73] discusses measurement of dictation materials stating that:

> . . . accurate measurement is the first step toward equating the difficulty of dictation materials. . . . There is no significance in any achievement standard unless there is some way of judging the difficulty of the matter on which the achievement was made.

Lamb[74] discusses syllabic intensity as a measurement of difficulty of shorthand dictation materials:

> . . . difficulty of material is judged to some extent by its syllabic intensity. One word does not equal another word in length or difficulty; therefore, we attempt to determine and control difficulty of timed dictation through syllable count.
>
> The total number of syllables in a dictation passage divided by the actual number of words gives the syllabic intensity of the material.

Lamb[75] defines the standard word.

> . . . the standard or average word in shorthand contains 1.4 syllables. Dictation material is counted out with 14 syllables to every 10 words for timing purposes, 21 syllables for every 15 words, 28 syllables for every 20 words, etc.

It should be pointed out that there is disagreement among the teachers, and researchers have severely criticized the use of syllabic intensity as the best measurement of difficulty and have recommended other methods. (See page 28.) As yet, however, to the researcher's knowledge, these have not been adopted.

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[73] Leslie, op. cit., p. 191.

[74] Lamb, op. cit., p. 81.

[75] Ibid., p. 81.

It is recommended that all states scrutinize their concept of difficulty measurement to see if it is the most accurate measurement available that is consistent with their needs. It is also recommended that teachers look over their tests to see if they are using a syllabic intensity that is necessary for proper instruction.

Speed Standards Required at Each Step-Level Classification

States were asked to check the questionnaire with regard to the speed standards to be attained at each step-level classification for the shorthand portion of the state stenographic examination. Only one item could be checked under each speed level classification. Table 21 shows the speed standards required.

TABLE 21.--Speed standards at each step-level classification of the shorthand section of the state stenographic examinations as reported by 49 states

Classification Level	States Responding	
	Number	Percent
1. Entry Level		
60 words per minute	8	16.33
70 words per minute	2	4.08
72 words per minute	1	2.04
80 words per minute	36	73.47
90 words per minute	2	4.08
Total	49	100.00

TABLE 21.--Continued

Classification Level	States Responding	
	Number	Percent
2. Intermediate Level		
70 words per minute	3	6.12
80 words per minute	26	53.06
85 words per minute	1	2.04
90 words per minute	6	6.12
96 words per minute	1	2.04
100 words per minute	9	18.38
No response	3	6.12
Total	49	100.00
3. Advanced Level		
80 words per minute	16	32.66
90 words per minute	8	16.33
96 words per minute	5	10.20
100 words per minute	13	26.53
120 words per minute	3	6.12
125 words per minute	1	2.04
No response	3	6.12
Total	49	100.00
4. Secretarial Level		
70 words per minute	1	2.04
80 words per minute	12	24.48
90 words per minute	7	14.29
96 words per minute	4	8.16
100 words per minute	9	18.36
120 words per minute	7	14.29
No response	9	18.36
Total	49	100.00
5. Court Reporter and Specialized Stenographers		
110 words per minute	1	2.04
120 words per minute	5	10.20
140 words per minute	1	2.04
150 words per minute	4	8.16
160 words per minute	3	6.12
175 words per minute	6	12.24
200 words per minute	5	10.20
No response	24	48.98
Total	49	100.00

Table 21 shows that at the advanced level there were 16 states, or 32.66 percent, reporting 80 words per minute as their requirement but at a higher accuracy level than reported at the intermediate level. There were 13 states, or 26.53 percent, which reported 100 words per minute; 8 states, or 16.33 percent, which reported 90 words per minute (higher accuracy requirement than previous level); 5 states, or 10.20 percent, which reported 96 words per minute; 3 states, or 6.12 percent, reported 120 words per minute; and 1 state, or 2.04 percent, reported 125 words per minute. There were 3 states, or 6.12 percent, which did not respond to this portion of the question.

At the secretarial level classification there were 12 states, or 24.48 percent of the total, which indicated a speed requirement of 80 words per minute. This was, however, at a greater accuracy requirement than for the entry level. There were 7 states, or 14.29 percent, which reported 120 words per minute; and 7 states, or 14.29 percent, reported 90 words per minute. There were 4 states, or 8.16 percent, which indicated 96 words per minute as the requirement; and 1 state, or 2.04 percent, listed 70 words per minute as the speed required. There were 9 states, or 18.36 percent, which did not respond to this portion of the question.

At the court reporter and specialized stenographic levels there were 24 states who did not respond. Speed levels were reported as follows by the remaining states: 5 states, or 10.20 percent, at 120 words per minute; 4 states, or 8.16 percent, at 150 words per minute; 6 states, or 12.24 percent, at 175 words per minute; 5 states, or 10.20 percent, at 200 words per minute; 3 states, or 6.12 percent, at 160 words per minute; 1 state, or 2.04 percent, at 140 words per minute; and 1 state, or 2.04 percent, at 110 words per minute.

Table 21 shows that 80 words per minute was reported by 36 states, or 73.47 percent of the total states, as the minimum entry level speed for applicants. There were 6 states, or 16.33 percent, which indicated an entry level of 60 words per minute; 2 states, or 4.08 percent, gave an entry level of 70 words per minute; and 1 state, or 2.04 percent, reported 72 words per minute. In addition, 2 states, or 4.08 percent, reported entry level speed requirements at 90 words per minute.

At the intermediate level there were 26 states, or 53.06 percent, which reported 80 words per minute as their minimum requirement; however, this was reported to be at a higher accuracy level than for the entry level requirement at the same speed. There were 9 states, or 18.38 percent, which reported 100 words per minute as their

requirement; 6 states, or 12.24 percent, reported 90 words per minute; 3 states, or 6.12 percent, reported 70 words per minute; 1 state, or 2.04 percent, reported 85 words per minute; and 1 state, or 2.04 percent, reported 96 words per minute. There were 3 states, or 6.12 percent, which did not respond to this section of the question.

At the entry level, the majority of the states required 80 words per minute as the speed of dictation. There were 4 states which qualified their response in this manner. There were 2 states which gave dictation at the three levels of 80, 100, and 120 words per minute, presumably to allow the applicant to demonstrate her highest ability. There were 2 states which indicated that the transcription speed requirement was 25 words per minute.

At the intermediate level, most of the states again required 80 words a minute. Many states qualified their response by stating that the employee must have at least 1 year of experience before she was eligible for the test. Only 2 states indicated the transcription speed requirement which was 30 words per minute. Other higher speed levels were in evidence.

At the advanced level speed, requirements ranged higher than at the intermediate level and the accuracy requirement was more stringent than the 80 words per

minute requirement even though this speed still represented the majority response. In actual computation of the accuracy requirement for those states that reported maximum of errors (See Table 15) it meant that the permitted errors were less. For those states that used a special formula it meant that a factor was changed.

At the secretarial level, the majority response was again 80 words per minute, but no indications were made of other qualifications. Presumably there must have been experience or other variables necessary.

At the court reporter and specialized stenographic levels, the speed ranged from 110 words per minute to 200 words per minute with approximately one-fourth of the respondents requiring 175 words per minute or more.

The speed requirements of all states is not excessive and the properly trained high school graduate should be able to pass the test. It is recommended, however, that more states give dictation at the speed levels of 80, 100, and 120 for the entry level classification in order to allow the more proficient applicant to demonstrate her ability.

PART II

A Statistical Comparison of the Difficulty Level of Dictation Materials of Entry-Level State Civil Service Tests and Teacher-Type Tests

If classroom activities in shorthand and transcription classes are to help prepare students to pass State Civil Service stenographic examinations, it would seem logical that the dictation materials used for classroom exercises and testing purposes should be of comparable difficulty to those of the state tests. Syllabic intensity is a widely used measurement of difficulty of the dictation material. Therefore, a statistical comparison was made of the syllabic intensity of the tests of the states and teachers in order to ascertain if teachers were using dictation materials of sufficient difficulty. Authorities suggest that a syllabic intensity of 1.4 is average difficulty, whereas 1.5 to 1.6 is considered difficult. In this connection the following hypothesis was formulated:

Hypothesis:

There will be no statistically significant difference between the difficulty level as measured by syllabic intensity of the shorthand portion of the State Civil Service stenographic examinations and of selected public high school classroom shorthand dictation tests.

Procedures Used

In order to test the hypothesis, it was first necessary to calculate individual difficulty levels of selected shorthand dictation tests of states and of advanced shorthand and transcription teachers. The State tests used for this purpose consisted of 38 entry-level dictation tests that had been furnished by 38 states. Advanced shorthand and transcription teachers reported that their dictation materials used for examination purposes were chosen most frequently from the Business Teacher magazine. Accordingly, for the purpose of testing the hypothesis, the researcher selected 40 dictation tests that had originated from 4 consecutive years of Business Teacher magazine. These dictation articles were designed to be dictated at 80 words per minute for a period of 3 minutes.

The syllabic intensity measurement was used to determine the difficulty level of each test. The researcher found that the mean syllabic intensity of the State tests was 1.56 whereas the mean syllabic intensity of the 40 dictation articles, representative of the teachers' tests, was only 1.46.

At this point a "t" test was used to compare statistically the tests of the states and the teachers. In addition, "t" tests were used to compare statistically

the tests of each of the State subgroups (Groups II through VI) with the 40 dictation articles which were representative of the teachers' tests.

The following formula was used for the "t" tests.[76]

$$t = \frac{\bar{X}_1 - \bar{X}_2}{S_p \sqrt{(1/N_1) + (1/N_2)}}$$

Results of the Statistical Comparison

Table T shows the results of the statistical comparisons between the difficulty level of dictation testing materials of State Civil Service Commissions and advanced shorthand and transcription teachers.

As noted in Table T, the calculated "t" value was 4.503, whereas the tabled value was only 2.380 at the .01 level of significance for all the State tests in comparison with teacher tests. For the individual groups, however, the calculated "t" values ranged from .847 to 5.023 at the .01 level of significance. The tabled values

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[76]Wilfrid J. Dixon and Frank J. Massey, Jr., Introduction to Statistical Analysis (New York: McGraw-Hill Book Company, Inc., 1957), p. 121.

TABLE T.--A statistical comparison of the difficulty level of dictation testing materials of State Civil Service Commissions and advanced shorthand and transcription teachers

	Calculated "t" Value	Tabled "t" Value	Significant Difference[a]	Significance Level
1. All State Tests and all Teacher Tests	4.503	2.380	Yes	.01
2. State Tests of Group I and all Teacher Tests	Not measurable because of small group size.			
3. State Tests of Group II and all Teacher Tests	1.417	2.422	No	.01
4. State Tests of Group III and all Teacher Tests	5.022	2.410	Yes	.01
5. State Tests of Group IV and all Teacher Tests	.847	2.415	No	.01
6. State Tests of Group V and all Teacher Tests	2.405	2.410	Indeterminate	.01
7. State Tests of Group VI and all Teacher Tests	5.203	2.414	Yes	.01

[a]There were eight populations under study. There were six populations consisting of the state tests for each of the six groups. The seventh population was the population of the union of these groups. The eighth population was all of the teachers' tests.

for all groups was approximately 2.400 at the .01 level of significance.[77]

Conclusion Respecting Hypothesis

The following null hypothesis was tested statistically:

Hypothesis:

There will be no statistically significant difference between the difficulty level as measured by syllabic intensity of the shorthand portion of the State Civil Service stenographic examinations and of selected public high school classroom shorthand dictation tests.

Since the difficulty level of 1.56 syllabic intensity for all State Civil Service stenographic tests was statistically significantly higher than the mean difficulty level of 1.46 syllabic intensity for a

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[77]Having found that there was a significant difference between the difficulty level as measured by syllabic intensity between all of the state tests and the teacher-type tests, the researcher went one step further. She examined these state tests using analysis of variance to determine whether or not there was a statistically significant difference in the difficulty level as measured by syllabic intensity among the various state tests. A calculated F statistic of 2.00 was found as compared with a tabled F statistic of 2.54. Therefore, it was concluded that there was no significant difference in the difficulty level among the state tests. See Appendix for Analysis of Variance Table and Summary of the Results of Syllabic Intensity Measurement.

representative sample of teacher tests, the null hypothesis was rejected.

It can be concluded that the difficulty level as measured by syllabic intensity of the State Civil Service stenographic tests is higher than the difficulty level of the teacher-type tests of public high school advanced shorthand and transcription teachers. In this connection, however, it should be noted that, as in all averages, this is not necessarily true of every individual state test.

Recommendations

It is recommended, therefore, that public high school business education teachers use more difficult dictation materials for testing purposes in preparing students to pass State Civil Service examinations.

Conclusion

This chapter has been an analysis of the replies from State Civil Service Commissions regarding their tests and testing techniques. In addition, this chapter has presented a statistical analysis of the difficulty of dictation materials of entry-level State Civil Service tests and teacher-type tests.

A summary of the findings of this chapter are found in Chapter VIII together with the conclusions and recommendations.

The next chapter, Chapter V, will be an analysis of the replies from public high school advanced shorthand and transcription teachers concerning their tests and testing techniques.

CHAPTER V

ANALYSIS AND PRESENTATION OF THE DATA CONCERNING PUBLIC HIGH SCHOOL ADVANCED SHORTHAND AND TRANSCRIPTION TESTS AND TESTING TECHNIQUES USED BY SELECTED PUBLIC HIGH SCHOOL TEACHERS

This chapter presents the results of a percentage analysis of replies from public high school advanced shorthand teachers and transcription teachers regarding their tests and testing techniques. The first part of the chapter sets forth the findings of replies from the advanced shorthand teachers and the second part contains the findings of replies from transcription teachers.

PART I

Advanced Shorthand

Types of Shorthand Tests Used Most Frequently by Shorthand Teachers

Public high school teachers of advanced shorthand were asked to indicate the most frequently used type of shorthand test. More than one item could be checked. Table 22 presents the types of shorthand tests used.

TABLE 22.--Types of shorthand tests given more frequently by teachers of public high school advanced shorthand classes

Type of Test	Total	Total				Group I			Group II			Group III		
	Total Responses	Number of Responses	Percent of Responses	Number of No Responses	Percent of No Responses	Responses			Responses			Responses		
						Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total
1. Oral dictation of business letters written in shorthand	260	231	88.85	29	11.15	45	86.54	17.31	33	91.67	12.69	38	80.85	14.62
2. Oral dictation of business letters on tape or other recording devices written in shorthand	260	84	32.31	176	67.69	21	40.38	8.08	15	41.67	5.77	14	29.79	5.38
3. Printed dictation materials used for copying in shorthand	260	27	10.38	233	89.62	9	17.31	3.46	5	13.89	1.92	6	12.77	2.31
4. Orally dictated or recorded word lists written in shorthand	260	78	30.00	182	70.00	14	26.92	5.38	15	41.67	5.77	16	34.04	6.15
5. Shorthand written from printed word lists	260	20	7.69	240	92.31	4	7.69	1.54	2	5.56	.77	8	17.02	3.08
6. Other[a]	260	19	7.31	241	92.69	4	7.69	1.54	3	8.33	1.15	4	8.51	1.54

[a]12 reported English usage; 3, brief form tests; 4, visiting businessmen, proofreading, extemporaneous dictation.

Read the table thus: For Item 1 above there were 231 teachers who responded, representing 88.85% of the total 260 questionnaires tabulated and 29 teachers representing 11.15% of the total respondents who did not reply to this item. Replies are distributed numerically and percentage-wise in Groups I-VI.

TABLE 22.--Continued.

Type of Test	Total Responses	Total: Number of Responses	Total: Percent of Responses	Total: Number of No Responses	Total: Percent of No Responses	Group IV: Responses: Number	Group IV: Responses: Percent of Group	Group IV: Responses: Percent of Total	Group V: Responses: Number	Group V: Responses: Percent of Group	Group V: Responses: Percent of Total	Group VI: Responses: Number	Group VI: Responses: Percent of Group	Group VI: Responses: Percent of Total
1. Oral dictation of business letters written in shorthand	260	231	88.85	29	11.15	29	100.00	11.15	56	91.80	21.54	30	85.71	11.54
2. Oral dictation of business letters on tape or other recording devices written in shorthand	260	84	32.31	176	67.69	10	34.48	3.85	18	29.51	6.92	6	17.14	2.31
3. Printed dictation materials used for copying in shorthand	260	27	10.38	233	89.62	2	6.90	.77	5	8.20	1.92	0	0	0
4. Orally dictated or recorded word lists written in shorthand	260	78	30.00	182	70.00	6	20.69	2.31	18	29.51	6.92	9	25.71	3.46
5. Shorthand written from printed word lists	260	20	7.69	240	92.31	1	3.45	.38	2	3.28	.77	3	8.57	1.15
6. Other[a]	260	19	7.31	241	92.69	3	10.34	1.15	3	4.92	1.15	2	5.71	.77

[a]12 reported English usage; 3, brief form tests; 4, visiting businessmen, proofreading, extemporaneous dictation.

Read the table thus: For Item 1 above there were 231 teachers who responded, representing 88.85% of the total 260 questionnaires tabulated and 29 teachers representing 11.15% of the total respondents who did not reply to this item. Replies are distributed numerically and percentage-wise in Groups I-VI.

An analysis of Table 22 indicates that 231 respondents, or 88.85 percent of the total, reported that their most commonly used test was the oral dictation of business letters to be written in shorthand. Percentages for the individual groups ranged from 80.85 percent to 100 percent.

The next most frequently used type of test was the oral dictation of business letters recorded on tape or other types of recording devices. There was a total of 84 respondents, or 32.31 percent, which replied. Percentages for the individual groups ranged from 17.14 percent to 41.67 percent.

Other methods listed in order of their usage were orally dictated or recorded word lists written in shorthand by 78 respondents, or 30 percent; printed dictation materials used for copying in shorthand, 27, or 10.38 percent; and shorthand written from printed word lists, 20, or 7.69 percent.

Other testing methods reported by 19 respondents, or 7.31 percent of the total, reported English usage tests, brief form tests, tests given by visiting businessmen, proofreading tests, and extemporaneous dictation tests.

A great majority of the teachers placed their major emphasis upon oral dictation. This is justified in view of Leslie's remarks:

> The objective of the shorthand learner who is training for a stenographic job is the ability to read and write shorthand as it is used to record the dictation of ordinary, extemporaneous running English. Therefore, shorthand tests should always be planned to approximate the life situation to whatever extent that may be possible without bringing undesirable factors into the test.[78]

Oral dictation is an effective method of bringing into the classroom an office-like situation. Small percentages of teachers reporting other types of testing indicate a tendency to break away from the traditional methods of oral testing.

It is disturbing to note that over 35 percent of the respondents used some form of word list test. Authorities in the field question the value of the word list test. Leslie states:

> . . . This is no longer a necessary or desirable type of shorthand test. . . . It would be better to discard the word list and use connected matter.[79]

Leslie discusses word lists saying that their original purpose was to enable the teacher to check on the shorthand solving ability of the learner, but an improvement was made by emphasizing the correctness of the transcript rather than the correctness of the shorthand outline. In fact, shorthand outlines are written only so

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[78] Louis A. Leslie, Methods of Teaching Gregg Shorthand, op. cit., p. 197.

[79] Ibid., p. 396.

that they may be read at a later time and transcribed correctly. Any material deviations from the dictation will later show up in the transcript itself. If the teacher persists in using word lists, the following suggestions are made by Leslie.

1. Select common, useful words.
2. Select words illustrating normal principles of outline construction.
3. Dictate the words at a measured speed so that the learner must construct the outlines at that speed or omit the words.
4. Grade the tests on the basis of the transcript of the word lists, disregarding shorthand outlines.[80]

Lamb discusses the use of word lists, saying:

> They contribute to the ultimate objective of skill in writing and reading shorthand, but these exercises are too fragmentary to be considered true tests of shorthand skill at any level . . . word lists . . . lack the important essential of contextual meaning to be recorded and transcribed.[81]

It is recommended that teachers eliminate or curtail the use of word lists for teaching purposes because the value of this type of testing is questionable.

Topics of Study Stressed in Advanced Shorthand in Addition to Shorthand Skill

Public high school teachers of advanced shorthand were asked to indicate what topics of study were

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[80] Ibid.

[81] Lamb, op. cit., p. 162.

stressed most frequently in addition to the shorthand skills. More than one item could be checked. Table 23 presents this data.

An analysis of Table 23 indicates that the topic stressed most frequently was English usage which included grammar, punctuation, spelling, capitalization, syntax, and syllabication. A total of 243 respondents, or 93.46 percent, indicated this as their first choice. Percentages for the individual groups ranged from 38.30 percent to 68.97 percent.

Typing accuracy was checked as the second topic of study most frequently stressed by 209 respondents, or 80.38 percent. Percentages for the individual groups ranged from 72.34 percent to 88.57 percent.

All groups indicated as a third and fourth choice, typing speed and clerical skills by 135, or 51.92 percent, and 97, or 37.31 percent, respectively.

Other miscellaneous topics such as secretarial information and office etiquette, office machines, and basic arithmetic skills were also reported.

Over 90 percent of the respondents stated that English usage was the most important topic stressed in advanced shorthand classes, in addition to the shorthand skill itself. This is an important part of the shorthand training. Hardaway discusses the subject and notes that

TABLE 23.--Topics of study stressed, in addition to shorthand skills, by teachers of public high school advanced shorthand classes

Topics	Total Responses	Total				Group I			Group II			Group III		
		Number of Responses	Percent of Responses	Number of No Responses	Percent of No Responses	Responses			Responses			Responses		
						Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total
1. Typing speed	260	135	51.92	125	48.08	27	51.92	10.38	19	52.78	7.31	18	38.30	6.92
2. Typing accuracy	260	209	80.38	51	19.62	42	80.77	16.15	28	77.78	10.77	34	72.34	13.08
3. English usage (spelling, punctuation, capitalization, syntax, syllabication)	260	243	93.46	17	6.54	47	90.38	18.08	34	94.44	13.08	43	91.49	16.54
4. Clerical skills	260	97	37.31	163	62.69	19	36.54	7.31	15	41.67	5.77	21	44.68	8.08
5. Other[a]	260	45	17.31	215	82.69	9	17.31	3.46	6	16.67	2.31	6	12.77	2.31

[a]39 reported secretarial information and office etiquette; 5 reported office machines; 1 reported basic arithmetic skill.

Read the table thus: For Item 1 above there were 135 teachers who responded, representing 51.92% of the total of 260 questionnaires tabulated, and 125 teachers representing 48.08% of the total respondents who did not reply to this item. Replies are distributed numerically and percentage-wise in Groups I-VI.

TABLE 23.--Continued.

Topics	Total Responses	Total: Number of Responses	Total: Percent of Responses	Total: Number of No Responses	Total: Percent of No Responses	Group IV: Responses: Number	Group IV: Responses: Percent of Group	Group IV: Responses: Percent of Total	Group V: Responses: Number	Group V: Responses: Percent of Group	Group V: Responses: Percent of Total	Group VI: Responses: Number	Group VI: Responses: Percent of Group	Group VI: Responses: Percent of Total
1. Typing speed	260	135	51.92	125	48.08	20	68.97	7.69	30	49.18	11.54	21	60.00	8.08
2. Typing accuracy	260	209	80.38	51	19.62	25	86.21	9.62	49	80.33	18.85	31	88.57	11.92
3. English usage (spelling, punctuation, capitalization, syntax, syllabication)	260	243	93.46	17	6.54	29	100.00	11.15	58	95.08	22.31	32	91.43	12.31
4. Clerical skills	260	97	37.31	163	62.69	13	44.83	5.00	21	34.43	8.08	8	22.86	3.08
5. Other[a]	260	45	17.31	215	82.69	5	17.24	1.92	14	22.95	5.38	5	14.29	1.92

[a]39 reported secretarial information and office etiquette; 5 reported office machines; 1 reported basic arithmetic skill.

Read the table thus: For Item 1 above there were 135 teachers who responded, representing 51.92% of the total of 260 questionnaires tabulated, and 125 teachers representing 48.08% of the total respondents who did not reply to this item. Replies are distributed numerically and percentage-wise in Groups I-VI.

businessmen are looking for office workers with a high degree of skill in communications.[82] Stenographers are hampered if they have not mastered the rudiments of correct English usage. The teaching of the shorthand skill is not complete unless it is integrated with correct English usage. Lamb states:

> A review of English fundamentals integrated with daily dictation practice is stressed, and tests should require the application of the rules covered.[83]

The fact that typing accuracy and typing speed were stressed by advanced shorthand teachers presumably indicates a need to strengthen the typing skills of students in the advanced shorthand classes.

The emphasis upon clerical skills might indicate that there was an absence of training in this area in the other courses.

It is recommended that an emphasis on English usage be continued within the advanced shorthand course because of its close relationship to the proper use of shorthand. It is further recommended that students develop typing performance within the typing courses before they enter into advanced shorthand classes, and that clerical skills be developed in other courses.

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[82]Hardaway, op. cit., p. 305.

[83]Lamb, op. cit., p. 177.

Source of Shorthand Dictation Materials

Public high school teachers of advanced shorthand were asked to indicate the most frequently used source for selecting shorthand dictation testing materials. More than one item could be checked. Table 24 presents this data.

An analysis of Table 24 indicates that the sources used most frequently for selecting shorthand dictation testing materials were business education books. There were 217 respondents, or 83.46 percent of the total, which reported this answer. Percentages for the individual groups ranged from 79.31 percent to 88.89 percent.

The next most frequently used source was business education magazines as reported by 216 respondents, or 83.08 percent. Percentages for the individual groups ranged from 72.22 percent to 88.57 percent.

Additional sources of dictation materials for testing purposes consisted of self-composition as reported by 28 respondents, or 10.77 percent; use of word lists from which tests were composed, 23, or 8.85 percent. Sources reported under "other" were letters received in the mail, Civil Service sample tests, and records and tapes.

TABLE 24.--Sources used for selecting shorthand dictation testing materials as reported by teachers of public high school advanced shorthand classes

Source of Materials	Total Responses	Total				Group I			Group II			Group III		
		Number of Responses	Percent of Responses	Number of No Responses	Percent of No Responses	Responses			Responses			Responses		
						Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total
1. Business education books	260	217	83.46	43	16.54	43	82.69	16.54	32	88.89	12.31	38	80.85	14.62
2. Business education magazines	260	216	83.08	44	16.92	45	86.54	17.31	26	72.22	10.00	39	82.98	15.00
3. Composed from word lists, etc.	260	23	8.85	237	91.15	3	5.77	1.15	4	11.11	1.54	1	2.13	.38
4. Composed by self	260	28	10.77	232	89.23	5	9.62	1.92	4	11.11	1.54	4	8.51	1.54
5. Other[a]	260	28	10.77	232	89.23	3	5.77	1.15	8	22.22	3.08	5	10.64	1.92

[a]18 reported using free dictation materials or business letters received in daily mail; 3 reported records, tapes and dictation belts; 2 reported old homework; 3 reported local businessmen dictating in class, and 2 reported Civil Service sample test materials.

Read the table thus: For Item 1 above there were 217 teachers who responded, representing 82.46% of the total of 260 questionnaires tabulated, and 43 teachers representing 16.54% of the total respondents who did not reply to this item. The replies were distributed numerically and percentage-wise in Groups I-VI.

TABLE 24.--Continued.

Source of Materials	Total					Group VI			Group V			Group VI		
						Responses			Responses			Responses		
	Total Responses	Number of Responses	Percent of Responses	Number of No Responses	Percent of No Responses	Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total
1. Business education books	260	217	83.46	43	16.54	23	79.31	8.85	51	83.61	19.62	30	85.71	11.54
2. Business education magazines	260	216	83.08	44	16.92	25	86.21	9.62	50	81.97	19.23	31	88.57	11.92
3. Composed from word lists, etc.	260	23	8.85	237	91.15	5	17.24	1.92	4	6.56	1.54	6	17.14	2.31
4. Composed by self	260	28	10.77	232	89.23	5	17.24	1.92	5	8.20	1.92	5	14.29	1.92
5. Other[a]	260	28	10.77	232	89.23	1	3.45	.38	9	14.75	3.46	2	5.71	.77

[a]18 reported using free dictation materials or business letters received in daily mail; 3 reported records, tapes and dictation belts; 2 reported old homework; 3 reported local businessmen dictating in class, and 2 reported Civil Service sample test materials.

Read the table thus: For Item 1 above there were 217 teachers who responded, representing 82.46% of the total of 260 questionnaires tabulated, and 43 teachers representing 16.54% of the total respondents who did not reply to this item. The replies were distributed numerically and percentage-wise in Groups I-VI.

The overwhelming majority of teachers selected published materials from business education books and magazines as their source. The fact that this source was used indicates that teachers used materials which have been specifically designed and edited for classroom dictation purposes. The importance of selecting suitable dictation materials cannot be overemphasized.

Lamb warns teachers that training and testing materials should not be chosen at random. She states:

> Even though dictation material is counted out in standard words, the inherent difficulty of the material will not be altered. The natural syllabic intensity of the matter obtained by dividing the total number of syllables by the number of actual words, indicates whether the material is of average complexity (1.4 syllables), below average, or above average difficulty. Material that has a natural syllabic intensity of 1.8, for example, is certain to be more difficult to record than 1.4 material, even though both selections are counted out in standard words and dictated accordingly. The reason is that the material with high syllabic intensity contains longer words that are less frequently used than the short, common words in the easier material, many of which have been automatized through frequent writing.[84]

There were a number of teachers who composed their own tests, selecting materials from the mail, from word lists, or other sources. There is danger in this activity unless materials have been prepared with proper measurement techniques to fit into the course at a particular time. On the other hand, such practice does show that

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[84]Lamb, op. cit., p. 175.

innovative attempts have been made by teachers to select and compose materials suitable for their particular situations.

It is recommended that teachers continue the use of specially prepared materials for dictation purposes. In addition, it is recommended that teachers use self-composed materials or carefully selected materials from files sparingly and only as supplementary practices directed toward community needs or student interest.

Specific Sources Used for Dictation Materials

Public high school teachers of advanced shorthand were asked to indicate the specific sources used in selecting shorthand dictation testing materials. More than one item could be checked. Table 25 presents this information.

An analysis of Table 25 indicates that the specific source used most frequently by teachers in selecting shorthand dictation testing materials was Business Teacher magazine as reported by 172 respondents, or 66.15 percent. Percentages for the individual groups ranged from 52.78 percent to 73.08 percent.

The next most frequently used specific source was Progressive Dictation and Transcription Dictation by Zoubek and Transcription Dictation by Leslie and Zoubek

TABLE 25.--Specific sources used in selecting shorthand dictation testing materials as reported by teachers of public high school advanced shorthand classes

Source of Materials	Total					Group I			Group II			Group III		
	Total Responses	Number of Responses	Percent of Responses	Number of No Responses	Percent of No Responses	Responses			Responses			Responses		
						Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total
1. Business Teacher, magazine	260	172	66.15	88	33.85	38	73.08	14.62	19	52.78	7.31	34	72.34	13.08
2. Progressive Dictation, Zoubek and Transcription Dictation, Leslie and Zoubek	260	115	44.23	145	55.77	22	42.31	8.46	16	44.44	6.15	21	44.68	8.08
3. Shorthand Transcription, Balsley and Wanous	260	14	5.38	246	94.62	6	11.54	2.31	3	8.33	1.15	0	0	0
4. Miscellaneous sources	260	15	5.77	245	94.23	0	0	0	6	16.67	2.31	4	8.51	1.54
5. Today's Secretary, magazine	260	7	2.69	253	97.31	1	1.92	.38	1	2.78	.38	1	2.13	.38

Read the table thus: For Item 1 above there were 172 teachers who responded, representing 66.15% of the total of 260 questionnaires tabulated, and 88 teachers representing 33.85% of the total respondents who did not reply to this item. The replies were distributed numerically and percentage-wise in Groups I-VI.

TABLE 25.--Continued.

Source of Materials	Total					Group IV			Group V			Group VI		
	Total Responses	Number of Responses	Percent of Responses	Number of No Responses	Percent of No Responses	Responses			Responses			Responses		
						Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total
1. Business Teacher, magazine	260	172	66.15	88	33.85	18	62.07	6.92	40	65.57	15.38	23	65.71	8.85
2. Progressive Dictation, Zoubek and Transcription Dictation, Leslie and Zoubek	260	115	44.23	145	55.77	15	51.72	5.77	25	40.98	9.62	16	45.71	6.15
3. Shorthand Transcription, Balsley and Wanous	260	14	5.38	246	94.62	2	6.90	.77	2	3.28	.77	1	2.86	.38
4. Miscellaneous sources	260	15	5.77	245	94.23	0	0	0	2	3.28	.77	3	8.57	1.15
5. Today's Secretary, magazine	260	7	2.69	253	97.31	0	0	0	3	4.92	1.15	1	2.86	.38

Read the table thus: For Item 1 above there were 172 teachers who responded, representing 66.15% of the total of 260 questionnaires tabulated, and 88 teachers representing 33.85% of the total respondents who did not reply to this item. The replies were distributed numerically and percentage-wise in Groups I-VI.

as reported by 115 respondents, or 44.23 percent. Percentages for the individual groups ranged from 40.98 percent to 51.72 percent.

Other sources used were Shorthand and Transcription by Balsley and Wanous as reported by 14, or 5.38 percent; Today's Secretary magazine by 7, or 2.69 percent. Other miscellaneous sources were reported by 15 respondents, or 5.77 percent.

Materials selected by the teachers are widely recognized as authoritative sources of dictation materials. However, Lamb warns inexperienced teachers to:

> Limit dictation materials to the textbook and the supplementary books recommended in the teacher's manual, for dictation materials vary widely in difficulty and they should be properly graded and correlated. Material with meaning obscure or involved is more difficult to record than well-written, easily understood matter. Material containing long and difficult words is more difficult than material made up of common words.[85]

It is recommended that the currently used materials be continued together with prepared supplementary materials directed toward the specific needs of the students and the community.

Determination of Difficulty of Dictation Materials Used by Advanced Shorthand Teachers

Public high school teachers of advanced shorthand were asked to indicate how they determined the difficulty

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[85] Ibid., p. 175.

of the materials used for shorthand dictation tests. More than one item could be checked. The data is presented in Table 26.

An analysis of Table 26 indicates that a total of 131 respondents, or 50.38 percent, used the standard word when determining the difficulty of the materials used. Percentages for the individual groups ranged from 41.67 percent to 55.32 percent.

A total of 89 respondents, or 34.23 percent, used syllabic intensity as their measurement. Percentages for the individual groups ranged from 17.31 percent to 44.44 percent.

A total of 19 respondents, or 7.31 percent, indicated that they used an actual word count for determining the difficulty of dictation materials and 24, or 9.23 percent, reported no measurement. A total of 18, or 6.92 percent, reported self-judgment of the materials by reading them over.

It is the researcher's opinion that the 89 respondents, or 34.23 percent, who reported syllabic intensity may have been using standard word measurement. This opinion is based upon two suppositions: (1) the standard word count is usually labeled as 1.4 syllable intensity; (2) there were 172 respondents, or 66.15 percent (see Table 25), using Business Teacher magazine tests which indicate a number of standard words contained in each article.

TABLE 26.--Determination of difficulty of material used for shorthand dictation tests as reported by teachers of public high school advanced shorthand classes

Type of Measurement	Total					Group I			Group II			Group III		
						Responses			Responses			Responses		
	Total Responses	Number of Responses	Percent of Responses	Number of No Responses	Percent of No Responses	Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total
1. Standard word, 28 syllables = 20 shorthand words	260	131	50.38	129	49.62	28	53.85	10.77	15	41.67	5.77	26	55.32	10.00
2. Actual word count	260	19	7.31	241	92.69	2	3.85	.77	6	16.67	2.31	0	0	0
3. Shorthand stroke count	260	2	.77	258	99.23	0	0	0	1	2.78	.38	1	2.13	.38
4. Syllabic intensity	260	89	34.23	171	65.77	9	17.31	3.46	16	44.44	6.15	18	38.30	6.92
5. No measurement	260	24	9.23	236	90.77	8	15.38	3.08	1	2.78	.38	3	6.38	1.15
6. Other measurement[a]	260	18	6.92	242	93.08	3	5.77	1.15	2	5.56	.77	4	8.51	1.54

[a]18 reported self judgment of difficulty by reading over the materials (1 of these responses reported disagreement that self judgment was a true measurement of difficulty).

Read the table thus: For Item 1 above there were 131 teachers who responded, representing 50.38% of the total of 260 questionnaires tabulated, and 129 teachers representing 49.62% of the total respondents who did not reply to this item. The replies were distributed numerically and percentage-wise in Groups I-VI.

TABLE 26.--Continued.

Type of Measurement	Total					Group IV			Group V			Group VI		
	Total Responses	Number of Responses	Percent of Responses	Number of No Responses	Percent of No Responses	Responses			Responses			Responses		
						Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total
1. Standard word, 28 syllables = 20 shorthand words	260	131	50.38	129	49.62	15	51.72	5.77	31	50.82	11.92	16	45.71	6.15
2. Actual word count	260	19	7.31	241	92.69	2	6.90	.77	5	8.20	1.92	4	11.43	1.54
3. Shorthand stroke count	260	2	.77	258	99.23	0	0	0	0	0	0	0	0	0
4. Syllabic intensity	260	24	9.23	236	90.77	11	37.93	4.23	23	37.70	8.80	12	34.29	4.62
5. No measurement	260	24	9.23	236	90.77	3	10.34	1.15	8	13.11	3.08	1	2.86	.38
6. Other measurement[a]	260	18	6.92	242	93.08	4	13.79	1.54	3	4.92	1.15	2	5.71	.77

[a]18 reported self judgment of difficulty by reading over the materials (1 of these responses reported disagreement that self judgment was a true measurement of difficulty).

Read the table thus: For Item 1 above there were 131 teachers who responded, representing 50.38% of the total of 260 questionnaires tabulated, and 129 teachers representing 49.62% of the total respondents who did not reply to this item. The replies were distributed numerically and percentage-wise in Groups I-VI.

Advanced shorthand teachers are using difficulty measurements (standard word and syllable intensity) that have been widely accepted at the present time by publishers and teachers alike. However, authorities have questioned the reliability of syllabic intensity as an adequate measure of difficulty of dictation materials. (See Chapter II, Review of the Literature, Section on Difficulty of Material, page 26.) Some of these researchers have proposed refined methods, but as yet these ideas may not have been disseminated to the majority of the teachers. This issue is important because the ability to delineate carefully the difficulties of material would be a great aid to the teacher in contributing to the development of the progress of the student by selecting materials that are actually graduated in difficulty.

Teachers reporting no measurement or measurement by self-judgment are overlooking the importance of knowing the usefulness of the level of difficulty of material in order to adjust the dictation from easy to difficult at the various progress levels of learning.

It is recommended that teachers continue the use of syllabic intensity or the standard word as a method of measurement of difficulty of dictation materials until such time that the publishers and others have adopted newer methods. There should be continued experimentation

and investigation by researchers in the use and implementation of these new techniques.

Syllabic Intensity Figure Used Most Frequently to Measure Difficulty of Shorthand Dictation Materials

Public high school teachers of advanced shorthand were asked to indicate the syllabic intensity figure used most frequently to measure the difficulty of the shorthand dictation materials. Only one item could be checked by the teachers. Table 27 presents the data.

An analysis of Table 27 shows that a total of 105 respondents, or 40.38 percent of the total reporting, indicated that they used a syllabic intensity figure of 1.4, which is defined as average difficulty level. Percentages for the individual groups ranged from 27.59 percent to 51.06 percent.

There were 22 respondents, or 8.46 percent, who stated that they used a syllabic intensity figure of 1.5 to 1.6, which is defined as difficult by authorities. Percentages for the individual groups ranged from 5.77 percent to 19.44 percent.

There were 2 respondents, or .77 percent, who used easy dictation materials of less than 1.4 syllabic intensity.

There were 16 respondents, or 6.15 percent, who reported that they did not know what they used as a

TABLE 27.--Syllabic intensity figure most frequently used to measure difficulty of shorthand dictation materials as reported by teachers of public high school advanced shorthand classes

Difficulty Classification	Total		Group I			Group II			Group III		
			Responses			Responses			Responses		
	Number of Responses	Percent of Responses	Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total
1. Easy (less than 1.4 syllabic intensity)	2	.77	1	1.92	.38	0	0	0	0	0	0
2. Average (1.4 syllabic intensity	105	40.38	16	30.77	6.15	15	41.67	5.77	24	51.06	9.23
3. Difficult (1.5 to 1.6 syllabic intensity	22	8.46	3	5.77	1.15	7	19.44	2.69	1	2.13	.38
4. Extremely difficult (greater than 1.6 syllabic intensity	0	0	0	0	0	0	0	0	0	0	0
5. Don't know	16	6.15	5	9.62	1.92	1	2.78	.38	1	2.13	.38
Total No Response	115	44.24	27	0	0	13	0	0	21	0	0
Total	260	100.00	52		20.00	36		13.85	47		18.08

Read the table thus: For Item 1 above there were a total of 2 teachers who responded representing .77% of the total of 260 questionnaires tabulated. These replies were distributed numerically and percentage-wise in Groups I-VI.

TABLE 27.--Continued.

Difficulty Classification	Total		Group IV			Group V			Group VI		
	Number of Responses	Percent of Responses	Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total
1. Easy (less than 1.4 syllabic intensity)	2	.77	0	0	0	1	1.64	.38	0	0	0
2. Average (1.4 syllabic intensity	105	40.38	8	27.59	3.08	26	42.62	10.00	16	45.71	6.15
3. Difficult (1.5 to 1.6 syllabic intensity	22	8.46	5	17.24	1.92	3	4.92	1.15	3	8.57	1.15
4. Extremely difficult (greater than 1.6 syllabic intensity	0	0	0	0	0	0	0	0	0	0	0
5. Don't know	16	6.15	2	6.90	.77	6	9.84	2.31	1	2.86	.38
Total No Response	115	44.24	14	0	0	25	0	0	15	0	0
Total	260	100.00	29		11.15	61		23.46	35		13.46

Read the table thus: For Item 1 above there were a total of 2 teachers who responded representing .77% of the total of 260 questionnaires tabulated. These replies were distributed numerically and percentage-wise in Groups I-VI.

syllabic intensity figure, and 115, or 44.24 percent, did not reply to this question. No one reported the use of extremely difficult, or greater than 1.6, syllabic intensity figures.

The teachers of advanced shorthand are using an average syllable intensity of 1.4 in measuring the difficulty of materials dictated. However, 44 percent did not answer this question. It would have been desirable to have had some knowledge of the reasons for no response, whether they did not know the difficulty level or did not want to divulge this fact.

It is recommended that teachers utilize more of the materials that indicate the various levels of difficulty, such as Progressive Dictation by Zoubek, in order that dictation drills will contain some of the more difficult articles. By presenting progressively more difficult materials, the student may be stimulated to better performance.

Accuracy Standards for Shorthand Transcripts

Public high school teachers of advanced shorthand were asked to indicate the accuracy standards used for shorthand transcripts. More than one item could be checked. Table 28 presents this data.

TABLE 28.--Accuracy standards required for shorthand transcripts as reported by teachers of public high school advanced shorthand classes

Accuracy Standards	Total					Group I			Group II			Group III		
	Total Responses	Number of Responses	Percent of Responses	Number of No Responses	Percent of No Responses	Responses			Responses			Responses		
						Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total
1. 95% accuracy	260	165	63.46	95	36.54	36	69.23	13.85	18	50.00	6.92	33	70.21	12.69
2. 98% accuracy	260	25	9.62	235	90.38	4	7.69	1.54	2	5.56	.77	1	2.13	.38
3. Mailability	260	129	49.62	131	50.38	23	44.23	8.85	23	63.89	8.85	22	46.81	8.46
4. Other[a]	260	24	9.23	236	90.77	1	1.92	.38	6	16.67	2.31	3	6.38	1.15

[a]14 reported 97% accuracy; 3 reported -10 for error; 2 reported perfect copy; 1 at 7%; 1 at 65%; 1 at 90%; 1 dropped a letter grade for each error, and 1 reported a progressive step system.

Read the table thus: For Item 1 above there were 165 teachers who responded, representing 63.46% of the total of 260 questionnaires tabulated and 95 teachers representing 36.54% of the total respondents who did not reply to this item. Replies are distributed numerically and percentage-wise in Groups I-VI.

TABLE 28.--Continued.

Accuracy Standards	Total Responses	Total: Number of Responses	Total: Percent of Responses	Total: Number of No Responses	Total: Percent of No Responses	Group IV: Responses: Number	Group IV: Responses: Percent of Group	Group IV: Responses: Percent of Total	Group V: Responses: Number	Group V: Responses: Percent of Group	Group V: Responses: Percent of Total	Group VI: Responses: Number	Group VI: Responses: Percent of Group	Group VI: Responses: Percent of Total
1. 95% accuracy	260	165	63.46	95	36.54	17	58.62	6.54	41	67.21	15.77	20	57.14	7.69
2. 98% accuracy	260	25	9.62	235	90.38	5	17.24	1.92	8	13.11	3.08	5	14.29	1.92
3. Mailability	260	129	49.62	131	50.38	15	51.72	5.77	30	49.18	11.54	16	45.71	6.15
4. Other[a]	260	24	9.23	236	90.77	6	20.69	2.31	5	8.20	1.92	3	8.57	1.15

[a]14 reported 97% accuracy; 3 reported -10 for error; 2 reported perfect copy; 1 at 7%; 1 at 65%; 1 at 90%; 1 dropped a letter grade for each error, and 1 reported a progressive step system.

Read the table thus: For Item 1 above there were 165 teachers who responded, representing 63.46% of the total of 260 questionnaires tabulated and 95 teachers representing 36.54% of the total respondents who did not reply to this item. Replies are distributed numerically and percentage-wise in Groups I-VI.

An analysis of Table 28 indicates that the most frequently reported accuracy standard for shorthand transcripts was the 95 percent accuracy level. A total of 165 respondents, or 63.46 percent, replied in this manner. Percentages for the individual groups ranged from 50 percent to 70.21 percent.

The second accuracy standard reported was the mailability standard which was reported by 120 respondents, or 49.62 percent. Percentages for the individual groups ranged from 44.23 percent to 63.89 percent.

Other standards reported were these: 25, or 9.62 percent, reported a 98 percent accuracy level; 24, or 9.23 percent, reported other standards such as 97 percent accuracy, perfect copy, progressive step systems, etc.

The high percentage of replies (63 percent) listed the 95 percent accuracy level as their standard for shorthand transcripts, as in accordance with the recommendation of Lamb who says:

> The classroom standard for speed tests (progress tests) provides for error allowance of five per cent; that is, the number of errors must not exceed five per cent of the number of words in the five minute take.[86]

The reason for this according to Leslie and Zoubek is:

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[86] Lamb, op. cit., p. 173.

> Possibly the most frequently found improper test is the shorthand speed test with too high an accuracy requirement. There can be no quarreling with almost any reasonable accuracy requirement for a terminal speed test. But for the shorthand speed tests given as progress tests, too high an accuracy requirement serves only to hamper the learner's further progress.[87]

There were 49 percent of the replies that mentioned mailability as a standard. This probably indicates that teachers are stressing a combination of goals in their advanced shorthand classes, or that one class is maintained to cover both speedbuilding and transcription. Mailability standards according to Lamb do not stress speed of dictation but nearly perfect accuracy in transcription.

> The dictation for accurate transcription is aimed at the controlled recording that makes accurate transcription possible and in this production work the mailability standard is absolute.[88]

The researcher feels that when transcription and advanced shorthand students are included in one class because of scheduling or other reasons, a definite division of time should be allowed for each function in order that the goals of both speedbuilding and accurate transcription be realized.

If the advanced shorthand class has these dual functions, extra care must be taken to insure that the

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[87] Louis A. Leslie and Charles E. Zoubek, Teachers Handbook, Gregg Transcription Simplified (New York: Gregg Publishing Division, McGraw-Hill Book Co., Inc., 1956), pp. 35-37.

[88] Lamb, op. cit., p. 107.

goals and time allotted to each are kept separate, in order to avoid creating a composite classroom situation with overlapping, hazy, mixed objectives.

Reasons for Using Current Advanced Shorthand Test

Public high school teachers of advanced shorthand were asked to indicate reasons for using their present shorthand test. More than one item could be checked. Table 29 presents the data.

An analysis of Table 29 shows that a total of 203 respondents, or 78.08 percent, gave as their reason "best kind of skill measurement available." Percentages for the individual groups ranged from 73.08 percent to 82.98 percent.

The second reason given by teachers was that their present test was "easy to administer." This was reported by 62 respondents, or 23.85 percent of the total. Percentages for the individual groups ranged from 8.5 percent to 34.43 percent.

Another reason given by teachers was that their test was "easy to score," which was reported by 39, or 15 percent of the total. Percentages for the individual groups ranged from 6.38 percent to 19.67 percent.

Other miscellaneous reasons reported by 22 respondents, or 8.46 percent of the total, included:

TABLE 29.--Reasons given for usage of present shorthand test as reported by teachers of public high school advanced shorthand classes.

Reason Given	Total Responses	Total				Group I			Group II			Group III		
		Number of Responses	Percent of Responses	Number of No Responses	Percent of No Responses	Responses			Responses			Responses		
						Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total
1. Easy to administer	260	62	23.85	198	76.15	14	26.92	5.38	10	27.78	3.85	7	14.89	2.69
2. Easy to score	260	39	15.00	221	85.00	11	21.15	4.23	5	13.89	1.92	3	6.38	1.15
3. Best kind of skill measurement available	260	203	78.08	57	21.92	38	73.08	14.62	26	72.22	10.00	39	82.98	15.00
4. Other[a]	260	22	8.46	238	91.54	4	7.69	1.54	5	13.89	1.92	3	6.38	1.15

[a]6 reported material was current; 5 reported test similar to on-the-job situation; 1 reported test requires thought and judgment; 2 reported validity and reliability of testing materials; 2 reported to check on effectiveness of instruction; 2 reported test as good motivating device with the awards program; 4 reported that varying speeds met teacher's testing situation.

Read the table thus: For Item 1 above there were 62 teachers who responded, representing 23.85% of the total of 260 questionnaires tabulated and 198 teachers representing 76.15% of the total respondents who did not reply to this item. The replies were distributed numerically and percentage-wise in Groups I-VI.

TABLE 29.--Continued.

Reason Given	Total Responses	Total				Group IV			Group V			Group VI		
		Number of Responses	Percent of Responses	Number of No Responses	Percent of No Responses	Responses			Responses			Responses		
						Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total
1. Easy to administer	260	62	23.85	198	76.15	7	24.14	2.69	21	34.43	8.08	3	8.57	1.15
2. Easy to score	260	39	15.00	221	85.00	5	17.24	1.92	12	19.67	4.62	3	8.57	1.15
3. Best kind of skill measurement available	260	203	78.08	57	21.92	23	79.31	8.85	50	81.97	19.23	27	77.14	10.38
4. Other[a]	260	22	8.46	238	91.54	4	13.79	1.54	4	6.56	1.54	2	5.71	.77

[a]6 reported material was current; 5 reported test similar to on-the-job situation; 1 reported test requires thought and judgment; 2 reported validity and reliabity of testing materials; 2 reported to check on effectiveness of instruction; 2 reported test as good motivating device with the awards program; 4 reported that varying speeds met teacher's testing situation.

Read the table thus: For Item 1 above there were 62 teachers who responded, representing 23.85% of the total of 260 questionnaires tabulated and 198 teachers representing 76.15% of the total respondents who did not reply to this item. The replies were distributed numerically and percentage-wise in Groups I-VI.

"material was current," "test similar to on-the-job situation," "material valid and reliable," etc.

It is noted that over 78 percent of the teachers reported using their test because it was the best kind of skill measurement available. This reply implies that they placed more emphasis on using the test as a teaching device rather than upon ease of grading. This emphasis is a commendable approach; however, the teacher should not overlook the research in shorthand testing which tends to support the use of objective tests as a good measurement of skill in shorthand note reading. (See Chapter II, page 15.)

It is recommended that teachers recognize the use of the objective, fill-in type test as an adjunct to the traditional testing method, thereby reducing the amount of time used in correcting student work.

Type of Transcript Required

Public high school teachers of advanced shorthand were asked to indicate the most frequently used type of transcript required. More than one item could be checked. Table 30 presents the methods used.

An analysis of Table 30 shows that a total of 237 respondents, or 91.15 percent, replied that the complete typewritten transcript was the type most frequently used. Percentages for the individual groups ranged from 86.54 percent to 96.55 percent.

TABLE 30.--Types of shorthand transcripts required most frequently as reported by teachers of public high school advanced shorthand classes

Type of Transcript	Total					Group I			Group II			Group III		
	Total Responses	Number of Responses	Percent of Responses	Number of Responses	Percent of No Responses	Responses			Responses			Responses		
						Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total
1. Complete typewritten transcript	260	237	91.15	23	8.85	45	86.54	17.31	34	94.44	13.08	41	87.23	15.77
2. Complete handwritten transcript	260	8	3.08	252	96.92	3	5.77	1.15	1	2.78	.38	1	2.13	.38
3. Fill-in blank transcript, typewritten	260	5	1.92	255	98.08	2	3 85	.77	2	5.56	.77	0	0	0
4. Fill-in blank transcript, handwritten	260	2	.77	258	99.23	0	0	0	0	0	0	0	0	0
5. Fill-in blank transcript, machine-scored	260	1	.38	259	99.62	0	0	0	0	0	0	0	0	0
6. Other[a]	260	5	1.92	255	98.08	1	1.92	.38	1	2.78	.38	1	2.13	.38

[a] 4 reported handwritten word list tests; 1 reported partial fill-in transcript--Civil Service type.

Read the table thus: For Item 1 above there were 237 teachers who responded, representing 91.15% of the total of 260 questionnaires tabulated and 23 teachers representing 8.85% of the total respondents who did not reply to this item. Replies are distributed numerically and percentage-wise in Groups I-VI.

TABLE 30.--Continued.

Type of Transcript	Total Responses	Total				Group IV			Group V			Group VI		
		Number of Responses	Percent of Responses	Number of No Responses	Percent of No Responses	Responses			Responses			Responses		
						Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total
1. Complete typewritten transcript	260	237	91.15	23	8.85	28	96.55	10.77	57	93.44	21.92	32	91.43	12.31
2. Complete handwritten transcript	260	8	3.08	252	96.92	1	3.45	.38	1	1.64	.38	1	2.86	.38
3. Fill-in blank transcript, typewritten	260	5	1.92	255	98.08	0	0	0	1	1.64	.38	0	0	0
4. Fill-in blank transcript, handwritten	260	2	.77	258	99.23	2	6.90	.77	0	0	0	0	0	0
5. Fill-in blank transcript, machine-scored	260	1	.38	259	99.62	0	0	0	1	1.64	.38	0	0	0
6. Other[a]	260	5	1.92	255	98.08	1	3.45	.38	1	1.64	.38	0	0	0

[a] 4 reported handwritten word list tests; 1 reported partial fill-in transcript--Civil Service type.

Read the table thus: For Item 1 above there were 237 teachers who responded, representing 91.15% of the total of 260 questionnaires tabulated and 23 teachers representing 8.85% of the total respondents who did not reply to this item. Replies are distributed numerically and percentage-wise in Groups I-VI.

Other types of transcripts were: fill-in blank transcript, typewritten; a fill-in blank transcript, handwritten; and a fill-in blank transcript, machine-scored. Only one respondent reported using a partial fill-in transcript test which was similar to one type of Civil Service test. This respondent was in Group 1 and came from a State which used a transcript of this type in their stenographic Civil Service examination.

Complete typewritten transcripts are most frequently used by over 91 percent of the teachers in advanced shorthand. This probably implies that teachers feel that a complete typewritten transcript for testing purposes is the most desirable method of reproducing the dictated work.

Methods Used for Scoring Shorthand Tests

Public high school teachers of advanced shorthand were asked to indicate methods used for scoring shorthand tests. Teachers were asked to check only one item. Table 31 presents the methods used.

An analysis of Table 31 shows that the most frequently used method for scoring shorthand tests was the hand-scoring method by the teacher. There was a total of 119 respondents, or 45.77 percent, who reported this method. Percentages for the individual groups ranged from 40.38 percent to 57.14 percent.

The second most frequently used method for scoring

TABLE 31.--Methods used for scoring shorthand tests as reported by teachers of public high school advanced shorthand classes

Methods Used	Total		Group I			Group II			Group III		
	Number of Responses	Percent of Responses	Responses			Responses			Responses		
			Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total
1. Hand scored by self	119	45.77	21	40.38	8.08	15	41.67	5.77	20	42.55	7.69
2. Hand scored by student	6	2.31	2	3.85	.77	0	0	0	0	0	0
3. Combination of Items 1 and 2	112	43.08	23	44.23	8.85	18	50.00	6.92	23	48.94	8.85
4. Machine scored	1	.38	0	0	0	0	0	0	0	0	0
5. Other[a]	3	1.15	1	1.92	.38	1	2.78	.38	0	0	0
Total No Response	19	7.31	5	0	0	2	0	0	4	0	0
Total	260	100.00	52		20.00	36		13.85	47		18.08

[a]2 reported making up own Civil Service type fill-in transcript test; 1 reported a self-testing method.

Read the table thus: For Item 1 above there were 119 teachers who responded, representing 45.77% of the total of 260 questionnaires tabulated. Replies were distributed numerically and percentage-wise in Groups I-VI.

TABLE 31.--Continued.

Methods Used	Total		Group IV			Group V			Group VI		
			Responses			Responses			Responses		
	Number of Responses	Percent of Responses	Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total
1. Hand scored by self	119	45.77	12	41.38	4.62	31	50.82	11.92	20	57.14	7.69
2. Hand scored by student	6	2.31	1	3.45	.38	3	4.92	1.15	0	0	0
3. Combination of Items 1 and 2	112	43.08	14	48.28	5.38	23	37.70	8.85	11	31.43	4.23
4. Machine scored	1	.38	0	0	0	1	1.64	.38	0	0	0
5. Other[a]	3	1.15	1	3.45	.38	0	0	0	0	0	0
Total No Response	19	7.31	1	0	0	3	0	0	4	0	0
Total	260	100.00	29		11.15	61		23.46	35		13.46

[a]2 reported making up own Civil Service type fill-in transcript test; 1 reported a self-testing method.

Read the table thus: For Item 1 above there were 119 teachers who responded, representing 45.77% of the total of 260 questionnaires tabulated. Replies were distributed numerically and percentage-wise in Groups I-VI.

shorthand tests was the combination of hand-scoring by the teacher and the student. There was a total of 112 respondents, or 43.08 percent who reported this method. Percentages for the individual groups ranged from 31.43 percent to 50 percent.

The next method used was hand-scoring by the student as reported by 6, or 2.31 percent.

The machine-scoring method was reported by 1 respondent, or .38 percent; 3, or 1.15 percent, reported fill-in transcript type tests. There were 19, or 7.31 percent, who did not answer this question.

Hand-scoring methods accounted for over 90 percent of the responses, with less than 1 percent who reported machine-scoring methods. Teachers have not used machine-scoring methods in spite of the fact that in another question (see Table 22, Types of Shorthand Tests Given) they indicated some use of tests that would lend themselves to this process. Tabulating equipment and computers are becoming commonplace; therefore, teachers located in schools that have this equipment should make arrangements to use it.

It is recommended that machine-scored objective-type shorthand speed tests be developed to meet the specific needs of the classroom. Currently some teachers are using objective tests, but the evidence indicates that they are not achieving the test's full potential. Research in this area has already been carried on which

tends to establish the validity and reliability between traditional typewritten transcripts and objective-type answer sheets. (See Chapter II, Review of the Literature, Section on Objective Type Tests, page 15.) The few states that are using objective-type tests are apparently satisfied with them. More studies of this nature are needed, in the researcher's opinion, to establish the validity and reliability of objective tests. What is more important is that innovative research should be undertaken to design the format, content, and machine-scoring procedures of objective tests in order to accommodate to the exacting requirements of the classroom environment.

Minimum Standards at the Grade A Level

Public high school teachers of advanced shorthand were asked to indicate the minimum standards at the Grade A level that were required. These standards applied to the dictation speed required, the length of dictation time, the length of transcription time, the percent of accuracy, and the performance times. Table 32 presents the standards.

An analysis of Table 32 shows that at the Grade A level for the dictation speed requirement there were 157 respondents, or 60.38 percent, who reported 120 words per minute as the minimum speed; 55, or 21.15 percent, reported

TABLE 32.--Minimum standards in advanced shorthand at Grade Level A as reported by public high school teachers of advanced shorthand classes .

Standards	Total Responses	Total				Group I Resp.			Group II Resp.			Group III Resp.		
		Number of Responses	Percent of Responses	Number of No Resp.	Percent of No Resp.	Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total
1. Speed required	260			25	9.62									
120 wpm.		157	60.38			34	65.38	13.08	14	38.89	5.38	26	55.32	10.00
130 wpm.		12	4.62			2	3.85	.77	2	5.56	.77	2	4.26	.77
140 wpm.		11	4.23			2	3.85	.77	0	0	0	4	8.51	1.54
Other[a]		55	21.15			8	15.38	3.08	15	41.67	5.77	9	19.15	3.46
2. Lgth. of dict. time	260			25	9.62									
1 min.		2	.77			0	0	0	0	0	0	0	0	0
3 min.		120	46.15			24	46.15	9.23	14	38.89	5.38	19	40.43	7.31
5 min.		107	41.15			22	42.31	8.46	17	47.22	6.54	19	40.43	17.76
Other[b]		6	2.31			0	0	0	0	0	0	3	6.38	.15
3. Lgth. of tran. time	260			27	10.38									
25 min.		29	11.15			6	11.54	2.31	3	8.33	1.15	5	10.64	1.92
30 min.		59	22.69			13	25.00	5.00	10	27.78	3.85	7	14.89	2.69
35 min.		56	21.54			9	17.31	3.46	6	16.67	2.31	11	23.40	4.23
Not specified		44	16.93			8	15.38	3.08	6	16.67	2.31	6	12.77	2.31
Other[c]		45	17.31			9	17.31	3.46	7	19.44	2.69	11	23.40	4.23
4. Percent of accuracy	260			30	[illegible].19									
95% accuracy		170	65.64			39	75.00	15.06	19	54.29	7.34	32	68.09	12.36
97% accuracy		12	4.63			3	5.77	1.16	0	0	0	2	4.26	.77
98% accuracy		32	12.36			4	7.69	1.54	5	14.29	1.93	5	10.64	1.93
Other[d]		16	6.18			0	0	0	6	17.14	2.32	1	2.13	.39
5. Times performed	260			31	11.92									
Once		73	28.08			11	21.15	4.23	13	36.11	5.00	12	25.53	4.62
Twice		60	23.08			9	17.31	3.46	6	16.67	2.31	9	19.15	3.46
Three times		74	28.46			22	42.31	8.46	6	16.67	2.31	17	36.17	6.54
Other[e]		22	8.46			3	5.77	1.15	5	13.89	1.92	3	6.38	1.15

[a]27--100 wpm; 23--110 wpm; 3--90 wpm; 2--no speed.

[b]3--2 min; 1--1 1/2 min; 1--4 min; 1--15 min.

[c]24--50-60 min; 16--40-45 min; 4--5-10-15 min; 1--90 min.

[d]11--mailability; 2--perfect copy; 1--80%; 1--70%.

[e]6--5-6 times; 3--2-4 times; 4--daily; 7--as many as possible; 2--weekly.

Read the table thus: For Item 1 a[illegible]ve (120 wpm) 157 teachers or 60.38% replied. Group replies were extended horizontally.

TABLE 32.--Continued.

Standards	Total Responses	Total				Group IV Resp.			Group V Resp.			Group VI Resp.		
		Number of Responses	Percent of Responses	Number of No Resp.	Percent of No Resp.	Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total
1. Speed required	260			25	9.62									
120 wpm.		157	60.38			22	75.86	8.46	39	63.93	15.00	22	62.86	8.46
130 wpm.		12	4.62			1	3.45	.38	4	6.56	1.54	1	12.86	.38
140 wpm.		11	4.23			2	6.90	.77	1	1.64	.38	2	5.71	.77
Other[a]		55	21.15			4	13.79	1.54	14	22.95	5.38	5	14.29	1.92
2. Lgth. of dict. time	260			25	9.62									
1 min.		2	.77			1	3.45	.38	0	0	0	1	2.86	.38
3 min.		120	46.15			17	58.62	6.54	32	52.46	12.31	14	40.00	5.38
5 min.		107	41.15			11	37.93	4.23	25	40.98	9.62	13	37.14	5.00
Other[b]		6	2.31			0	0	0	1	1.64	.38	2	5.71	.77
3. Lgth. of tran. time	260			27	10.38									
25 min.		29	11.15			5	17.24	1.92	6	9.84	2.31	4	11.43	.54
30 min.		59	22.69			8	27.59	3.08	15	24.59	5.77	6	17.14	2.31
35 min.		56	21.54			6	20.69	2.31	16	26.23	6.15	8	22.86	3.08
Not specified		44	16.93			6	20.69	2.31	14	22.95	5.38	4	11.43	1.54
Other[c]		45	17.31			4	13.79	1.54	6	9.84	2.31	8	22.86	3.08
4. Percent of accuracy	260			30	11.19									
95% accuracy		170	65.64			16	55.17	6.18	45	73.77	17.37	19	54.29	7.34
97% accuracy		12	4.63			1	3.45	.39	3	4.92	1.16	3	8.57	1.16
98% accuracy		32	12.36			9	31.03	3.47	4	6.56	1.54	5	14.29	1.93
Other[d]		16	6.18			3	10.34	1.16	4	6.56	1.54	2	5.71	.77
5. Times performed	260			31	11.92									
Once		73	28.08			8	27.59	3.08	22	36.07	8.46	7	20.00	2.69
Twice		60	23.08			9	31.03	3.46	12	19.67	4.62	15	42.86	5.77
Three times		74	28.46			9	31.03	3.46	15	24.59	5.77	5	14.29	1.92
Other[e]		22	8.46			2	6.90	.77	6	9.84	2.31	3	8.57	1.15

[a] 27-100 wpm; 23--110 wpm; 3--90 wpm; 2--no speed.

[b] 3--2 min; 1--1 1/2 min; 1--4 min; 1--15 min.

[c] 24--50-60 min; 16--40-45 min; 4--5-10-15 min; 1--90 min.

[d] 11--mailability; 3--perfect copy; 1--80%; 1--70%

[e] 6--5-6 times; 3--2-4 times; 4--daily; 7--as many as possible; 2--weekly.

Read the table thus: For Item 1 above (120 wpm) 157 teachers or 60.38% replied. Group replies were extended horizontally.

minimum speeds of 100 and 110 words per minute; and 12, or 4.62 percent; and 11, or 4.23 percent, reported speeds of 130 and 140 words per minute, respectively.

There were 120 respondents, or 46.15 percent, who reported 3 minutes as the minimum length of dictation time; 107, or 41.15 percent, who reported 5 minutes; and 6, or 2.31 percent, who reported 2 minutes, 4 minutes, and 15 minutes with brief rest intervals.

There were 59 respondents, or 22.69 percent, who reported 30 minutes as the minimum length of transcription time; 56, or 21.54 percent, reported 35 minutes; 29, or 11.15 percent, reported 25 minutes. In addition, there were 44 respondents, or 16.92 percent, who did not specify any time length; and 45, or 17.31 percent, who reported 40, 45, 50, 60 and 90 minutes as their minimum.

There were 74 respondents, or 28.46 percent, who reported three times as their minimum number of speed performance times; 73, or 28.08 percent, one time; 60, or 23.08 percent, two times; and 22, or 8.46 percent, weekly, monthly, and daily.

There were 170 respondents, or 65.64 percent, who reported a minimum 95 percent accuracy level; 32, or 12.36 percent, 97 percent accuracy; and 12, or 4.63 percent, 98 percent accuracy. Other accuracy levels reported by 16 respondents, or 6.18 percent, were 99 percent, 90 percent, 80 percent, and 70 percent.

The concensus of advanced shorthand teachers was that in order to receive a grade of A at the end of the course the student must attain the following minimum standards: a speed of 120 words per minute, for a dictation period of three or five minutes, with 95 percent accuracy of transcription, for a transcription period of thirty to thirty-five minutes. Teachers were evenly divided in their opinion of whether performance standards should be demonstrated once, twice, or three times.

There were noticeable variations in speeds and accuracy levels reported. Twenty-one percent of the teachers reported speeds of 90 to 110 words per minute and 8 percent of the teachers reported speeds of 130 to 140 words per minute. Concerning accuracy, over 16 percent of the teachers indicated higher accuracy levels.

The concensus is in line with, or slightly exceeds, the recommendation of Lamb:

> Three five-minute 100 words per minute tests transcribed with 95 percent accuracy, within a reasonable period of time, for the A grade level.[89]

Popham's recommendation is higher:

> At the end of the fourth semester, transcribe three five-minute 120 word tests with 95 percent accuracy for A.[90]

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[89]Lamb, op. cit., p. 206.

[90]Estelle Popham, "Measuring Competence of Students for Stenographic Positions," Evaluating Competence for Business Occupations, American Business Education Yearbook, Chap. 4, (1950), p. 69.

With regard to length of time allowed for transcription, there were 15 percent of the teachers who allowed the students a period of time in excess of 35 minutes with time allowances ranging from 40 to 90 minutes. This extra time may be accounted for by longer periods of dictation.

This report seems to indicate that there is a great deal more uniformity in standards in advanced shorthand at the Grade A level than is implied by Crandall and Christensen in their article concerning the diversity of standards. (See Chapter II, Review of the Literature, page 71.)

It is recommended that teachers be made aware of the standards being set at the Grade A level by authorities and by the majority of business teachers; but that they set their own requirements justifying deviations from the norm according to local conditions.

Minimum Standards at the Grade B Level

Public high school teachers of advanced shorthand were asked to indicate the minimum standards at the Grade B level that were required. These standards applied to the dictation speed required, the length of dictation time, the length of transcription time, the percent of accuracy, and the performance times. Table 33 presents the standards.

TABLE 33.--Minimum standards in advanced shorthand at grade level B as reported by public high school teachers of advanced shorthand classes

Standards	Total Responses	Total				Group I Resp.			Group II Resp.			Group III Resp.		
		Number of Responses	Percent of Responses	Number of No Resp.	Percent of No Resp.	Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total
1. Speed required	260			30	11.54									
100 wpm.		107	41.15			19	36.54	7.31	14	38.89	5.38	15	31.91	5.77
110 wpm.		70	26.92			16	30.77	6.15	5	13.89	1.92	15	31.91	5.77
120 wpm.		25	9.62			6	11.54	2.31	1	2.78	.38	8	17.02	3.08
Other[a]		28	10.77			5	9.62	1.92	8	22.22	3.08	3	6.38	1.15
2. Lgth. of dict. time	260			31	11.92									
1 min.		2	.77			0	0	0	0	0	0	0	0	0
3 min.		112	43.08			27	51.92	10.38	14	38.89	5.38	16	34.04	6.15
5 min.		110	42.31			19	36.54	7.31	14	38.89	5.38	22	46.81	8.46
Other[b]		5	1.92			0	0	0	0	0	0	3	6.38	1.15
3. Lgth. of tran. time				33	12.69									
20 min.		8	3.08			0	0	0	3	5.56	.77	1	2.13	.38
25 min.		27	10.38			8	15.38	3.08	1	2.78	.38	4	8.51	1.54
30 min.		64	24.62			13	25.00	5.00	10	27.78	3.85	11	23.40	4.23
35 min.		46	17.69			7	13.46	2.69	5	13.89	1.92	9	19.15	3.46
Not specified		45	17.31			8	15.38	3.08	7	19.44	2.69	7	14.89	2.69
Other[c]		37	14.23			9	17.31	3.46	4	11.11	1.54	8	17.02	3.08
4. Percent of accuracy	260			33	12.69									
95% accuracy		173	66.54			39	75.00	15.00	21	58.33	8.08	34	72.34	13.08
97% accuracy		18	6.92			4	7.69	1.54	0	0	0	4	8.51	1.54
98% accuracy		21	8.08			3	5.77	1.15	3	8.33	1.15	2	4.26	.77
Other[d]		15	5.77			0	0	0	5	13.89	1.92	1	2.13	.38
5. Times performed	260			36	13.85									
Once		74	28.46			12	23.08	4.62	11	30.56	4.23	11	23.40	4.23
Twice		58	22.31			9	17.31	3.46	6	16.67	2.31	9	19.15	3.46
Three times		73	28.08			21	40.38	8.08	6	16.67	2.31	19	40.43	7.31
Other[e]		19	7.30			3	5.77	1.15	4	11.11	1.54	2	4.26	.77

[a] 8 rep. 110 wpm; 6 rep. 120 wpm; 5 rep. 70 wpm.

[b] 3 rep. 2 min; 1 rep. 15 min; 1 rep. 1 1/2 min.

[c] 30 rep. 40-60 min; 3 rep. 10-16 min; 1 rep. 90 min; 1 rep. 1 1/2 to 2 min.

[d] 9 rep. mailability; 2 rep. 90%; 2-96%; 1-85%; 1-70%; 1-3 errors.

[e] 5 rep. 5 times; 11 rep. regularly; 3 rep. 6 times; 3 rep. 4 times.

Read the table thus: For Item 1 above (80 wpm.) 70 teachers or 26.92% replied. Group replies were extended horizontally.

TABLE 33.--Continued.

Standards	Total Responses	Total				Group IV Resp.			Group V Resp.			Group VI Resp.		
		Number of Responses	Percent of Responses	Number of No Resp.	Percent of No Resp.	Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total
1. Speed required	260			30	11.54									
100 wpm.		107	41.15			15	51.72	5.77	25	40.98	9.62	19	54.29	7.31
110 wpm.		70	26.92			10	34.48	3.85	17	27.87	6.54	7	20.00	2.69
120 wpm.		25	9.62			2	6.90	.77	5	8.20	1.92	3	8.57	1.15
Other[a]		28	10.77			1	3.45	.38	10	16.39	3.85	1	2.86	.38
2. Lgth. of dict. time	260			31	11.92									
1 min.		2	.77			1	3.45	.38	1	1.64	.38	0	0	0
3 min.		112	43.08			17	58.62	6.54	27	44.26	10.38	11	31.43	4.23
5 min.		110	42.31			10	34.48	3.85	28	45.90	10.77	17	48.57	6.54
Other[b]		5	1.92			0	0	0	1	1.64	.38	1	2.86	.38
3. Lgth. of tran. time	260			33	12.69									
20 min.		8	3.08			4	13.79	1.54	0	0	0	1	2.86	.38
25 min.		27	10.38			4	13.79	1.54	7	11.48	2.69	3	8.57	1.15
30 min.		64	24.62			6	20.69	2.31	18	29.51	6.92	6	17.14	2.31
35 min.		46	17.69			5	17.24	1.92	13	21.31	5.00	7	20.00	2.69
Not specified		45	17.31			6	20.69	2.31	13	21.31	5.00	4	11.43	1.54
Other[c]		37	14.23			3	10.34	1.15	5	8.20	1.92	8	22.86	3.08
4. Percent of accuracy	260			33	12.69									
95% accuracy		173	66.54			15	51.72	5.77	46	75.41	17.69	18	51.43	6.92
97% accuracy		18	6.92			3	10.34	1.15	3	4.92	1.15	4	11.43	1.54
98% accuracy		21	8.08			7	24.14	2.69	1	1.64	.38	5	4.29	1.92
Other[d]		15	5.77			3	10.34	1.15	5	8.20	1.92	1	2.86	.38
5. Times performed	260			36	13.85									
Once		74	28.46			9	31.03	3.46	22	36.07	8.46	9	25.71	3.46
Twice		58	22.31			9	31.03	3.46	13	21.31	5.00	12	34.29	4.62
Three times		73	28.08			7	24.14	2.69	14	22.95	5.38	6	17.14	2.31
Other[e]		19	7.30			2	6.90	.77	5	8.20	1.92	3	8.57	1.15

[a]8 rep. 110 wpm; 6 rep. 120 wpm; 5 rep. 70 wpm.

[b]3 rep. 2 min; 1 rep. 15 min; 1 rep. 1 1/2 min.

[c]30 rep. 40-60 min; 3 rep. 10-16 min; 1 rep. 90 min; 1 rep. 1 1/2 to 2 min.

[d]9 rep. mailability; 2 rep. 90%; 2-96%; 1-85%; 1-70%; 1-3 errors.

[e]5 rep. 5 times; 11 rep. regularly; 3 rep. 6 times; 3 rep. 4 times.

Read the table thus. For Item 1 above (80 wpm.) 70 teachers or 26.92% replied. Group replies were extended horizontally.

An analysis of Table 33 shows that at the Grade B level for the dictation speed requirement there were 107 respondents, or 41.15 percent, who reported 100 words per minute as the minimum speed; 70 respondents, or 26.92 percent, reported a minimum speed of 110 words per minute. There were 25 respondents, or 9.62 percent, who reported 120 words per minute; and 28, or 10.77 percent, at 80 and 90 words per minute.

The minimum length of dictation time reported was 3 minutes by 112 respondents, or 43.08 percent; and 5 minutes by 110, or 42.31 percent.

The minimum length of transcription time indicated was 30 minutes by 64 respondents, or 24.62 percent; 35 minutes by 46 respondents, or 17.69 percent; and not specified by 30 respondents. However, 30 respondents indicated a minimum of 40 to 60 minutes.

The minimum percentage of accuracy of 95 percent was reported by 173 respondents, or 66.54 percent.

There were 74 respondents, or 28.46 percent; and 73, or 28.08 percent, who reported 1 time and 3 times, respectively, as the minimum number of times the speed requirement must be demonstrated.

The profile for the Grade B at the end of the course as reported by the majority of the teachers was: a speed of 100 words per minute for a period of from 3

to 5 minutes, 95 percent accuracy level, with a transcription period of thirty to thirty-five minutes. Teachers were evenly divided in their opinions of whether performance should be demonstrated once, twice, or three times.

There were noticeable variations in speed and accuracy levels reported. There were 35 percent of the teachers who stated that speed levels were higher; that is, from 110 to 120 words per minute; and 10 percent indicated lower speeds ranging from 80 to 90 words per minute. Concerning accuracy, about 15 percent reported higher accuracy levels. Few reported lower accuracy levels.

This profile is in line with the recommendation of Lamb:

> . . . three three-minute tests at 100 words per minute transcribed with 95 percent accuracy, within a reasonable period of time, for the B grade level.[91]

Popham recommends high standards:

> At the end of the fourth semester, transcribe one 120 words per minute test and two 100 word tests with 95 percent accuracy for B.[92]

Concerning the length of time allowed for transcription, there were 11 percent of the teachers who allowed students a period of time in excess of thirty-five

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[91]Lamb, op. cit., p. 206.

[92]Popham, op. cit., p. 69.

minutes, ranging from 40 to 90 minutes. This extra time may be accounted for by longer periods of dictation.

This report seems to indicate as with the Grade A level standards, that there is a great deal more uniformity in standards than is implied by Crandall and Christensen in their article concerning the diversity of standards. (See Chapter II, Review of the Literature, page 71.)

It is recommended that teachers be made aware of standards being set at the Grade B level by authorities and the majority of business teachers; and that they set their own requirements justifying deviations from the norm according to local conditions.

Minimum Standards at the Grade C Level

Public high school teachers of advanced shorthand were asked to indicate the minimum standards at the Grade C level that were required. These standards applied to the dictation speed required, the length of dictation time, the length of transcription time, the percent of accuracy, and the performance times. Table 34 presents the standards.

An analysis of Table 34 shows that at the Grade C level for the dictation speed requirement there were 86 respondents, or 33.08 percent, who reported 100 words per minute as the minimum speed; 70, or 26.92 percent,

TABLE 34.--Minimum standards in advanced shorthand at grade level C as reported by public high school teachers of advanced shorthand classes

Standards	Total Responses	Total				Group I Resp.			Group II Resp.			Group III Resp.		
		Number of Responses	Percent of Responses	Number of No Resp.	Percent of No Resp.	Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total
1. Speed required	260			37	14.23									
80 wpm.		70	26.92			16	30.77	6.15	10	27.78	3.85	9	19.15	3.46
90 wpm.		48	18.46			6	11.54	2.31	4	11.11	1.54	9	19.15	3.46
100 wpm.		86	33.08			20	38.46	7.69	7	19.44	2.69	18	38.30	6.92
Other[a]		19	7.31			3	5.77	1.15	4	11.11	1.54	4	8.51	1.54
2. Lgth. of dict. time	260			35	13.46									
1 min.		1	.38			0	0	0	0	0	0	0	0	0
3 min.		102	39.23			24	46.15	9.23	10	27.78	3.85	15	31.91	5.77
5 min.		117	45.00			21	40.38	8.08	15	41.67	5.77	22	46.81	8.46
Other[b]		5	1.93			0	0	0	0	0	0	3	6.38	1.15
3. Lgth. of tran. time	260			37	14.23									
20 min.		13	5.00			0	0	0	0	0	0	4	8.51	1.54
25 min.		26	10.00			7	13.46	2.69	2	5.56	.77	5	10.64	1.92
30 min.		58	22.31			12	23.08	4.62	9	25.00	3.46	7	14.89	2.69
35 min.		46	17.69			9	17.31	3.46	5	13.89	1.92	8	17.02	3.08
Not specified		45	17.31			8	15.38	3.08	7	19.44	2.69	7	14.89	2.69
Other[c]		35	13.46			8	15.38	3.08	3	8.33	1.15	8	17.02	3.08
4. Percent of accuracy	260			37	14.23									
95% accuracy		174	66.92			39	75.00	15.00	17	47.22	6.54	34	72.34	13.08
97% accuracy		10	3.85			3	5.77	1.15	0	0	0	2	4.26	.77
98% accuracy		23	8.85			2	3.85	.77	4	11.11	1.54	3	6.38	1.15
Other[d]		16	6.15			1	1.92	.38	5	13.89	1.92	1	2.13	.38
5. Times performed	260			41	15.77									
Once		69	26.54			10	19.23	3.85	9	25.00	3.46	11	23.40	4.23
Twice		61	23.46			13	25.00	5.00	6	16.67	2.31	8	17.02	3.08
Three times		67	25.77			18	34.62	6.92	4	11.11	1.54	18	38.30	6.92
Other[e]		22	8.46			3	5.77	1.15	4	11.11	1.54	3	6.38	1.15

[a] 8 rep. 110 wpm; 6 rep. 120 wpm; 5 rep. 70 wpm.

[b] 3 rep. 2 min; 1 rep. 15 min; 1 rep. 1 1/2 min.

[c] 30 rep. 40-60 min; 3 rep. 10-16 min; 1 rep. 90 min; 1 rep. 1 1/2 to 2 min.

[d] 9 rep. mailability; 2 rep. 90%; 2-96%; 1-85%; 1-70%; 1-3 errors.

[e] 5 rep. 5 times; 11 rep. regularly; 3 rep. 6 times; 3 rep. 4 times.

Read the table thus: For Item 1 above (80 wpm.) 70 teachers or 26.92% replied. Group replies were extended horizontally.

TABLE 34.--Continued.

Standards	Total Responses	Total: Number of Responses	Total: Percent of Responses	Total: Number of No Resp.	Total: Percent of No Resp.	Group IV Resp.: Number	Group IV Resp.: Percent of Group	Group IV Resp.: Percent of Total	Group V Resp.: Number	Group V Resp.: Percent of Group	Group V Resp.: Percent of Total	Group VI Resp.: Number	Group VI Resp.: Percent of Group	Group VI Resp.: Percent of Total
1. Speed required	260			37	14.23									
80 wpm.		70	26.92			8	27.59	3.08	15	24.59	5.77	12	34.29	4.62
90 wpm.		48	18.46			9	31.03	3.46	14	22.95	5.38	6	17.14	2.31
100 wpm.		86	33.08			9	31.03	3.46	20	32.79	7.69	12	34.29	4.62
Other[a]		19	7.31			1	3.45	.38	6	9.84	2.31	1	2.86	.38
2. Lgth. of dict. time	260			35	13.46									
1 min.		1	.38			1	3.45	.38	0	0	0	0	0	0
3 min.		102	39.23			17	58.62	6.54	25	40.98	9.62	11	31.43	4.23
5 min.		117	45.00			10	34.48	3.85	30	40.18	11.54	19	54.29	7.31
Other[b]		5	1.93			0	0	0	1	1.64	.38	1	2.86	.38
3. Lgth. of tran. time	260			37	14.23									
20 min.		13	5.00			4	13.79	1.54	3	4.92	1.15	2	5.71	.77
25 min.		26	10.00			3	10.34	1.15	5	8.20	1.92	4	11.43	1.54
30 min.		58	22.31			7	24.14	2.69	18	29.51	6.92	5	14.29	1.92
35 min.		46	17.69			5	17.24	1.92	11	18.03	4.23	8	22.86	3.08
Not specified		45	17.31			6	20.69	2.31	13	21.31	5.00	4	11.43	1.54
Other[c]		35	13.46			3	10.34	1.15	5	8.20	1.92	8	22.86	3.08
4. Percent of accuracy	260			37	14.23									
95% accuracy		174	66.92			17	58.62	6.54	46	75.41	17.69	21	60.00	8.08
97% accuracy		10	3.85			1	3.45	.38	2	3.28	.77	2	5.71	.77
98% accuracy		23	8.85			7	24.14	2.69	2	3.28	.77	5	14.29	1.92
Other[d]		16	6.15			3	10.34	1.15	5	8.20	1.92	1	2.86	.38
5. Times performed	260			41	15.77									
Once		69	26.54			7	24.14	2.69	23	37.70	8.85	9	25.71	3.46
Twice		61	23.46			8	27.59	3.08	13	21.31	5.00	13	37.14	5.00
Three times		67	25.77			8	27.59	3.08	14	22.95	5.38	5	14.29	1.92
Other[e]		22	8.46			4	13.79	1.54	4	6.56	1.54	4	11.43	1.54

[a] 8 rep. 110 wpm; 6 rep. 120 wpm; 5 rep. 70 wpm.

[b] 3 rep. 2 min; 1 rep. 15 min; 1 rep. 1 1/2 min.

[c] 30 rep. 40-60 min; 3 rep. 10-16 min; 1 rep. 90 min; 1 rep. 1 1/2 to 2 min.

[d] 9 rep. mailability; 2 rep. 90%; 2-96%; 1-85%; 1-70%; 1-3 errors.

[e] 5 rep. 5 times; 11 rep. regularly; 3 rep. 6 times; 3 rep. 4 times.

Read the table thus: For Item 1 above (80 wpm.) 70 teachers or 26.92% replied. Group replies were extended horizontally.

reported a minimum speed of 80 words; and 48, or 18.46 percent, 90 words per minute.

The minimum length of dictation time reported was 5 minutes by 117 respondents, or 45 percent; and 3 minutes by 102, or 39.23 percent.

The minimum length of transcription time indicated was 30 minutes by 58 respondents, or 22.31 percent; 35 minutes by 46, or 17.69 percent; and no specified time by 45, or 17.31 percent. However, 30 respondents indicated a minimum of from 40 to 60 minutes.

The minimum percentage of accuracy of 95 percent was reported by 174 respondents, or 66.92 percent.

There were 69 respondents, or 26.54 percent; 67, or 25.77 percent; and 61, or 23.46 percent, who reported performance times of one time, three times, and two times, respectively.

The three speeds mentioned for a Grade C were 100, 80, and 90 words per minute by approximately 33 percent, 27 percent and 18 percent, respectively. The length of dictation time was for three and five minutes, at 95 percent accuracy level, with a transcription period of thirty to thirty-five minutes. Teachers were evenly divided in their opinion of whether performance should be demonstrated once, twice, or three times.

There were noticeable variations in accuracy levels and periods of time allowed for transcription, but they followed the same pattern as for the Grades A and B.

The requirements of teachers at the C level are higher than those reported by Lamb who says:

> Three five-minute 80 words per minute tests transcribed with 95 percent accuracy, with a reasonable period of time, for the C grade level.[93]

Popham says in this regard:

> Transcribe three 100 words per minute tests for C.[94]

It is recommended that teachers be aware of what the authorities recommend for standards for the Grade C level, and that standards are kept in line with the abilities of students and the needs of the working world.

Minimum Standards at the Grade D Level

Public high school teachers of advanced shorthand were asked to indicate the minimum standards at the Grade D level that were required. These standards applied to the dictation speed required, the length of dictation time, the length of transcription time, the percent of accuracy, and the performance times. Table 35 presents the standards.

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[93] Lamb, op. cit., p. 206.

[94] Popham, op. cit., p. 69.

TABLE 35.--Minimum standards in advanced shorthand at grade level D as reported by public high school teachers of advanced shorthand classes

Standards	Total Responses	Total				Group I Resp.			Group II Resp.			Group III Resp.		
		Number of Responses	Percent of Responses	Number of No Resp.	Percent of No Resp.	Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total
1. Speed required	260			48	18.46									
60 wpm.		32	12.31			7	13.46	2.69	8	22.22	3.08	3	6.38	1.15
70 wpm.		28	10.77			6	11.54	2.31	3	8.33	1.15	7	14.89	2.69
80 wpm.		86	33.08			19	36.54	7.31	8	22.22	3.08	14	29.79	5.38
Other[a]		66	25.38			11	21.15	4.23	6	16.67	2.31	14	29.79	5.38
2. Lgth. of dict. time	260			48	18.53									
1 min.		4	1.43			2	3.85	.77	0	0	0	0	0	0
3 min.		100	38.62			22	42.31	8.49	12	33.33	4.63	14	29.79	5.41
5 min.		102	39.38			19	36.54	7.34	11	30.56	4.25	22	46.81	8.49
Other[b]		5	1.93			0	0	0	0	0	0	2	4.26	.77
3. Lgth. of tran. time	260			53	20.38									
20 min.		10	3.85			1	1.92	.38	1	2.78	.38	1	2.13	.38
25 min.		22	8.46			5	9.62	1.92	0	0	0	6	12.77	2.31
30 min.		54	20.77			12	23.08	4.62	8	22.22	1.92	7	14.89	2.69
35 min.		43	16.54			7	13.46	2.69	5	13.89	1.92	10	21.28	3.85
Not specified		47	18.08			9	17.31	3.46	7	19.44	2.69	6	12.77	2.31
Other[c]		31	11.92			8	15.38	3.08	3	8.33	1.15	6	12.77	2.31
4. Percent of accuracy	260			50	19.22									
95% accuracy		164	63.08			38	73.08	14.62	14	38.89	5.38	30	63.83	11.54
97% accuracy		8	3.08			1	1.92	.38	1	2.78	.38	2	4.26	.77
98% accuracy		19	7.31			3	5.77	1.15	3	8.33	1.15	3	6.38	1.15
Other[d]		19	7.31			1	1.92	.38	6	16.67	2.31	3	6.38	1.15
5. Times performed	260			57	21.92									
Once		69	26.54			13	25.00	5.00	8	22.22	3.08	12	25.53	4.62
Twice		49	18.85			9	17.31	3.56	5	13.89	1.92	1	12.77	2.31
Three times		64	24.61			15	28.85	4.77	5	13.89	1.92	18	38.30	6.92
Other[e]		21	8.08			4	7.69	1.54	3	8.33	1.15	2	4.26	.77

[a]25--90 wpm; 24--100-110 wpm; 17--no grade D.

[b]3--2 min; 1--15 min; 1--1 1/2 min.

[c]27--40-60 min; 3--10-16 min; 1--90 min.

[d]5--65-90%; 3--perfect copy; 11--mailability.

[e]9--as many as possible; 3--6 times; 2--5 times; 7--gave misc. replies.

Read the table thus: For Item 1 above (60 wpm.) 32 teachers or 12.31% replied. Group replies were extended horizontally.

TABLE 35.--Continued.

Standards	Total Responses	Total: Number of Responses	Total: Percent of Responses	Total: Number of No Resp.	Total: Percent of No Resp.	Group IV Resp.: Number	Group IV Resp.: Percent of Group	Group IV Resp.: Percent of Total	Group V Resp.: Number	Group V Resp.: Percent of Group	Group V Resp.: Percent of Total	Group VI Resp.: Number	Group VI Resp.: Percent of Group	Group VI Resp.: Percent of Total
1. Speed required	260			48	18.46									
60 wpm.		32	12.31			4	13.79	1.54	5	8.20	1.92	5	14.29	1.92
70 wpm.		28	10.77			3	10.34	1.15	7	11.48	2.69	2	5.71	.77
80 wpm.		86	33.08			14	48.28	5.38	20	32.79	7.69	11	31.43	4.23
Other[a]		66	25.38			6	20.69	2.31	19	31.15	7.31	10	28.57	3.85
2. Lgth. of dict. time	260			48	18.53									
1 min.		4	1.43			1	3.45	.39	1	1.67	.39	0	0	0
3 min.		100	38.62			16	55.17	6.18	22	36.67	8.49	14	40.00	5.41
5 min.		102	39.38			11	37.93	4.25	27	45.00	10.42	12	34.29	4.63
Other[b]		5	1.93			0	0	0	1	1.67	.39	2	5.71	.77
3. Lgth. of tran. time	260			53	20.38									
20 min.		10	3.85			2	6.90	.77	2	3.28	.77	3	8.57	1.15
25 min.		22	8.46			4	13.79	1.54	4	6.56	1.54	3	8.57	1.15
30 min.		54	20.77			5	17.24	1.92	17	27.87	6.54	5	14.29	1.92
35 min.		43	16.54			6	20.69	2.31	9	14.75	3.46	6	17.14	2.31
Not specified		47	18.08			7	24.14	2.69	13	21.31	5.00	5	14.29	1.92
Other[c]		31	11.92			3	10.34	1.15	5	8.20	1.92	6	17.14	2.31
4. Percent of accuracy	260			50	19.22									
95% accuracy		164	63.08			15	51.72	5.77	44	72.13	16.92	23	65.71	8.85
97% accuracy		8	3.08			1	3.45	.38	2	3.28	.77	1	2.86	.38
98% accuracy		19	7.31			7	24.14	2.69	1	1.64	.38	2	5.71	.77
Other[d]		19	7.31			4	13.79	1.54	4	6.56	1.54	1	2.86	.38
5. Times performed	260			57	21.92									
Once		69	26.54			5	17.24	1.92	23	37.70	8.85	8	22.86	3.08
Twice		49	18.85			8	27.59	3.08	10	16.39	3.85	11	31.43	4.23
Three times		64	24.61			9	31.03	3.46	13	21.31	5.00	4	11.43	1.54
Other[e]		21	8.08			4	13.79	1.54	3	4.92	1.15	5	14.29	1.92

[a]25--90 wpm; 24--100-110 wpm; 17--no grade D.

[b]3--2 min; 1--15 min; 1--1 1/2 min.

[c]27--40-60 min; 3--10-16 min; 1--90 min.

[d]5--65-90%; 3--perfect copy; 11--mailability.

[e]9--as many as possible; 3--6 times; 2--5 times; 7--gave misc. replies.

Read the table thus: For Item 1 above (60 wpm.) 32 teachers or 12.31% replied. Group replies were extended horizontally.

An analysis of Table 35 shows that at the Grade D level for the dictation speed requirement there were 86 respondents, or 33.08 percent, who reported 80 words per minute as the minimum speed; 66 respondents, or 25.38 percent, who reported speeds ranging from 90 to 110 words per minute; 32, or 12.31 percent, at 60 words per minute; and 28, or 10.77 percent, at 70 words per minute.

The minimum length of dictation time reported was five minutes by 102 respondents, or 39.38 percent; and three minutes by 100, or 38.61 percent.

The minimum length of transcription time indicated was 30 minutes by 102 respondents, or 39.38 percent; 35 minutes by 43, or 16.54 percent; and not specified by 47, or 18.08 percent. However, 30 respondents indicated a minimum of from 40 to 60 minutes.

The minimum percentage of accuracy of 95 percent was reported by 164 respondents, or 63.08 percent.

There were 69 respondents, or 26.54 percent, and 64 respondents, or 24.62 percent, who reported performance times of one and three times, respectively.

The majority of the teachers reporting felt that the following requirements were necessary at the Grade D level: 80 words per minute,[95] for a period of from three

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[95]There were 33 percent who felt that 80 words per minute was sufficient, and 24 percent who felt that 60 and 70 words per minute were adequate at the Grade D level.

or five minutes, at 95 percent accuracy level, with a transcription period of thirty to thirty-five minutes. Teachers were evenly distributed in their opinion of whether performance should be demonstrated once, twice, or three times. However, many teachers questioned the value of giving "D" standards.

Lamb indicates that a recording skill of 80 words per minute for five minutes is a low standard and should be identified with the Grade D level of classroom work.[96]

Lamb is concerned about the D level type student. On occasion there are students that are slow but accurate in the stenographic skills.[97] (In most instances the ability to take fast dictation means the ability to transcribe quickly.) She feels that the grades should be tempered to accommodate these slower students for the reason that there are situations in which their abilities can be profitably used, since there are frequently slow and hesitating dictators in the business environment. In addition, she thinks that we should account for the maturity level of the high school student who has potential but has not exhibited maturity as yet. By motivating these students, it is possible to bring them up to satisfactory standards.

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[96] Lamb, op. cit.

[97] Ibid.

It is recommended that teachers set standards that are more flexible and more realistic.

Preparation of Students for Civil Service Examinations

Public high school teachers of advanced shorthand were asked to indicate whether they prepared their students for State Civil Service stenographic examinations. Table 36 gives data regarding number of teachers preparing students.

An analysis of Table 36 indicates that there were 156 respondents, or 60 percent, who reported preparing their students for the State Civil Service examination. There were 84, or 32.31 percent, who indicated that they did not prepare their students; and 20, or 7.69 percent, who did not reply to the question.

It is noteworthy that 60 percent of the advanced shorthand teachers prepared their students for Civil Service examinations; and it is recommended that all teachers give consideration to preparing their students specifically to meet the entrance level requirements of their State's Civil Service examination.

Specific Preparation Given to Students for Civil Service Examinations

Public high school teachers of advanced shorthand were asked to indicate the methods used to prepare their students for State Civil Service stenographic examinations. Table 37 gives data regarding specific preparation given.

TABLE 36.--Number of public high school teachers of advanced shorthand reported to be preparing students for Civil Service examinations

Reply	Total				Group I			Group II			Group III		
	Number of Responses	Percent of Responses	Number of No Responses	Percent of No Responses	Responses			Responses			Responses		
					Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total
1. Yes	156	60.00			33	63.46	12.69	27	75.00	10.38	27	57.45	10.38
2. No	84	32.31			14	26.92	5.38	7	19.44	2.69	15	31.91	5.77
3. No response			20	7.69									

Read the table thus: For Item 1 above there were 156 teachers who responded, representing 60% of the total of 260 questionnaires tabulated and under item three 20 teachers representing 6.69% of the total respondents who did not reply to this item. Replies are distributed numerically and percentage-wise in Groups I-VI.

TABLE 36.--Continued.

Reply	Total				Group IV Responses			Group V Responses			Group VI Responses		
	Number of Responses	Percent of Responses	Number of No Responses	Percent of No Responses	Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total
1. Yes	156	60.00			20	78.97	7.69	34	55.74	13.08	15	42.86	5.77
2. No	84	32.31			8	27.59	3.08	24	39.34	9.23	16	45.71	6.15
3. No response			20	7.69									

Read the table thus: For Item 1 above there were 156 teachers who responded, representing 60% of the total of 260 questionnaires tabulated and under item three 20 teachers representing 6.69% of the total respondents who did not reply to this item. Replies are distributed numerically and percentage-wise in Groups I-VI.

TABLE 37.--Methods used to prepare students for State Civil Service examinations as reported by public high school teachers of advanced shorthand classes

Methods Used	Total					Group I			Group II			Group III		
	Total Responses	Number of Responses	Percent of Responses	Number of No Responses	Percent of No Responses	Responses			Responses			Responses		
						Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total
1. Use Civil Service sample test booklets	260	89	34.23	171	65.77	20	38.46	7.69	15	41.67	5.77	15	31.91	5.77
2. Give dictation similar to state tests given in area	260	98	37.69	162	62.31	19	36.54	7.31	21	58.33	8.08	16	34.04	6.15
3. Secure old State Civil Service tests for student practice	260	30	11.58	229	88.42	5	9.62	1.93	3	8.33	1.16	5	10.64	1.93
4. Use old Federal Gov't. tests for student practice	260	29	11.15	231	88.85	4	7.69	1.54	5	13.89	1.12	4	8.51	1.54
5. Other[a]	260	41	15.77	219	84.23	9	17.31	3.46	5	13.89	1.92	7	14.89	2.69

[a]9 reported used prepared text and workbook relative to Civil Service transcribing & testing; 8 reported explained nature of testing in local state, scoring techniques, etc.; 7 reported drill on mathematics, vocabulary, spelling, filing, and general information; 8 reported Civil Service test given in class by instructor or Civil Service representative; 4 reported giving practice copying printed material in shorthand similar to state test; 4 reported giving dictation; 1 reported making own test similar to Civil Service test, fill-in transcript.

Read the table thus: For Item 1 above there were 89 teachers who responded, representing 34.23% of the total of 260 questionnaires tabulated and 171 teachers representing 65.77% of the total respondents who did not reply to this item. Replies are distributed numerically and percentage-wise in Groups I-VI.

TABLE 37.--Continued.

Methods Used	Total					Group IV			Group V			Group VI		
	Total Responses	Number of Responses	Percent of Responses	Number of No Responses	Percent of No Responses	Responses			Responses			Responses		
						Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total
1. Use Civil Service sample test booklets	260	89	34.23	171	65.77	9	31.03	3.46	19	31.15	7.31	11	31.43	4.23
2. Give dictation similar to state tests given in area	260	98	37.69	162	62.31	13	44.83	5.00	24	39.34	9.23	5	14.29	1.92
3. Secure old State Civil Service tests for student practice	260	30	11.58	229	88.42	5	17.86	1.93	10	16.39	3.86	2	5.71	.77
4. Use old Federal Gov't. tests for student practice	260	29	11.15	231	88.85	4	13.79	1.54	12	19.67	4.62	0	0	0
5. Other[a]	260	41	15.77	219	84.23	9	31.03	3.46	8	13.11	3.08	3	8.57	1.15

[a]9 reported used prepared text and workbook relative to Civil Service transcribing & testing; 8 reported explained nature of testing in local state, scoring techniques, etc.; 7 reported drill on mathematics, vocabulary, spelling, filing, and general information; 8 reported Civil Service test given in class by instructor or Civil Service representative; 4 reported giving practice copying printed material in shorthand similar to state test; 4 reported giving dictation; 1 reported making own test similar to Civil Service test, fill-in transcript.

Read the table thus: For Item 1 above there were 89 teachers who responded, representing 34.23% of the total of 260 questionnaires tabulated and 171 teachers representing 65.77% of the total respondents who did not reply to this item. Replies are distributed numerically and percentage-wise in Groups I-VI.

An analysis of Table 37 shows that 98 respondents, or 37.69 percent, prepared their students for Civil Service examinations by giving dictation similar to the State tests given in the area. There were 89 respondents, or 34.23 percent, who indicated that they used Civil Service sample test booklets; 30, or 11.58 percent, old State Civil Service tests; and 41, or 15.77 percent, other methods. Among these other methods was reported the use of practice in copying from printed dictation similar to State testing; the use of prepared text material relative to Civil Service testing; and the use of drills on mathematics, spelling, filing, etc.[98]

Teachers have demonstrated an ability to select useful aids in preparing students for Civil Service examinations, and it is recommended that they continue doing so.

PART II

Transcription

Type of Dictation Test Used Most Frequently by Transcription Teachers

Public high school teachers of transcription tests were asked to indicate the most frequently used type of

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[98]Robert Fisher, Intensive and Civil Service Training (Cincinnati: South-Western Publishing Company, 1959).

dictation test. More than one item could be checked. Table 38 presents the data regarding the most frequently used type.

An analysis of Table 38 shows that the timed dictation transcribed at the typewriter under timing was used most frequently as reported by 166 respondents, or 63.85 percent.

The next most frequently used type of dictation test given by public high school teachers in transcription classes is the timed dictation test, transcribed at the typewriter without a timing period. There were 99 respondents, or 38.08 percent who reported.

Office style dictation transcribed at the typewriter with no timing and office style dictation transcribed at the typewriter with timing was used by 70 respondents, or 26.92 percent; and 59 respondents, or 22.69 percent.

Only 4 respondents, or 1.54 percent, indicated timed dictation transcribed in longhand under timing; 4, or 1.54 percent, indicated timed dictation, transcribed in longhand with no timing; 3, or 1.15 percent, indicated timed dictation, transcribed with a fill-in answer sheet; and 1, or .38 percent, indicated timed dictation, transcribed with a fill-in answer sheet, no timing.

The most frequently used type of transcription test reported by teachers is timed dictation transcribed

TABLE 38.-- Types of dictation tests given most frequently by teachers of public high school transcription classes

Types of Tests	Total Responses	Total				Group I Resp.			Group II Resp.			Group III Resp.		
		Number of Responses	Percent of Responses	Number of No Resp.	Percent of No Resp.	Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total
1. Timed dictation, transcribed at typewriter under timing	260	166	63.85	94	36.15	30	57.69	11.54	25	69.44	9.62	28	59.57	10.77
2. Timed dictation, transcribed at typewriter, no timing	260	99	38.08	161	61.92	22	42.31	8.46	17	47.22	6.54	19	40.43	7.31
3. Timed dictation, transcribed in longhand under timing	260	4	1.54	256	98.46	1	1.92	.38	1	2.78	.38	0	0	0
4. Timed dictation, transcribed in longhand, no timing	260	4	1.54	256	98.46	2	3.85	.77	1	2.78	.38	0	0	0
5. Timed dictation, transcribed, fill-in answer sheet, timed	260	3	1.15	257	98.85	1	1.92	.38	1	2.78	.38	0	0	0
6. Timed dictation, transcribed, fill-in answer sheet, no timing	260	1	.38	259	99.62	0	0	0	1	2.78	.38	0	0	0
7. Office style dictation, transcribed at typewriter under timing	260	59	22.69	201	77.31	15	28.85	5.77	5	13.89	1.92	10	21.28	3.85
8. Office style dictation, transcribed at typewriter, no timing	260	70	26.92	190	73.08	15	28.85	5.77	11	30.56	4.23	14	29.79	5.38
9. Other[a]	260	7	2.69	253	97.31	1	1.92	.38	1	2.78	.38	1	2.13	.38

[a]3 reported untimed dictation transcribed at the typewriter; 4 reported timed dictation from tapes, transcribed at the typewriter.

Read the table thus: For Item 1 above there were 166 teachers who responded, representing 63.85% of the total of 260 questionnaires tabulated and 94 teachers representing 36.15% of the total respondents who did not reply to this item. Replies are distributed numerically and percentage-wise in Groups I-VI.

TABLE 38.--Continued.

Types of Tests	Total Responses	Total				Group IV Resp.			Group V Resp.			Group VI Resp.		
		Number of Responses	Percent of Responses	Number of No Resp.	Percent of No Resp.	Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total
1. Timed dictation, transcribed at typewriter under timing	260	166	63.85	94	36.15	17	58.62	6.54	42	68.85	16.15	24	68.57	9.23
2. Timed dictation, transcribed at typewriter, no timing	260	99	38.08	161	61.92	8	27.59	3.08	25	40.98	9.62	8	22.86	3.08
3. Timed dictation, transcribed in longhand under timing	260	4	1.54	256	98.46	0	0	0	1	1.64	.38	1	2.86	.38
4. Timed dictation, transcribed in longhand, no timing	260	4	1.54	256	98.46	0	0	0	1	1.64	.38	0	0	0
5. Timed dictation, transcribed, fill-in answer sheet, timed	260	3	1.15	257	98.85	0	0	0	1	1.64	.38	0	0	0
6. Timed dictation, transcribed, fill-in answer sheet, no timing	260	1	.38	259	99.62	0	0	0	0	0	0	0	0	0
7. Office style dictation, transcribed at typewriter under timing	260	59	22.69	201	77.31	6	20.69	2.31	11	18.03	4.23	12	34.29	4.62
8. Office style dictation, transcribed at typewriter, no timing	260	70	26.92	190	73.08	6	20.60	2.31	16	26.23	6.15	8	22.86	3.08
9. Other[a]	260	7	2.69	253	97.31	0	0	0	3	4.92	1.15	1	2.86	.38

[a] 3 reported untimed dictation transcribed at the typewriter; 4 reported timed dictation from tapes, transcribed at the typewriter.

Read the table thus: For Item 1 above there were 166 teachers who responded, representing 63.85% of the total of 260 questionnaires tabulated and 94 teachers representing 36.15% of the total respondents who did not reply to this item. Replies are distributed numerically and percentage-wise in Groups I-VI.

at the typewriter under timing conditions. The second most frequently used test is the timed dictation test, transcribed at the typewriter without a timing period.

Lamb indicates that transcription tests should consist of typewritten transcripts of letters of various lengths and difficulties.[99]

Leslie implies that timing of transcription is indispensable when he says:

> The only proper test consists of the dictation of a number of business letters, to be transcribed at an acceptable speed with an acceptable percentage of mailability.[100]

Hardaway comments on the most acceptable type of transcription tests.

> The only proper test of transcription skill is a performance type test that requires a student to record, plan, and transcribe some appropriate material that has been dictated.[101]

Timed and untimed office style dictation was reported as the third and fourth most frequently used types of tests, respectively.

Leslie points out the inadequacy of these tests when he says:

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[99] Lamb, op. cit., p. 171.

[100] Leslie, op. cit., p. 198.

[101] Hardaway, op. cit., p. 295.

> In this test, the teacher, while dictating, indicates omissions and insertions, makes false starts, and generally imitates the extemporaneous dictation of a poor dictator. Because of the difficulty of training for such tests and difficulty of standardizing them, there is some element of luck in the scores obtained. Therefore, they do not seem satisfactory or valid tests. . . . Perhaps with further experiment these defects can be remedied.[102]

However, Lamb[103] advocates the use of office style dictation during the last few weeks of the fourth semester because the student is now ready to handle this more demanding type of dictation.

Harms[104] reiterates this suggestion by stating that office style dictation should be attempted by the teacher only when the class is producing mailable copy regularly, and if the teacher feels confident enough to work with it. It is life-like training for the student.

The fill-in answer sheet type of test was reported to be used by only three teachers.

In view of what authorities recommend as the best type of test, the researcher suggests that the timed dictation test and timed transcription test be used for

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[102]Leslie, op. cit., p. 203.

[103]Lamb, op. cit., p. 171.

[104]Harm Harms and B. W. Stehr, Methods in Vocational Business Education (Cincinnati: South-Western Publishing Company, 1963), p. 381.

evaluation purposes and that office style dictation be used sparingly and only after the students and the teacher are sufficiently confident to use it.

Method Used to Determine Difficulty of Dictation Materials

Public high school teachers of transcription were asked to indicate the method used to determine the difficulty of the materials used for transcription tests. More than one item could be checked. Table 39 presents the data concerning the method used.

An analysis of Table 39 shows that the most frequently used method to determine the difficulty of the dictation material was the standard word. There were a total of 117 respondents, or 45 percent, who replied in this way. Percentages for the individual groups ranged from 41.38 percent to 48.57 percent.

The next most frequently used method was syllabic intensity which was reported by 63 respondents, or 24.23 percent. Percentages for the individual groups ranged from 15.38 percent to 36.11 percent.

Other methods reported were: no measurement, 31 respondents, or 11.92 percent; actual word count, 20 respondents, or 7.69 percent; and measurement by own judgment of the difficulty of material, 5 respondents.

TABLE 39.--Determination of difficulty of dictation materials used for transcription tests as reported by teachers of public high school transcription classes

Type of Measurement	Total					Group I			Group II			Group III		
	Total Responses	Number of Responses	Percent of Responses	Number of No Responses	Percent of No Responses	Responses			Responses			Responses		
						Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total
1. Standard word (28 syllables = 20 words)	260	117	45.00	143	55.00	24	46.15	9.23	15	41.67	5.77	22	46.81	8.46
2. Actual word count	260	20	7.69	240	92.31	3	5.77	1.15	4	11.11	1.54	4	8.51	1.54
3. Shorthand stroke count	260	0	0	260	100 00	0	0	0	0	0	0	0	0	0
4. Syllabic intensity	260	63	24.23	197	75.77	8	15.38	3.08	13	36.11	5.00	9	19.15	3.46
5. No measurement	260	31	11.92	229	88.08	8	15.38	3.08	4	11.11	1.54	5	10.64	1.92
6. Other measurement[a]	260	5	1.92	255	98.08	1	1.92	.38	0	0	0	0	0	0

[a] 3 reported own judgment of the difficulty of the material; 2 reported difficulty measurement according to student familiarity with subject matter dictated.

Read the table thus: For Item 1 above there were 117 teachers who responded, representing 45% of the total of 260 questionnaires tabulated and 143 teachers representing 55% of the total respondents who did not reply to this item. Replies are distributed numerically and percentage-wise in Groups I-VI.

TABLE 39.--Continued.

Type of Measurement	Total Responses	Total				Group IV			Group V			Group VI		
		Number of Responses	Percent of Responses	Number of No Responses	Percent of No Responses	Responses			Responses			Responses		
						Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total
1. Standard word (28 syllables = 20 words)	260	117	45.00	143	55.00	12	41.38	4.62	27	44.26	10.38	17	48.57	6.54
2. Actual word count	260	20	7.69	240	92.31	2	6.90	.77	5	8.20	1.92	2	5.71	.77
3. Shorthand stroke count	260	0	0	260	100.00	0	0	0	0	0	0	0	0	0
4. Syllabic intensity	260	63	24.23	197	75.77	8	27.59	3.08	18	29.51	6.92	7	20.00	2.69
5. No measurement	260	31	11.92	229	88.08	3	10.34	1.15	8	13.11	3.08	3	8.57	1.15
6. Other measurement[a]	260	5	1.92	255	98.08	1	3.45	.38	3	4.92	1.15	0	0	0

[a]3 reported own judgment of the difficulty of the material; 2 reported difficulty measurement according to student familiarity with subject matter dictated.

Read the table thus: For Item 1 above there were 117 teachers who responded, representing 45% of the total of 260 questionnaires tabulated and 143 teachers representing 55% of the total respondents who did not reply to this item. Replies are distributed numerically and percentage-wise in Groups I-VI.

Most teachers used the standard word or syllabic intensity when determining the difficulty of dictation materials. Richardson[105] discusses the effect of changing syllable intensity (difficulty measurement) when she reports that student's transcription speed decreases as the syllable intensity of the dictation material increases. As the syllable intensity of tests dictated at 80 words a minute increases, the accuracy with which the students transcribe decreases. However, the increase in syllabic intensity has a greater effect upon accuracy of transcription than on the speed of transcription.

Lamb points out some flaws in the use of syllable intensity when she writes that it is:

> . . . just one measure of difficulty; unusual words of two syllables, for example, are harder to write than high-frequency words of two syllables. Material involved in style and sentence structure is harder to record than material that is easy to read.[106]

Hillestad,[107] Uthe[108] and others feel that there is a close relationship between the number of recording errors made and the difficulty of the material than between syllabic

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[105]Laura Richardson, "A Study of the Effects of Syllabic Intensity on the Ability of Students to Take Dictation and to Transcribe When Speed of Dictation and Transcription is Calculated by Stroke," Unpublished Master's Thesis, Temple University, Philadelphia, Pennsylvania, 1941.

[106]Lamb, op. cit., p. 81.

[107]Hillestad, op. cit.

[108]Uthe, op. cit.

intensity and difficulty of material. This is evidenced by the fact that teachers often realize that when technical material is beyond the understanding of the average person it is more difficult than easily-understood material, even though the syllable intensity is the same. Dictation material that contains a vocabulary beyond the understanding of the student probably will not be transcribed accurately. Therefore, in certain cases the teacher's judgment of the difficulty of the material can be adequate if accompanied by the realization that the syllabic intensity does not fully measure the difficulty of the material.

It was surprising to note that some of the teachers reported using actual word counts even though most authorities feel that this is a poor difficulty measurement technique. Hillestad, however, inquires as to whether we should be counting our shorthand materials in terms of actual words rather than in standard words in order to have our students better prepared for employment tests. She notes that:

> A recent study of employment tests for stenographers purported to be dictated at 80 words a minute actually were at rates varying from 90 to 115 words per minute or more because the employment tests were marked off for dictation in actual words instead of the standard words based on syllables that shorthand teachers use.[109]

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[109]Mildred Hillestad, "Research, Experimentation and Innovation Needed for Change," Business Education Meets the Challenges of Change, National Business Education Yearbook, No. 4, (1966), p. 216.

It is recommended that teachers continue using syllable intensity and the standard word as the best measurement of the difficulty of the dictation materials until such time that other methods have been further developed.

Syllabic Intensity Figure Used Most Frequently to Measure Difficulty of Dictation Materials

Public high school teachers of transcription were asked to indicate the syllabic intensity figure most frequently used to measure difficulty of the shorthand dictation material. Teachers were asked to check only one item. Table 40 presents the data.

An analysis of Table 40 shows that the most frequently used figure for syllable intensity was 1.4, defined as average. There were 78 respondents, or 30 percent of the total, who reported in this manner. Percentages for the individual groups ranged from 29.69 percent to 41.67 percent.

A syllabic intensity of 1.5 to 1.6, which was defined as difficult, was reported by 16 respondents, or 6.15 percent. There were 16, or 6.15 percent, who reported that they did not know what figure they used for syllabic intensity; and 149, or 57.32 percent, did not respond to this question.

TABLE 40.--Syllabic intensity figure most frequently used to measure difficulty of shorthand dictation materials used by teachers of public high school transcription classes

Difficulty Classification	Total		Group I			Group II			Group III		
			Responses			Responses			Responses		
	Number of Responses	Percent of Responses	Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total
1. Easy (less than 1.4 syllabic intensity	1	.38	0	0	0	0	0	0	0	0	0
2. Average (1.4 syllabic intensity)	78	30.00	16	30.77	6.15	15	41.67	5.77	13	27.66	5.00
3. Difficult (1.5 to 1.6 syllabic intensity)	16	6.15	2	3.85	.77	3	8.33	1.15	2	4.26	.77
4. Extremely difficult (greater than 1.6 syllabic intensity)	0	0	0	0	0	0	0	0	0	0	0
5. Don't know	16	6.15	3	5.77	1.15	2	5.56	.77	1	2.13	.38
Total No Response	149	57.32	31	59.61	11.92	16	44.44	6.15	31	65.95	11.92
Total	260	100.00	52		20.00	36		13.85	47		18.08

Read the table thus: For Item 1 above there was 1 teacher who responded, representing .38% of the total of 260 questionnaires tabulated. These replies were distributed numerically and percentage-wise in Groups I-VI.

TABLE 40.--Continued.

Difficulty Classification	Total		Group IV			Group V			Group VI		
	Number of Responses	Percent of Responses	Responses			Responses			Responses		
			Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total
1. Easy (less than 1.4 syllabic intensity	1	.38	0	0	0	1	1.64	.38	0	0	0
2. Average (1.4 syllabic intensity)	78	30.00	6	20.69	2.31	18	29.51	6.92	10	28.57	3.85
3. Difficult (1.5 to 1.6 syllabic intensity)	16	6.15	3	10.34	1.15	4	6.56	1.54	2	5.71	.77
4. Extremely difficult (greater than 1.6 syllabic intensity)	0	0	0	0	0	0	0	0	0	0	0
5. Don't know	16	6.15	2	6.90	.77	7	11.48	2.69	1	2.86	.38
Total No Response	149	57.32	18	62.06	6.92	31	50.81	11.92	22	62.85	8.46
Total	260	100.00	29		11.15	61		23.46	35		13.46

Read the table thus: For Item 1 above there was 1 teacher who responded, representing .38% of the total of 260 questionnaires tabulated. These replies were distributed numerically and percentage-wise in Groups I-VI.

It is surprising to note that over 57 percent of the teachers did not reply to this question, and another 6 percent did not know the syllable intensity of the dictation materials used. Of the teachers who responded, there was an overwhelming majority that used materials of an average (1.4) syllable intensity. There is no way of knowing why there was an absence of response, but it may mean that teachers are not considering the use of syllable intensity as a factor in the selection of materials. It may also mean that the teachers were uninformed concerning measurement of difficulty of dictation materials. Inasmuch as authorities have pointed out the advantages of measuring difficulty of materials as a progressive teaching device, it is recommended that teachers consider using syllable intensity or other measurements to measure the difficulty of materials.

Topics Stressed or Taught in Transcription Classes

Public high school teachers of transcription were asked to indicate the items stressed or taught in their classes. Teachers were asked to check more than one item. Table 41 presents data concerning items stressed.

An analysis of Table 41 shows that 206 respondents, or 79.23 percent of the total, stressed transcription accuracy. Percentages for the individual groups ranged from 74.29 percent to 86.11 percent.

TABLE 41.--Items stressed or taught in public high school transcription classes as reported by teachers of transcription

Items Stressed	Total					Group I			Group II			Group III		
	Total Responses	Number of Responses	Percent of Responses	Number of No Responses	Percent of No Responses	Responses			Responses			Responses		
						Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total
1. Transcription accuracy	260	206	79.23	54	20.77	40	76.92	15.38	31	86.11	11.92	37	78.72	14.23
2. Transcription speed	260	154	59.23	106	40.77	26	50.00	10.00	23	63.89	8.85	31	65.96	11.92
3. Typing accuracy	260	168	64.62	92	35.38	31	59.62	11.92	26	72.22	10.00	30	63.83	11.54
4. Typing speed	260	107	41.15	153	58.85	19	36.54	7.31	16	44.44	6.15	23	48.94	8.85
5. Letter placement	260	149	57.31	111	42.69	27	51.92	10.38	21	58.33	8.08	28	59.57	10.77
6. Shorthand theory	260	69	26.54	191	73.46	13	25.00	5.00	13	36.11	5.00	15	31.91	5.77
7. Shorthand speed	260	122	46.92	138	53.08	22	42.31	8.46	20	55.56	7.69	22	46.81	8.46
8. Taking dictation	260	121	46.54	139	53.46	25	48.08	9.62	20	55.56	7.69	22	46.81	8.46
9. English usage (spelling, punct., cap. syll.)	260	197	75.77	63	24.23	37	71.15	14.23	29	80.56	11.15	37	78.72	14.23
10. Clerical skills	260	69	26.54	191	73.46	16	30.77	6.15	11	30.56	4.23	16	34.04	6.15
11. Typewriter manipulations	260	72	27.69	188	62.31	14	26.92	5.38	10	27.78	3.85	14	29.79	5.38
12. Erasing and correcting	260	142	54.62	118	45.38	29	55.77	11.15	24	66.67	9.23	24	51.06	9.23
13. Proofreading	260	187	71.92	73	28.08	35	67.31	13.46	29	80.56	11.15	33	70.21	12.69
14. Preparation for Civil Service tests	260	68	26.15	192	73.85	11	21.15	4.23	13	36.11	5.00	14	29.79	5.38
15. Preparation for other employment tests	260	55	21.15	205	78.85	11	21.15	4.23	11	30.56	4.23	10	21.28	3.85
16. Other[a]	260	10	3.85	250	96.15	0	0	0	2	5.56	.77	4	8.51	1.54

[a]3 reported stressing job interview assignments; 3 reported stressing specific needs of individual class; 3 reported machine transcription; 1 reported basic data processing.

Read the table thus: For Item 1 above there were 206 teachers who responded, representing 79.23% of the total of 260 questionnaires tabulated and 54 teachers representing 20.77% of the total respondents who did not reply to this item. Replies are distributed numerically and percentage-wise in Groups I-VI.

TABLE 41.--Continued.

Items Stressed	Total					Group IV			Group V			Group VI		
	Total Responses	Number of Responses	Percent of Responses	Number of No Responses	Percent of No Responses	Responses			Responses			Responses		
						Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total
1. Transcription accuracy	260	206	79.23	54	20.77	24	82.76	9.23	48	78.69	18.46	26	74.29	10.00
2. Transcription speed	260	154	59.23	106	40.77	18	62.07	6.92	36	59.02	13.85	20	57.14	7.69
3. Typing accuracy	260	168	64.62	92	35.38	21	72.41	8.08	40	65.57	15.38	20	57.14	7.69
4. Typing speed	260	107	41.15	153	58.85	16	55.17	6.15	19	31.15	7.31	14	40.00	5.38
5. Letter placement	260	149	57.31	111	42.69	20	68.97	7.69	36	59.02	13.85	17	48.57	6.54
6. Shorthand theory	260	69	26.54	191	73.46	7	24.14	2.69	12	19.67	4.62	9	25.71	3.46
7. Shorthand speed	260	122	46.92	138	53.08	14	48.28	5.38	30	49.18	11.54	14	40.00	5.38
8. Taking dictation	260	121	46.54	139	53.46	14	48.28	5.38	26	42.62	10.00	14	40.00	5.38
9. English usage (spelling, punct., cap. syll.)	260	197	75.77	63	24.23	22	75.86	8.46	48	78.69	18.46	24	68.57	9.23
10. Clerical skills	260	69	26.54	191	73.46	7	24.14	2.69	11	18.03	4.23	8	22.86	3.08
11. Typewriter manipulations	260	72	27.69	188	72.31	10	34.48	3.85	18	29.51	6.92	6	17.14	2.31
12. Erasing and correcting	260	142	54.62	118	45.38	17	58.62	6.54	33	54.10	12.69	15	42.86	5.77
13. Proofreading	260	187	71.92	73	28.08	23	79.31	8.85	43	70.49	16.54	24	68.57	9.23
14. Preparation for Civil Service tests	260	68	26.15	192	73.85	8	27.59	3.08	17	27.87	6.54	5	14.29	1.92
15. Preparation for other employment tests	260	55	21.15	205	78.85	6	20.69	2.31	11	18.03	4.23	6	17.14	2.31
16. Other[a]	260	10	3.85	250	96.15	3	10.34	1.15	1	1.64	.38	0	0	0

[a]3 reported stressing job interview assignments; 3 reported stressing specific needs of individual class; 3 reported machine transcription; 1 reported basic data processing.

Read the table thus: For Item 1 above there were 206 teachers who responded, representing 79.23% of the total of 260 questionnaires tabulated and 54 teachers representing 20.77% of the total respondents who did not reply to this item. Replies are distributed numerically and percentage-wise in Groups I-VI.

The second most important topic stressed or taught in transcription classes as reported by teachers was English usage, which included spelling, punctuation, capitalization and syllabication. There were 197 respondents, or 75.57 percent. Percentages for the individual groups ranged from 68.57 percent to 80.56 percent.

Proofreading was reported as the next most important topic stressed by 187 respondents, or 71.92 percent. Percentages for the individual groups ranged from 67.31 percent to 80.56 percent.

Typing accuracy was reported as the fourth most important topic stressed in transcription classes by 168 respondents, or 64.62 percent. Percentages for the individual groups ranged from 57.41 percent to 72.41 percent.

Other items of importance in transcription were transcription speed as reported by 154, or 59.23 percent; letter placement, 149, or 57.31 percent; and erasing and correcting, 142, or 54.62 percent.

Of importance also was typing speed as reported by 107 respondents, or 41.15 percent; typewriter manipulations by 72, or 27.69 percent; clerical skills by 69, or 26.54 percent; shorthand theory by 69, or 26.54 percent; preparation for other employment tests, 55, or 21.15 percent.

Other items mentioned by 10 respondents or 3.85 percent included job interview assignments, special needs of individuals, machine transcription, and basic data processing.

A large majority of the transcription teachers stressed transcription accuracy above all other factors. This is in line with Lamb's[110] ideas when she says that the shift at this state of training is from the speed of recording in advanced shorthand to the absolute accuracy of the transcript with reasonable speed in recording and transcribing.

English usage is the next important consideration in transcription training which contributes to the accuracy of the transcript. Nolan, Hayden, and Malsbary agree that:

> Drills must be provided during the transcription period, when necessary, to improve basic techniques in typewriting, knowledge of English, and so on. It is not enough that the student has had a course in typewriting and English; he must be taught to use the skills and knowledges acquired in these courses in transcription.[111]

Proofreading, typing accuracy, and transcription speed were other important comsiderations mentioned by teachers.

Hardaway states with regard to proofreading that:

> Proofreading of the student's own transcripts represents the epitome of proofreading ability because it is more difficult to find one's own errors than to find those of another, and the teacher may well give some attention to this factor.[112]

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[110]Lamb, op. cit., p. 210.

[111]Nolan, op. cit., p. 381.

[112]Hardaway, op. cit., p. 298.

Transcription speed is an important factor toward the end of the course in order that work can be completed within a reasonable length of time.

Jester's[113] detailed time study of transcription activities notes that only 38.1 percent of the time allotted for transcription is devoted to actual typing. Therefore, he contends that non-typing activities such as correcting errors, deciphering poor penmanship, and using dictionaries, be given greater emphasis in transcription classes. He has found that inefficiencies in non-typing activities have materially impeded the total transcription process. (See Chapter II, Review of the Literature, page 46.)

Teachers are stressing some of the non-typing activities as well as shorthand accuracy. It is recommended that all of their practices be continued with even greater emphasis.

Sources Used for Selecting Dictation Materials

Public high school teachers of transcription were asked to indicate the sources used for selecting dictation materials in their transcription classes. More than one item could be checked. Table 42 presents the data on dictation material selection.

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[113] Jester, op. cit.

TABLE 42.--Sources used for selecting dictation materials for transcription tests as reported by public high school teachers of transcription classes

Source of Materials	Total					Group I			Group II			Group III		
	Total Responses	Number of Responses	Percent of Responses	Number of No Responses	Percent of No Responses	Responses			Responses			Responses		
						Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total
1. Business education books	260	191	73.46	69	26.54	40	76.92	15.38	28	77.78	10.77	30	63.83	11.54
2. Business education magazines	260	166	63.85	94	36.15	33	63.46	12.69	22	61.11	8.46	33	70.21	12.69
3. Composed from word lists	260	5	1.92	255	98.08	0	0	0	2	5.56	.77	0	0	0
4. Composed by self	260	17	6.54	243	93.46	3	5.77	1.15	2	5.56	.77	4	8.51	1.54
5. Teacher's manuals	260	67	25.77	193	74.23	11	21.15	4.23	11	30.56	4.23	18	38.30	6.92
6. Other, explain[a]	260	15	5.77	245	94.23	2	3.85	.77	6	16.67	2.31	4	8.51	1.54

[a]4 reported commercially or self prepared tapes; 11 reported letters taken from teacher's files of mail received.

Read the table thus: For Item 1 above there were 191 teachers who responded, representing 73.46% of the total of 260 questionnaires tabulated and 69 teachers representing 26.54% of the total respondents who did not reply to this item. Replies are distributed numerically and percentage-wise in Groups I-VI.

TABLE 42.--Continued.

Source of Materials	Total Responses	Total				Group IV			Group V			Group VI		
		Number of Responses	Percent of Responses	Number of No Responses	Percent of No Responses	Responses			Responses			Responses		
						Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total
1. Business education books	260	191	73.46	69	26.54	22	75.86	8.46	47	77.05	18.08	24	68.57	9.23
2. Business education magazines	260	166	63.85	94	36.15	20	68.97	7.69	38	62.30	14.62	20	57.14	7.69
3. Composed from word lists	260	5	1.92	255	98.08	0	0	0	1	1.64	.38	2	5.71	.77
4. Composed by self	260	17	6.54	243	93.46	3	10.34	1.15	2	3.28	.77	3	8.57	1.15
5. Teacher's manuals	260	67	25.77	193	74.23	5	17.24	1.92	15	24.59	5.77	7	20.00	2.69
6. Other, explain[a]	260	15	5.77	245	94.23	1	3.45	.38	1	1.64	.38	1	2.86	.38

[a]4 reported commercially or self prepared tapes; 11 reported letters taken from teacher's files of mail received.

Read the table thus: For Item 1 above there were 191 teachers who responded, representing 73.46% of the total of 260 questionnaires tabulated and 69 teachers representing 26.54% of the total respondents who did not reply to this item. Replies are distributed numerically and percentage-wise in Groups I-VI.

An analysis of Table 42 shows that the most frequently used source for selecting dictation materials was business education books. There were a total of 191 respondents, or 73.46 percent, who replied in this manner. Percentages for the individual groups ranged from 63.83 percent to 77.78 percent.

The second most frequently used source was business education magazines. There were 166 respondents, or 63.85 percent, who replied. Percentages for the individual groups ranged from 57.14 percent to 70.21 percent.

Teacher's manuals were reported as being used by 67 respondents, or 25.77 percent of the total. There were 17 respondents, or 6.54 percent, who composed their own materials; and 5, or 1.92 percent, who composed their materials from word lists.

Other sources reported by 15 respondents, or 5.77 percent, were letters taken from their files which they had received in the mail.

Lamb recommends that the words and phrases to be used for dictation purposes in transcription classes consist of:

> . . . properly selected new-matter dictation--familiar words and phrases in new settings with only an occasional new word--dictated at the average writing rate of the class. The aim . . . is to ensure legibility of notes and accurate transcription in longhand or on the typewriter.[114]

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[114]Lamb, op. cit., p. 196.

Since most published dictation material is edited with this objective in mind, all of the sources mentioned by teachers were considered appropriate. Advanced shorthand teachers selected the same materials also. It was noted that only a very small percentage of teachers composed their own materials.

It is recommended that in view of the fact that many adequate sources of material exist, teachers continue using the prepared materials for the major portion of their dictation.

Types of Materials Used for Transcription Purposes

Public high school teachers of transcription were asked to indicate the types of materials used for transcription purposes. More than one item could be checked. Table 43 presents data concerning types of materials.

An analysis of Table 43 shows that 204 respondents, or 78.46 percent, used student's own shorthand notes taken from dictation most frequently for transcription purposes. Percentages for the individual groups ranged from 69.23 percent to 82.76 percent.

There were 57 respondents, or 21.92 percent, who used shorthand plates found in textbooks. Other methods used by teachers as reported by 21 respondents, or 8.08 percent, included the use of prepared tapes of student's shorthand homework, student's exchange of notes, etc.

TABLE 43.--Materials used by students for transcription purposes as reported by public high school teachers of transcription classes

Materials Used	Total Responses	Total				Group I			Group II			Group III		
		Number of Responses	Percent of Responses	Number of No Responses	Percent of No Responses	Responses			Responses			Responses		
						Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total
1. Students own shorthand notes taken from dictation	260	204	78.46	56	21.54	36	69.23	13.85	30	83.33	11.54	37	78.72	14.23
2. Shorthand plates found in textbooks	260	57	21.92	203	78.08	15	28.85	5.77	8	22.22	3.08	12	25.53	4.62
3. Other[a]	260	21	8.08	239	91.92	4	7.69	1.54	2	5.56	.77	4	8.51	1.54
No Response				56	21.53	16	30.76	6.15	6	16.66	2.30	10	21.27	3.84
Total				260	100	52		20.00	36		13.85	47		11.15

[a]5 reported used prepared tapes; 5 reported used students shorthand homework; 3 reported students exchanged notes and transcribed one another's material; 2 reported miscellaneous dictation materials; 5 reported shorthand plates in Today's Secretary magazine; 1 reported office style dictation.

Read the table thus: For Item 1 above there were 204 teachers who responded, representing 78.46% of the total of 260 questionnaires tabulated and 56 teachers representing 21.54% of the total respondents who did not reply to this item. Replies are distributed numerically and percentage-wise in Groups I-VI.

TABLE 43.--Continued.

Materials Used	Total Responses	Total				Group IV			Group V			Group VI		
		Number of Responses	Percent of Responses	Number of No Responses	Percent of No Responses	Responses			Responses			Responses		
						Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total
1. Students own shcrthand notes taken from dictation	260	204	78.46	56	21.54	24	82.76	9.23	50	81.97	19.23	27	77.14	10.38
2. Shorthand plates found in textbooks	260	57	21.92	203	78.08	2	6.90	.77	11	18.03	4.23	9	25.71	3.46
3. Other[a]	260	21	8.08	239	91.92	1	3.45	.38	6	9.84	2.31	4	11.43	1.54
No Response						5	17.24	1.92	11	18.03	4.23	8	22.85	3.07
Total						29		11.15	61		23.46	35		13.46

[a]5 reported used prepared tapes; 5 reported used students shorthand homework; 3 reported students exchanged notes and transcribed oneq another's material; 2 reported miscellaneous dictation materials; 5 reported shorthand plates in Today's Secretary magazine; 1 reported office style dictation.

Read the table thus: For Item 1 above there were 204 teachers who responded, representing 78.46% of the total of 260 questionnaires tabulated and 56 teachers representing 21.54% of the total respondents who did not reply to this item. Replies are distributed numerically and percentage-wise in Groups I-VI.

The most frequently used materials reported to be used by students for transcription purposes were their own notes taken from dictation. It is notable that over 20 percent of the teachers reported the use of shorthand plates for transcription. This second activity should be used only in the early learning stages of transcription training. Lamb discusses the various steps of progress in transcription and says:

> By transcribing shorthand plates in the early lessons . . . students are free to place maximum attention on correct transcribing techniques and to give thought to the requirements of mailable copy.[115]

It is recommended that teachers continue the use of student's own notes for transcription a major portion of time, and that training should follow a logical sequence of skill building procedures according to the class needs.

Components Included in the Final Grade for Transcription

Public high school teachers of transcription were asked to indicate the components included in the final grade given to a student in transcription. More than one item could be checked. Table 44 presents data concerning components.

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[115] Lamb, op. cit., p. 96.

TABLE 44.--Components included in final grade in transcription classes as reported by public high school teachers of transcription

Components	Total Responses	Total				Group I			Group II			Group III		
		Number of Responses	Percent of Responses	Number of No Responses	Percent of No Responses	Responses			Responses			Responses		
						Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total
1. Shorthand speed	260	173	66.54	87	33.46	31	59.62	11.92	24	66.67	9.23	34	72.34	13.08
2. Transcription speed	260	145	55.77	115	44.23	31	59.62	11.92	21	58.33	8.08	26	55.32	10.00
3. Mailability	260	201	77.31	59	22.69	39	75.00	15.00	30	83.33	11.54	38	80.85	14.62
4. Total production	260	138	53.08	122	46 92	28	53.85	10.77	22	61.11	8.46	20	42.55	7.69
5. Related knowledges	260	118	45.38	142	54.62	21	40.38	8.08	20	55.56	7.69	21	44.68	8.08
6. Other[a]	260	12	4.62	248	95.38	2	3.85	.77	3	8.33	1.15	3	6.38	1.15

[a]4 reported including English usage and spelling; 4 reported including typing speed--straight-copy material; 3 reported including work habits, attitudes, and preparedness; 1, shorthand theory.

Read the table thus: For Item 1 above there were 173 teachers who responded, representing 66.54% of the total of 260 questionnaires tabulated and 87 teachers representing 33.46% of the total respondents who did not reply to this item. Replies were distributed numerically and percentage-wise in Groups I-VI.

TABLE 44.--Continued.

Components	Total Responses	Total				Group IV			Group V			Group VI		
		Number of Responses	Percent of Responses	Number of No Responses	Percent of No Responses	Responses			Responses			Responses		
						Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total
1. Shorthand speed	260	173	66.54	87	33.46	20	68.97	7.69	41	67.21	15.77	23	65.71	8.85
2. Transcription speed	260	145	55.77	115	44.23	17	58.62	6.54	30	49.18	11.54	20	57.14	7.69
3. Mailability	260	201	77.31	59	22.69	22	75.86	8.46	45	73.77	17.31	27	77.14	10.38
4. Total production	260	138	53.08	122	46.92	15	51.72	5.77	36	59.02	13.85	17	48.57	6.54
5. Related knowledges	260	118	45.38	142	54.62	16	55.17	6.15	23	37.70	8.85	17	48.57	6.54
6. Other[a]	260	12	4.62	248	95.38	3	10.34	1.15	0	0	0	1	2.86	.38

[a]4 reported including English usage and spelling; 4 reported including typing speed--straight-copy material; 3 reported including work habits, attitudes, and preparedness; 1, shorthand theory.

Read the table thus: For Item 1 above there were 173 teachers who responded, representing 66.54% of the total of 260 questionnaires tabulated and 87 teachers representing 33.46% of the total respondents who did not reply to this item. Replies were distributed numerically and percentage-wise in Groups I-VI.

An analysis of Table 44 shows that 201 respondents, or 77.31 percent, listed mailability as the most important component. Percentages for the individual groups ranged from 73.77 percent to 83.33 percent.

The second most important component reported was shorthand speed. There were 173 respondents, or 66.54 percent, who indicated this item. Percentages for the individual groups ranged from 59.62 percent to 72.34 percent.

The third most important component was transcription speed as reported by 145 respondents, or 55.77 percent. Percentages for the individual groups ranged from 49.18 percent to 59.62 percent.

The fourth most important component reported was production as reported by 138 respondents, or 53.98 percent. Another component indicated by 118 respondents, or 45.38 percent, was related knowledges.

Other components listed by 12 respondents, or 4.62 percent, were typing speed of straight copy materials, work habits, and attitudes and preparedness.

Teachers recognize that mailability is the most important component in the grade given for transcription.

Hardaway agrees that "mailability is the key word in grading transcripts."[116]

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[116]Hardaway, op. cit., p. 295.

Shorthand speed, transcription speed, and production were listed by teachers also as components in grading.

Lamb points out that final grades should be based upon mailable transcripts with little consideration given to shorthand speed, and that a transcript should be prepared within a reasonable amount of time. With regard to speed tests, she says:

> Grades for speed tests should be given little weight in the final grades for terminal training . . . always keep in mind what graduates will meet on the job--production standards--mailable transcripts consistently produced within a reasonable time at the first writing.[117]

Lamb[118] discusses the production standards by saying that it is one of the more difficult ones to meet, although the recording of letters is usually easier than the recording of the three-minute and five-minute tests. The dictation rate must be well within the ability of most of the members of the class when a production standard applies to the transcripts. Production standards are aimed at controlled recording and makes accurate transcription possible.

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[117]Lamb, op. cit., p. 210.

[118]Lamb, op. cit., p. 204.

Hardaway defines production standards in her discussion stating that one form of measurement used under this standard is:

> . . . the dictation of several pieces of correspondence at specified speeds, having the students transcribe the notes in designated forms for mailing and assessing the quantity and quality of production in terms of mailable words a minute.[119]

Lamb comments on stressing attitudes and work habits:

> Students should have a cooperative attitude that is work-centered yet shows consideration for the personal interests and feelings of colleagues. . . . They should have a responsible attitude towards work--expressed in starting the day's work promptly, in working steadily throughout the period, in measuring achievement, and in daily efforts to improve. . . . Good work habits and good work attitudes should be inculcated and evaluated, with evaluation properly noted in the students' cumulative records.[120]

Teachers apparently have given the proper stress to the various components of the transcription process; therefore, it is recommended that they continue to do so.

Mailability Defined by Teachers of Transcription

Public high school teachers of transcription were asked to define the term "mailability." More than one

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[119] Hardaway, op. cit., p. 298.

[120] Lamb, op. cit., p. 208.

item could be checked. Table 45 presents the data concerning definitions.

An Analysis of Table 45 shows that 162 respondents, or 62.31 percent of the total, defined mailability as a "transcript that you would be willing to mail."

There were 123 respondents, or 47.31 percent, who stated their definition was a "transcript with no poor erasures, typographical errors or poor placement."

There were 115 respondents, or 44.23 percent, who gave as their definition "a transcript with no changes in factual information, that is amounts, dates, etc."

There were also 92 respondents, or 35.38 percent, who stated that their choice of definition was "a transcript which closely follows the thought of dictation, errors corrected."

It is evident that most of the teachers agreed that mailability referred to a transcript that one would be willing to mail. Allen defined a mailable letter:

> To meet the mailability standard the letter should be attractively arranged on the page and should follow closely the dictation as received from the dictator; there should be no errors in spelling, punctuation, capitalization, or hyphenation; the letter should contain no uncorrected typing errors; and erasures should be made neatly--copy that can be sent through the mail as the stenographer turns it in to the person who dictated the material.[121]

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[121]Roscoe J. Allen, "Advanced Shorthand and Transcription: A Second-Year Program," Secretarial Education With a Future, American Business Education Yearbook, 1962, Vol. 19, p. 204.

TABLE 45.--Definitions of mailability as reported by public high school transcription teachers

Definition Given	Total Responses	Total				Group I			Group II			Group III		
		Number of Responses	Percent of Responses	Number of No Responses	Percent of No Responses	Responses			Responses			Responses		
						Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total
1. Verbatim transcript	260	46	17.69	214	82.31	7	13.46	2.69	10	27.78	3.85	8	17.02	3.08
2. Transcript with no changes in factual information (dates, amounts of money, etc.)	260	115	44.23	145	55.77	22	42.31	8.46	18	50.00	6.92	19	40.43	7.31
3. Transcript with no poor erasures, typographical errors or poor placement	260	123	47.31	137	52.69	25	48.08	9.62	18	50.00	6.92	18	18.30	6.92
4. Transcript which closely follows the thought of dictation, errors corrected	260	92	35.38	168	64.62	20	38.46	7.69	8	22.22	3.08	18	38.30	6.92
5. Transcript that you would be willing to mail	260	162	62.31	98	37.69	29	55.77	11.15	23	63.89	8.85	32	68.09	12.31
6. Other[a]	260	5	1.92	255	98.08	0	0	0	1	2.78	.38	2	4.26	.77

[a]5 reported only minor changes in wording with no poor erasures.

Read the table thus: For Item 1 above there were 46 teachers who responded, representing 17.69% of the total of 260 questionnaires tabulated and 214 teachers representing 82.31% of the total respondents who did not reply to this item. Replies are distributed numerically and percentage-wise in Groups I-VI.

TABLE 45.--Continued.

Definition Given	Total Responses	Total: Number of Responses	Total: Percent of Responses	Total: Number of No Responses	Total: Percent of No Responses	Group IV: Responses: Number	Group IV: Responses: Percent of Group	Group IV: Responses: Percent of Total	Group V: Responses: Number	Group V: Responses: Percent of Group	Group V: Responses: Percent of Total	Group VI: Responses: Number	Group VI: Responses: Percent of Group	Group VI: Responses: Percent of Total
1. Verbatim transcript	260	46	17.69	214	82.31	5	17.24	1.92	9	14.75	3.56	7	20.00	2.69
2. Transcript with no changes in factual information (dates, amounts of money, etc.)	260	115	44.23	145	55.77	14	48.28	5.38	25	40.98	9.62	17	48.57	6.54
3. Transcript with no poor erasures, typographical errors or poor placement	260	123	47.31	137	52.69	16	55.17	6.15	28	45.90	10.77	18	51.43	6.92
4. Transcript which closely follows the thought of dictation, errors corrected	260	92	35.38	168	64.62	11	37.93	4.23	23	37.70	8.85	12	34.29	4.62
5. Transcript that you would be willing to mail	260	162	62.31	98	37.69	18	62.07	6.92	37	60.66	14.23	23	65.71	8.85
6. Other[a]	260	5	1.92	255	98.08	0	0	0	2	3.28	.77	0	0	0

[a]5 reported only minor changes in wording with no poor erasures.

Read the table thus: For Item 1 above there were 46 teachers who responded, representing 17.69% of the total of 260 questionnaires tabulated and 214 teachers representing 82.31% of the total respondents who did not reply to this item. Replies are distributed numerically and percentage-wise in Groups I-VI.

Authorities have pointed out from time to time that the "mailable letter" standard is controversial because the term is subject to personal interpretation. Kalb states:

> There seem to be about as many ways for scoring transcripts as there are teachers of transcription; however, many seem to agree that the transcript must be either mailable or perfect to merit any type of score. . . . The consultant pointed out that a letter that might not be mailable at ten o'clock in the morning would pass an employer as mailable at four o'clock in the afternoon; others defined the "mailable letter" as one that does not have to be corrected or changed in any way before it is mailed.[122]

Hardaway concurs that mailability is a flexible concept.

> No scale is used in the business office to determine mailability. It is a subjective decision. In some cases letters that are mailable in one business office may not be considered mailable in another business office. Within the same business office letters that are mailable to certain addresses may not be mailable to other addresses. There are, then, degrees of mailability.[123]

In spite of the fact that there are variations of interpretation of what constitutes mailability, it is recommended that the concept of mailability be continued at a high level.

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[122]Merrill B. Kalb, Wallace B. Bowman, and L. Blanche Stevens, "Area Conference Report on Shorthand Transcription," American Business Education, Vol. 13, October, 1956, pp. 11-12.

[123]Hardaway, op. cit., p. 295.

Shorthand Writing Speeds Required If Portion of Final Grade Is Based On Mailability

Public high school teachers of transcription were asked to indicate the shorthand writing speeds required of students in producing mailable copy at the various grade levels when a portion of the final grade is based on mailability. Only one item could be checked. Table 46 presents data concerning writing speeds.

An analysis of Table 46 shows that 71 respondents, or 27.31 percent, indicated that 120 words per minute was the shorthand speed writing requirement for mailable copy at the Grade A level. Other speed requirements reported by 46, or 17.69 percent, ranged from 60 words per minute to 100 words per minute. Of this figure 28 indicated 100 words per minute as their minimum writing speed.

At the Grade B level there were 51 respondents, or 19.62 percent, who indicated that 100 words per minute was the speed requirement. There were 34, or 13.08 percent, who indicated that 110 words per minute was their requirement. There were 35, or 13.46 percent, who reported speeds of 80 and 90 words per minute and varying speeds.

At the Grade C level there were 42 respondents, or 16.15 percent, who indicated that 80 words per minute was the requirement and 35, or 13.46 percent, who stated that 100 words per minute was the speed requirement. There were 25, or 9.62 percent, who indicated 90 words per minute as their requirement.

TABLE 46.--Shorthand writing speeds required of students for mailable copy for the various grade levels when a portion of the final grade is based on mailability as reported by the public high school teachers of transcription

Shorthand Writing Speeds and Grade Levels	Total Responses	Total				Group I Resp.			Group II Resp.			Group III Resp.		
		Number of Responses	Percent of Responses	Number of No Resp.	Percent of No Resp.	Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total
1. Grade A	260			116	44.62									
140 wpm.		4	1.54			0	0	0	1	2.78	.38	2	4.26	.77
130 wpm.		5	1.92			1	1.92	.38	1	2.78	.38	1	2.13	.38
120 wpm.		71	27.31			10	19.23	3.85	6	16.67	2.31	14	29.79	5.38
Other[a]		46	17.69			7	13.46	2.69	9	25.00	3.46	7	14.89	2.69
No speed		18	6.92			10	19.23	3.85	0	0	0	2	4.26	.77
2. Grade B				118	45.38									
120 wpm.		4	1.54			0	0	0	0	0	0	2	4.26	.77
110 wpm.		34	13.08			8	15.38	3.08	3	8.33	1.15	6	12.77	2.31
100 wpm.		51	19.62			6	11.54	2.31	5	13.89	1.92	9	19.15	3.46
Other[b]		35	13.46			4	7.69	1.54	9	25.00	3.46	7	14.89	2.69
No speed		18	6.92			10	19.23	3.85	0	0	0	2	4.26	.77
3. Grade C	260			121	46.54									
100 wpm.		35	13.46			8	15.38	3.08	1	2.78	.38	8	17.02	3.08
90 wpm.		25	9.62			3	5.77	1.15	4	11.11	1.54	3	6.38	1.15
80 wpm.		42	16.15			4	7.69	1.54	6	16.67	2.31	9	19.15	3.46
Other[c]		20	7.69			3	5.77	1.15	4	11.11	1.54	4	8.51	1.54
No speed		17	6.54			10	19.23	3.85	0	0	0	2	4.26	.77
4. Grade D	260			128	49.23									
80 wpm.		42	16.15			8	15.38	3.08	2	5.56	.77	8	17.02	3.08
70 wpm.		24	9.23			2	3.85	.77	5	13.89	1.92	3	6.38	1.15
60 wpm.		19	7.32			2	3.85	.77	3	8.33	1.15	6	12.77	2.31
Other[d]		27	10.38			4	7.69	1.54	3	8.33	1.15	5	10.64	1.92
No speed		20	7.69			10	19.23	3.85	0	0	0	3	6.38	1.15

[a] 35 at 100-110 wpm; 5 at 90 wpm; 6 varying speeds.

[b] 4 varying speeds; 16 at 80 wpm; 15 at 90 wpm.

[c] 12 at 60-70 wpm; 1 at 110 wpm; 2 at 80 wpm; 5 varying speeds.

[d] 12 at 90 wpm; 3 at 100 wpm; 10 varying; 2 at 50 wpm.

Read the table thus: For Item 1 above 4 teachers replied or 1.54%. Group replies are extended horizontally.

TABLE 46.--Continued.

Shorthand Writing Speeds and Grade Levels	Total Responses	Total				Group IV Resp.			Group V Resp.			Group VI Resp.		
		Number of Responses	Percent of Responses	Number of No Resp.	Percent of No Resp.	Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total
1. Grade A	260			116	44.62									
140 wpm.		4	1.54			0	0	0	1	1.64	.38	0	0	0
130 wpm.		5	1.92			0	0	0	1	1.64	.38	1	2.86	.38
120 wpm.		71	27.31			13	44.83	5.00	18	29.51	6.92	10	28.57	3.85
Other[a]		46	17.69			3	10.34	1.15	14	22.95	5.38	6	17.14	2.31
No speed		18	6.92			2	6.90	.77	1	1.64	.38	3	8.57	1.15
2. Grade B	260			118	45.38									
120 wpm.		4	1.54			0	0	0	1	1.64	.38	1	2.86	.38
110 wpm.		34	13.08			4	13.79	1.54	8	13.11	3.08	5	14.29	1.92
100 wpm.		51	19.62			10	34.48	3.85	14	22.95	5.38	7	20.00	2.69
Other[b]		35	13.46			2	6.90	.77	9	14.75	3.46	4	11.43	1.54
No speed		18	6.92			2	6.90	.77	1	1.64	.38	3	8.57	1.15
3. Grade C	260			121	46.54									
100 wpm.		35	13.46			4	13.79	1.54	8	13.11	3.08	6	17.14	2.31
90 wpm.		25	9.62			5	17.24	1.92	8	13.11	3.08	2	5.71	.77
80 wpm.		42	16.15			7	24.14	2.69	10	16.39	3.85	6	17.14	2.31
Other[c]		20	7.69			0	0	0	5	8.20	1.92	4	11.43	1.54
No speed		17	6.54			2	6.90	.77	1	1.64	.38	2	5.71	.77
4. Grade D	260			128	49.23									
80 wpm.		42	16.15			8	27.59	3.08	12	19.67	4.62	4	11.43	1.54
70 wpm.		24	9.23			5	17.24	1.92	7	11.48	2.69	2	5.71	.77
60 wpm.		19	7.32			1	3.45	.38	4	6.56	1.54	3	8.57	1.15
Other[d]		27	10.38			1	3.45	.38	7	11.48	2.69	7	20.00	2.69
No speed		20	7.69			2	6.90	.77	2	3.28	.77	3	8.57	1.15

[a] 35 at 100-110 wpm; 5 at 90 wpm; 6 varying speeds.

[b] 4 varying speeds; 16 at 80 wpm; 15 at 90 wpm.

[c] 12 at 60-70 wpm; 1 at 110 wpm; 2 at 80 wpm; 5 varying speeds.

[d] 12 at 90 wpm; 3 at 100 wpm; 10 varying; 2 at 50 wpm.

Read the table thus: For Item 1 above 4 teachers replied or 1.54%. Group replies are extended horizontally.

At the Grade D level there were 42 respondents, or 16.15 percent, who indicated a speed level requirement of 80 words per minute.

The shorthand writing speeds reported by teachers when stressing the mailability of letters were varied. (See Table 46, page 256.)

The Administrative Management Society recommends that:

> . . . a minimum dictation standard of 80 words a minute on new material with a transcription rate of 30 words a minute for 10 minutes, of mailable quality.[124]

The State of North Carolina suggests terminal standards at the end of the fourth semester of shorthand:

> . . . a minimum dictation rate of 100 words a minute for three minutes, allowing a thirty minute transcription time and a minimum transcription rate of 15 words.[125]

It is recommended that teachers continue to examine their objectives in transcription and set dictation speeds, when requiring mailable copy, at an easily attained level.

Number of Times Shorthand Speed Must be Demonstrated When a Portion of the Final Grade is Based on Mailability

Public high school teachers of transcription were asked to indicate the number of times shorthand writing speeds were required of students for mailable copy for the various grade levels when a portion of the final grade

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[124]Nolan, op. cit., p. 380.

[125]Nolan, op. cit., p. 382.

was based on mailability. Only one item could be checked. Table 47 presents data concerning performance times.

An analysis of Table 47 shows that at the Grade A level 50 respondents, or 19.23 percent, indicated that the speed reported must be performed three times. There were 31, or 11.92 percent, who indicated that speed must be performed twice for mailable copy. There were 31, or 11.92 percent, who indicated other responses. (See Table 47.)

At the Grade B level, 49 respondents, or 18.85 percent, indicated that speed must be performed three times; and 34, or 13.08 percent, indicated that speed must be performed twice. There were 28, or 10.77 percent, who indicated other responses.

At the Grade C level, 45 respondents, or 17.31 percent, indicated that speed must be performed three times, and 34, or 13.08 percent, indicated that speed must be performed twice. There were 30, or 11.54 percent, who indicated other replies such as those given at the Grade A and Grade B level.

At the Grade D level, 42 respondents, or 16.15 percent, indicated that speed must be performed three times, and 26, or 10 percent, indicated that speed must be performed twice. There were 31, or 11.92 percent, who indicated replies such as those mentioned for the Grade A and B levels.

TABLE 47.--Number of times shorthand writing speeds required of students for mailable copy for the various grade levels when a portion of the final grade is based on mailability as reported by public high school teachers of transcription

Times Performed and Grade Levels	Total Responses	Total				Group I Resp.			Group II Resp.			Group III Resp.		
		Number of Responses	Percent of Responses	Number of No Responses	Percent of No Responses	Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total
1. Grade A	260			134	51.54									
Once		14	5.38			2	3.85	.77	4	11.11	1.54	2	4.26	.77
Twice		31	11.92			2	3.85	.77	2	5.56	.77	4	8.51	1.54
Three times		50	19.23			9	17.31	3.46	5	13.89	1.92	13	27.66	5.00
Other[a]		31	11.93			7	13.46	2.69	4	11.11	1.54	5	10.64	1.92
2. Grade B	260			137	52.68									
Once		12	4.62			1	1.92	.38	4	11.11	1.54	2	4.26	.77
Twice		34	13.08			3	5.77	1.15	2	5.56	.77	5	10.64	1.92
Three times		49	18.85			9	17.31	3.46	5	13.89	1.92	12	25.53	4.62
Other[b]		28	10.77			7	13.46	2.69	3	8.33	1.15	5	10.64	1.92
3. Grade C	260			138	53.08									
Once		13	5.00			1	1.92	.38	4	11.11	1.54	3	6.38	1.15
Twice		34	13.08			3	5.77	1.15	1	2.78	.38	4	8.51	1.54
Three times		45	17.30			8	15.38	3.08	5	13.89	1.92	12	25.53	4.62
Other[c]		30	11.54			8	15.38	3.08	3	8.33	1.15	5	10.64	1.92
4. Grade D	260			142	54.62									
Once		19	7.31			2	3.85	.77	4	11.11	1.54	3	6.38	1.15
Twice		26	10.00			2	3.85	.77	1	2.78	.38	4	8.51	1.54
Three times		42	16.15			6	11.54	2.31	4	11.11	1.54	12	25.53	4.62
Other[d]		31	11.92			8	15.38	3.08	4	11.11	1.54	4	8.51	1.54

[a]14 rep. majority; 2 rep. 50% and 90%; 5 rep. point system; 10 rep. 4-10 times.

[b]14 rep. majority; 2 rep. 50% and 90%; 3 rep. point system; 9 rep. 4-10 times.

[c]2 rep. 50% and 70%; 5 rep. point system; 13 rep. majority; 10 rep. 4-10 times.

[d]14 rep. majority; 10 rep. 4-10 times; 2 rep. 50-60%; 5 rep. point system.

Read the table thus: For Item 1 above (Once) 14 teachers or 5.38% replied. Group replies were extended horizontally.

TABLE 47.--Continued.

Times Performed and Grade Levels	Total Responses	Total: Number of Responses	Total: Percent of Responses	Total: Number of No Responses	Total: Percent of No Responses	Group IV Resp.: Number	Group IV Resp.: Percent of Group	Group IV Resp.: Percent of Total	Group V Resp.: Number	Group V Resp.: Percent of Group	Group V Resp.: Percent of Total	Group VI Resp.: Number	Group VI Resp.: Percent of Group	Group VI Resp.: Percent of Total
1. Grade A	260			134	51.54									
Once		14	5.38			1	3.45	.38	4	6.56	1.54	1	2.86	.38
Twice		31	11.92			2	6.90	.77	12	19.67	4.62	9	25.71	3.46
Three times		50	19.23			8	27.59	3.08	12	19.67	4.62	3	8.57	1.15
Other[a]		31	11.93			5	17.24	1.92	6	9.84	2.31	4	11.43	1.54
2. Grade B	260			137	52.68									
Once		12	4.62			1	3.45	.38	3	4.92	1.15	1	2.86	.38
Twice		34	13.08			2	6.90	.77	13	21.31	5.00	9	25.71	3.46
Three times		49	18.85			8	27.59	3.08	11	18.03	4.23	4	11.43	1.54
Other[b]		28	10.77			5	17.24	1.92	5	8.20	1.92	3	8.57	1.15
3. Grade C	260			138	53.08									
Once		13	5.00			1	3.45	.38	3	4.92	1.15	1	2.86	.38
Twice		34	13.08			2	6.90	.77	14	22.95	5.38	10	28.57	3.85
Three times		45	17.30			8	27.59	3.08	10	16.39	3.85	2	5.71	.77
Other[c]		30	11.54			5	17.24	1.92	5	8.20	1.92	4	11.43	1.54
4. Grade D	260			142	54.62									
Once		19	7.31			1	3.45	.38	7	11.48	2.69	2	5.71	.77
Twice		26	10.00			2	6.90	.77	9	14.75	3.46	8	22.86	3.08
Three times		42	16.15			8	27.59	3.08	11	18.03	4.23	1	2.86	.38
Other[d]		31	11.92			5	17.24	1.92	5	8.20	1.92	5	14.29	1.92

[a] 14 rep. majority; 2 rep. 50% and 90%; 5 rep. point system; 10 rep. 4-10 times.

[b] 14 rep. majority; 2 rep. 50% and 90%; 3 rep. point system; 9 rep. 4-10 times.

[c] 2 rep. 50% and 70%; 5 rep. point system; 13 rep. majority; 10 rep. 4-10 times.

[d] 14 rep. majority; 10 rep. 4-10 times; 2 rep. 50-60%; 5 rep. point system.

Read the table thus: For Item 1 above (Once) 14 teachers or 5.38% replied. Group replies were extended horizontally.

Transcription teachers stated that writing speeds must be demonstrated three times, in line with Lamb who recommends that "three tests be used rather than one as a more accuracte measure because of the variabion in conditions of testing."[126]

Percent of Mailable Work Required If Portion of Final Grade is Based on Mailability

Public high school teachers of transcription were asked to indicate the percent of the student's graded work that must be mailable at the various grade levels, if a portion of the final grade is based on mailability. One item could be checked. Table 48 presents data concerning percent of mailable work.

An analysis of Table 48 shows that 56 respondents, or 21.54 percent of the total, indicated that 95 percent of the student's graded work must be mailable at the Grade A level, if a portion of the final grade is based on mailability. There were 34, or 13.08 percent, who indicated 90 percent as the percentage of mailability required. There were 35 other responses, or 13.46 percent, whose accuracy requirements ranged from 50 percent to 80 percent and also 100 percent.

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[126]Lamb, op. cit., p. 197.

TABLE 48.--Percent of student's graded work that must be mailable (if a portion of the final grade for a student in transcription class is based on mailability) for the various grade levels as reported by public high school teachers of transcription

Percentage Mailable and Grade Level	Total Responses	Total				Group I Resp.			Group II Resp.			Group III Resp.		
		Number of Responses	Percent of Responses	Number of No Resp.	Percent of No Resp.	Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total
1. Grade A	260			122	46.92									
95%		56	21.54			11	21.15	4.23	9	25.00	3.46	9	19.15	3.46
90%		34	13.08			8	15.38	3.08	5	13.89	1.92	8	17.02	3.08
85%		13	5.00			1	1.92	.38	1	2.78	.38	3	6.38	1.15
Other[a]		35	13.46			7	13.46	2.69	3	8.33	1.15	6	12.77	2.31
2. Grade B	260			124	47.69									
80%		68	26.15			15	28.85	5.77	11	30.56	4.23	12	25.53	4.62
75%		19	7.31			2	3.85	.77	3	8.33	1.15	6	12.77	2.31
70%		4	1.54			0	0	0	0	0	0	1	2.13	.38
Other[b]		45	17.31			10	19.23	3.85	5	13.89	1.92	6	12.77	2.31
3. Grade C	260			128	49.23									
65%		45	17.31			9	17.31	3.46	8	22.22	3.08	11	23.40	4.23
60%		21	8.08			3	5.77	1.15	2	5.56	.77	6	12.77	2.31
55%		7	2.69			0	0	0	1	2.78	.38	0	0	0
Other[c]		59	22.69			14	26.92	5.38	6	16.67	2.31	8	17.02	3.08
4. Grade D	260			133	51.15									
50%		54	20.77			9	17.31	3.46	8	22.22	3.08	14	29.79	5.38
45%		7	2.69			1	1.92	.38	0	0	0	2	4.26	.77
40%		10	3.85			2	3.85	.77	1	2.78	.38	1	2.13	.38
Other[d]		56	21.54			13	25.00	5.00	6	16.67	2.31	8	17.02	3.08

[a]11 rpt. 100%; 6 rpt. mailable curve; 13 rpt. 50%-80%; 5 rpt. ability of group.

[b]18 rpt. 50%-70%; 17 rpt. 85%-100%; 10 mailable graded on curve.

[c]16 rpt. 40%-50%; 33 rpt. 70%-100%; 5 mailable graded on curve; 5 according group ability.

[d]31 rpt. 60%-100%; 16 rpt. 25%-39%; 5 rpt. mailable graded on curve; 4 rpt. according to ability of group.

Read the table thus: For Item 1 above 56 teachers replied or 21.54%. Group replies are extended horizontally.

TABLE 48.--Continued.

Percentage Mailable and Grade Level	Total Responses	Total				Group IV Resp.			Group V Resp.			Group VI Resp.		
		Number of Responses	Percent of Responses	Number of No Resp.	Percent of No Resp.	Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total
1. Grade A	260			122	46.92									
95%		56	21.54			6	20.69	2.31	8	13.11	3.08	13	37.14	5.00
90%		34	13.08			3	10.34	1.15	9	14.75	3.46	1	2.86	.38
85%		13	5.00			3	10.34	1.15	4	6.56	1.54	1	2.86	.38
Other[a]		35	13.46			4	13.79	1.54	10	16.39	3.85	5	14.29	1.92
2. Grade B	260			124	47.69									
80%		68	26.15			7	24.14	2.69	12	19.67	4.62	11	31.43	4.23
75%		19	7.31			2	6.90	.77	6	9.84	2.31	0	0	0
70%		4	1.54			1	3.45	.38	0	0	0	2	5.71	.77
Other[b]		45	17.31			6	20.69	2.31	12	19.67	4.62	6	17.14	2.31
3. Grade C	260			128	49.23									
65%		45	17.31			5	17.24	1.92	5	8.20	1.92	7	20.00	2.69
60%		21	8.08			2	6.90	.77	6	9.84	2.31	2	5.71	.77
55%		7	2.69			3	10.34	1.15	1	1.64	.38	2	5.71	.77
Other[c]		59	22.69			6	20.69	2.31	17	27.87	6.54	8	22.86	3.08
4. Grade D	260			133	51.15									
50%		54	20.77			6	20.69	2.31	9	14.75	3.46	8	22.86	3.08
45%		7	2.69			1	3.45	.38	3	4.92	1.15	0	0	0
40%		10	3.85			3	10.34	1.15	1	1.64	.38	2	5.71	.77
Other[d]		56	21.54			6	20.69	2.31	16	26.23	6.15	7	20.00	2.69

[a] 11 rpt. 100%; 6 rpt. mailable curve; 13 rpt. 50%-80%; 5 rpt. ability of group.

[b] 18 rpt. 50%-70%; 17 rpt. 85%-100%; 10 mailable graded on curve.

[c] 16 rpt. 40%-50%; 33 rpt. 70%-100%; 5 mailable graded on curve; 5 according group ability.

[d] 31 rpt. 60%-100%; 16 rpt. 25%-39%; 5 rpt. mailable graded on curve; 4 rpt. according to ability of group.

Read the table thus: For Item 1 above 56 teachers replied or 21.54%. Group replies are extended horizontally.

There were 68 respondents, or 26.15 percent, who indicated that 80 percent of the student's graded work must be mailable at the Grade B level. Other replies by 45, or 17.31 percent, indicated varied replies ranging from 50 percent to 60 percent, 60 percent to 74 percent, and 100 percent.

There were 45 respondents, or 17.31 percent, who indicated that 65 percent of the work must be mailable at the Grade C level. Other varied replies were indicated by 59, or 22.69 percent. Reports of percentages of mailable work ranged as low as 40 percent.

There were 54 respondents, or 20.77 percent, who indicated that 50 percent of the work must be mailable at the Grade D level. Other varied replies were indicated by 56 respondents, or 21.54 percent. A wide range was noted, even as low as 25 to 39 percent.

Percentages reported for the various grade levels ranged from a high of 95 percent at the Grade A level to a low of 25 percent at the Grade D level.

Leslie's[127] opinion with regard to mailable copy is that students should be able to turn out about three-fourths of their transcripts in mailable condition from dictation originally taken at the rate of 80 to 120 words a minute.

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[127]Louis Leslie, op. cit.

It is recommended that a realistically attainable standard for the high school student be set, for such a standard will bring better final results than will the setting of unreasonably high standards.

Dictation Procedures Used When a Portion of the Final Grade is Based on Percent of Mailability

Public high school teachers of transcription were asked to indicate the dictation procedures used when a portion of the final grade in transcription was based on the percent of mailability. Only one item could be checked. Table 49 presents data concerning dictation procedures.

An analysis of Table 49 shows that 78 respondents, or 30.12 percent, reported that they used a combination of dictation procedures: varying speeds, speeds easily attained by every student, and speeds that force students to write above their normal range.

There were 50, or 19.31 percent, who reported that they used only dictation at varying speeds while 40, or 15.44 percent, indicated that they used dictation at speeds easily attained by every student.

There were 8 respondents, or 3.09 percent, who indicated dictation speeds at low and average or without timing.

TABLE 49.--Dictation procedures used by public high school teachers of transcription when a portion of the final grade is based on percent of mailability

Dictation Procedures	Total		Group I			Group II			Group III		
	Number of Responses	Percent of Responses	Responses			Responses			Responses		
			Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total
1. Dictate at speeds easily attained by every student	40	15.44	9	17.31	3.47	6	16.67	2.32	6	12.77	2.32
2. Dictate at speeds that force students to write above their normal range	4	1.54	0	0	0	1	2.78	.39	2	4.26	.77
3. Dictate at varying speeds	50	19.31	7	13.46	2.70	10	27.78	3.86	10	21.28	3.86
4. Combination of above 3 items	78	30.12	17	32.69	6.56	10	27.78	3.86	16	34.04	6.18
5. Other[a]	8	3.09	2	3.85	.77	0	0	0	0	0	0
Total No Response	80	30.77	I7	32.69	6.56	9	25.00	3.47	13	27.66	5.02
Total	260	100.00	52		20.08	36		13.90	47		18.15

[a]7 reported dictation at low and average speeds; 1 reported dictation without timing.

Read the table thus: For Item 1 above there were 40 teachers who responded, representing 15.44% of the total of 260 questionnaires tabulated and 80 teachers representing 30.77% of the total respondents who did not reply to this question. Replies were distributed numerically and percentage-wise in Groups I-VI.

TABLE 49.--Continued.

Dictation Procedures	Total		Group IV			Group V			Group VI		
	Number of Responses	Percent of Responses	Responses Number	Responses Percent of Group	Responses Percent of Total	Responses Number	Responses Percent of Group	Responses Percent of Total	Responses Number	Responses Percent of Group	Responses Percent of Total
1. Dictate at speeds easily attained by every student	40	15.44	5	17.24	1.93	9	15.00	3.47	5	14.29	1.93
2. Dictate at speeds that force students to write above their normal range	4	1.54	1	3.45	.39	0	0	0	0	0	0
3. Dictate at varying speeds	50	19.31	4	13.79	1.54	11	18.33	4.25	8	22.86	3.09
4. Combination of above 3 items	78	30.12	6	20.69	2.32	18	30.00	6.95	11	31.43	4.25
5. Other[a]	8	3.09	3	10.34	1.16	1	1.67	.39	2	5.71	.77
Total No Response	80	30.77	10	34.48	3.86	21	35.00	8.11	10	27.78	3.85
Total	260	100.00	29		11.20	60		23.17	36		13.89

[a] 7 reported dictation at low and average speeds; 1 reported dictation without timing.

Read the table thus: For Item 1 above there were 40 teachers who responded, representing 15.44% of the total of 260 questionnaires tabulated and 80 teachers representing 30.77% of the total respondents who did not reply to this question. Replies were distributed numerically and percentage-wise in Groups I-VI.

Most teachers use a combination of dictation procedures depending upon which skill the teacher is stressing. Fast dictation should push the student to greater recording skill, while slower dictation is more effective where accurate transcripts are desired.

It is recommended that teachers continue to dictate at the various speed levels mentioned but to inform the student of the objectives of the test before the dictation is given, in order to fulfill the dual role of the transcription course--speedbuilding with 95 percent accuracy and mailability of the transcript.

Transcription Speeds Required for an A Grade in Producing Mailable Copy When a Portion of the Final Grade is Based on Transcription Speed

Public high school teachers of transcription were asked to indicate transcription speeds required in producing mailable copy, when a portion of the final grade in transcription was based on transcription speed, for the A Grade, classified under the various types of transcripts. Table 50 presents data concerning transcription speeds.

An analysis of Table 50 shows that 17 respondents, or 6.54 percent, reported that they used a minimum transcription speed of 35 words per minute on straight copy

TABLE 50.--Transcription speeds in producing mailable copy required of students in transcription class when a portion of the final grade is based on transcription speed for the grade A level as reported by public high school transcription teachers

Grade Levels and Type of Transcript	Total Responses	Total				Group I Resp.			Group II Resp.			Group III Resp.		
		Number of Responses	Percent of Responses	Number of No Resp.	Percent of No Resp.	Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total
1. Straight copy dictation	260			210	80.77									
25 wpm.		16	6.15			3	5.77	1.15	2	5.56	.77	2	4.26	.77
30 wpm.		11	4.23			1	1.92	.38	1	2.78	.38	3	6.38	1.15
35 wpm.		17	6.54			5	9.62	1.92	2	5.56	.77	6	12.77	2.31
Other[a]		6	2.31			1	1.92	.38	0	0	0	1	2.13	.38
2. Letters, errors corr. no carbons, no env.	260			197	75.77									
25 wpm.		22	8.45			6	11.54	2.31	4	11.11	1.54	3	6.38	1.15
30 wpm.		21	8.08			4	7.69	1.54	0	0	0	5	10.64	1.92
35 wpm.		10	3.85			2	3.85	.77	2	5.56	.77	2	4.26	.77
Other[b]		10	3.85			1	1.92	.38	3	8.33	1.15	2	4.26	.77
3. Letters, errors corr. 1 carbon, 1 envelope	260			209	80.38									
20 wpm.		19	7.31			1	1.92	.38	3	8.33	1.15	5	10.64	1.92
25 wpm.		15	5.77			4	7.69	1.54	1	2.78	.38	3	6.38	1.15
30 wpm.		12	4.62			1	1.92	.38	1	2.78	.38	1	2.13	.38
Other[c]		5	1.92			1	1.92	.38	0	0	0	1	2.13	.38
4. Letters, errors corr. 1 carbon, no envelopes	260			218	83.85									
20 wpm.		16	6.15			1	1.92	.38	3	8.33	1.15	4	8.51	1.54
25 wpm.		15	5.77			2	3.85	.77	2	5.56	.77	2	4.26	.77
30 wpm.		5	1.92			1	1.92	.38	1	2.78	.38	0	0	0
Other[d]		6	2.31			0	0	0	0	0	0	2	4.26	.77

[a] 2 at 40 and 50 wpm; 1 at 32 wpm; 2 at 20 wpm; 1 point system.

[b] 5 at 18-20 wpm; 2 at 23-26 wpm; 1 at 27 wpm; 1 at 40 wpm; 1 point system.

[c] 2 at 15-17 wpm; 1 at 26 wpm; 1 at 30 wpm; 1 point system.

[d] 2 at 14-18 wpm; 1 at 26 wpm; 1 at 35 wpm; 1 at 40 wpm; 1 point system.

Read the table thus: For Item 1 above (25 wpm.) 16 teachers or 6.15% replied. Group replies are extended horizontally.

TABLE 50.--Continued.

Grade Levels and Type of Transcript	Total Responses	Total: Number of Responses	Total: Percent of Responses	Total: Number of No Resp.	Total: Percent of No Resp.	Group IV Resp.: Number	Group IV Resp.: Percent of Group	Group IV Resp.: Percent of Total	Group V Resp.: Number	Group V Resp.: Percent of Group	Group V Resp.: Percent of Total	Group VI Resp.: Number	Group VI Resp.: Percent of Group	Group VI Resp.: Percent of Total
1. Straight copy dictation	260			210	80.77									
25 wpm.		16	6.15			2	6.90	.77	4	6.56	1.54	3	8.57	1.15
30 wpm.		11	4.23			2	6.90	.77	3	4.92	1.15	1	2.86	.38
35 wpm.		17	6.54			0	0	0	2	3.28	.77	2	5.71	.77
Other[a]		6	2.31			1	3.45	.38	2	3.28	.77	1	2.86	.38
2. Letters, errors corr. no carbons, no env.	260			197	75.77									
25 wpm.		22	8.45			3	10.34	1.15	4	6.56	1.54	2	5.71	.77
30 wpm.		21	8.08			2	6.90	.77	7	11.48	2.69	3	8.57	1.15
35 wpm.		10	3.85			3	10.34	1.15	1	1.64	.38	0	0	0
Other[b]		10	3.85			0	0	0	2	2.28	.77	2	5.71	.77
3. Letters, errors corr. 1 carbon, 1 envelope	260			209	80.38									
20 wpm.		19	7.31			3	10.34	1.15	4	6.56	1.54	3	8.57	1.15
25 wpm.		15	5.77			1	3.45	.38	5	8.20	1.92	1	2.86	.38
30 wpm.		12	4.62			3	10.34	1.15	4	6.56	1.54	2	5.71	.77
Other[c]		5	1.92			0	0	0	2	3.28	.77	1	2.86	.38
4. Letters, errors corr. 1 carbon, no envelopes	260			218	83.85									
20 wpm.		16	6.15			2	6.90	.77	3	4.92	1.15	3	8.57	1.15
25 wpm.		15	5.77			3	10.34	1.15	5	8.20	1.92	1	2.86	.38
30 wpm.		5	1.92			2	6.90	.77	1	1.64	.38	0	0	0
Other[d]		6	2.31			0	0	0	2	3.28	.77	2	5.71	.77

[a] 2 at 40 and 50 wpm; 1 at 32 wpm; 2 at 20 wpm; 1 point system.

[b] 5 at 18-20 wpm; 2 at 23-26 wpm; 1 at 27 wpm; 1 at 40 wpm; 1 point system.

[c] 2 at 15-17 wpm; 1 at 26 wpm; 1 at 30 wpm; 1 point system.

[d] 2 at 14-18 wpm; 1 at 26 wpm; 1 at 35 wpm; 1 at 40 wpm; 1 point system.

Read the table thus: For Item 1 above (25 wpm.) 16 teachers or 6.15% replied. Group replies are extended horizontally.

dictation material at the Grade A level, when a portion of the final grade was based on transcription speed. There were 16, or 6.15 percent, who indicated a minimum speed level of 25 words per minute at the Grade A level. There were 11, or 4.23 percent, who indicated a speed level of 30 words per minute.

There were 22 respondents, or 8.46 percent, who reported a minimum speed level of 25 words per minute for the transcription of letters with errors corrected, with no carbon copies or envelopes. There were 21, or 8.08 percent, who reported 30 words per minute in this category.

There were 19, or 7.31 percent, who indicated a minimum speed requirement of 20 words per minute, and 15, or 5.77 percent, indicated a speed requirement of 25 words per minute for the transcription of letters with errors corrected, 1 carbon copy and one envelope per letter.

There were 16 respondents, or 6.15 percent, who indicated a speed level requirement of 20 words per minute and 15, or 5.77 percent, who indicated a speed level requirement of 25 words per minute for the transcription of letters with errors corrected, 1 carbon copy and no envelopes.

Transcription Speeds Required for a B Grade in Producing Mailable Copy When a Portion of the Final Grade is Based on Transcription Speed

Public high school teachers of transcription were asked to indicate transcription speeds required in producing mailable copy, when a portion of the final grade in transcription was based on transcription speed for the B grade classified under the various types of transcripts. Table 51 presents data concerning transcription speeds.

An analysis of Table 51 shows that 15 respondents, or 5.77 percent, reported a minimum transcription speed of 25 words per minute on straight copy dictation material at the Grade B level, when a portion of the final grade was based on transcription speed. There were 14, or 5.38 percent, who indicated a minimum speed of 30 words per minute at the Grade B level.

There were 22 respondents, or 8.46 percent, who reported a minimum speed level of 25 words per minute for the transcription of letters with errors corrected, with no carbon copies or envelopes. There were 19, or 7.31 percent, who reported 20 words per minute in this category.

There were 18 respondents, or 6.92 percent, who indicated a minimum speed requirement of 15 words per minute and 17, or 6.54 percent, reported a minimum speed of 20 words per minute for the transcription of letters with errors corrected, 1 carbon copy, and 1 envelope.

TABLE 51.--Transcription speeds in producing mailable copy required of students in transcription class when a portion of the final grade is based on transcription speed for grade level B as reported by public high school transcription teachers

Type of Transcript Grade Level B	Total Responses	Total				Group I Resp.			Group II Resp.			Group III Resp.		
		Number of Responses	Percent of Responses	Number of No Resp.	Percent of No Resp.	Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total
1. Straight copy dictation	260			213	81.93									
20 wpm.		13	5.00			3	5.77	1.15	1	2.78	.38	1	2.13	.38
25 wpm.		15	5.77			2	3.85	.77	2	5.56	.77	4	8.51	1.54
30 wpm.		14	5.38			4	7.69	1.54	1	2.78	.38	6	12.77	2.31
Other[a]		5	1.92			0	0	0	1	2.78	.38	0	0	0
2. Letters, errors corr. no carbons, no env.	260			199	76.54									
20 wpm.		19	7.31			5	9.62	1.92	4	11.11	1.54	3	6.38	1.15
25 wpm.		22	8.46			4	7.69	1.54	1	2.78	.38	5	10.64	1.92
30 wpm.		9	3.46			2	3.85	.77	1	2.78	.38	2	4.26	.77
Other[b]		11	4.23			2	3.85	.77	3	8.33	1.15	2	4.26	.77
3. Letters, errors corr. 1 carbon, 1 envelope	260			212	81.54									
15 wpm.		18	6.92			1	1.92	.38	3	8.33	1.15	5	10.64	1.92
20 wpm.		17	6.54			4	7.69	1.54	2	5.56	.77	3	6.38	1.15
25 wpm.		8	3.08			1	1.92	.38	0	0	0	1	2.13	.38
Other[c]		5	1.92			1	1.92	.38	0	0	0	1	2.13	.38
4. Letters, errors corr. 1 carbon, no envelope	260			221	85.00									
15 wpm.		14	5.38			1	1.92	.38	3	8.33	1.15	3	6.38	1.15
20 wpm.		14	5.38			2	3.85	.77	3	8.33	1.15	2	4.26	.77
25 wpm.		6	2.31			1	1.92	.38	0	0	0	0	0	0
Other[d]		5	1.93			0	0	0	0	0	0	2	4.26	.77

[a] 1 at 21 wpm; 1 at 22 wpm; 2 at 35 wpm; 1 at 40 wpm.

[b] 5 at 15-17 wpm; 5 at 21-23 wpm.

[c] 1 at 14 wpm; 2 at 17 wpm; 2 at 20-23 wpm.

[d] 2 at 14 wpm; 2 at 23-25 wpm; 1 at 30 wpm.

Read the table thus: For Item 1 above (20 wpm.) 13 teachers or 5% replied. Group replies were extended horizontally.

TABLE 51.--Continued.

Type of Transcript Grade Level B	Total Responses	Total				Group IV Resp.			Group V Resp.			Group VI Resp.		
		Number of Responses	Percent of Responses	Number of No Resp.	Percent of No Resp.	Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total
1. Straight copy dictation	260			213	81.93									
20 wpm.		13	5.00			2	6.90	.77	2	3.28	.77	4	11.43	1.54
25 wpm.		15	5.77			2	6.90	.77	4	6.56	1.54	1	2.86	.38
30 wpm.		14	5.38			0	0	0	2	3.28	.77	1	2.86	.38
Other[a]		5	1.92			1	3.45	.38	2	3.28	.77	1	2.86	.38
2. Letters, errors corr. no carbons, no env.	260			199	76.54									
20 wpm.		19	7.31			2	6.90	.77	4	6.56	1.54	1	2.86	.38
25 wpm.		22	8.46			2	6.90	.77	7	11.48	2.69	3	8.57	1.15
30 wpm.		9	3.46			3	10.34	1.15	1	1.64	.38	0	0	0
Other[b]		11	4.23			1	3.45	.38	1	1.64	.38	2	5.71	.77
3. Letters, errors corr. 1 carbon, 1 envelope	260			212	81.54									
15 wpm.		18	6.92			2	6.90	.77	3	4.92	1.15	4	11.43	1.54
20 wpm.		17	6.54			1	3.45	.38	6	9.84	2.31	1	2.86	.38
25 wpm.		8	3.08			3	10.34	1.15	2	3.28	.77	1	2.86	.38
Other[c]		5	1.92			1	3.45	.38	1	1.64	.38	1	2.86	.38
4. Letters, errors corr. 1 carbon, no envelope	260			221	85.00									
15 wpm.		14	5.38			2	6.90	.77	2	3.28	.77	3	8.57	1.15
20 wpm.		14	5.38			2	6.90	.77	5	8.20	1.92	0	0	0
25 wpm.		6	2.31			3	10.34	1.15	1	1.64	.38	1	2.86	.38
Other[d]		5	1.93			0	0	0	1	1.64	.38	2	5.71	.77

[a] 1 at 21 wpm; 1 at 22 wpm; 2 at 35 wpm; 1 at 40 wpm.

[b] 5 at 15-17 wpm; 5 at 21-23 wpm.

[c] 1 at 14 wpm; 2 at 17 wpm; 2 at 20-23 wpm.

[d] 2 at 14 wpm; 2 at 23-25 wpm; 1 at 30 wpm.

Read the table thus: For Item 1 above (20 wpm.) 13 teachers or 5% replied. Group replies were extended horizontally.

There were 14 respondents, or 5.38 percent, who indicated a speed level requirement of 15 words per minute, and 14, or 5.38 percent, who indicated a speed requirement of 20 words per minute for the transcription of letters with errors corrected, with 1 carbon copy and no envelopes at the Grade B level.

Transcription Speeds Required for a C Grade in Producing Mailable Copy When a Portion of the Final Grade is Based on Transcription Speed

Public high school teachers of transcription were asked to indicate transcription speeds required in producing mailable copy, when a portion of the final grade in transcription was based on transcription speed for the C grade classified under the various types of transcripts. Table 52 presents data concerning transcription speeds.

An analysis of Table 52 shows that 16 respondents, or 6.15 percent, used a minimum transcription speed of 20 words per minute on straight-copy dictation material at the Grade C level, when a portion of the final grade was based on transcription speed. There were 13, or 5 percent, who indicated a minimum speed of 15 words per minute at the Grade C level.

There were 25 respondents, or 6.92 percent, who reported a minimum speed level of 20 words per minute for the transcription of letters with errors corrected, with

TABLE 52.--Transcription speeds in producing mailable copy required of students in transcription class when a portion of the final grade is based on transcription speed for the grade C level as reported by public high school transcription teachers

Type of Transcript Grade Level C	Total Responses	Total				Group I Resp.			Group II Resp.			Group III Resp.		
		Number of Responses	Percent of Responses	Number of No Resp.	Percent of No Resp.	Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total
1. Straight copy dictation	260			215	82.69									
15 wpm.		13	5.00			3	5.77	1.15	0	0	0	2	4.26	.77
20 wpm.		16	6.15			3	5.77	1.15	2	5.56	.77	4	8.51	1.54
25 wpm.		12	4.62			3	5.77	1.15	1	2.78	.38	5	10.64	1.92
Other[a]		4	1.54			0	0	0	0	0	0	0	0	0
2. Letters, errors corr. no carbons, no env.	260			200	76.92									
15 wpm.		18	6.92			5	9.62	1.92	3	8.33	1.15	3	6.38	1.15
20 wpm.		25	9.62			4	7.69	1.54	3	8.33	1.15	5	10.64	1.92
25 wpm.		9	3.46			2	3.85	.77	1	2.78	.38	2	4.26	.77
Other[b]		8	3.08			2	3.85	.77	1	2.78	.38	2	4.26	.77
3. Letters, errors corr. 1 carbon, 1 envelope	260			213	81.92									
10 wpm.		15	5.77			1	1.92	.38	1	2.78	.38	4	8.51	1.54
15 wpm.		15	5.77			4	7.69	1.54	2	5.56	.77	3	6.38	1.15
20 wpm.		9	3.46			1	1.92	.38	1	2.78	.38	0	0	0
Other[c]		8	3.08			1	1.92	.38	0	0	0	3	6.38	1.15
4. Letters, errors corr. 1 carbon, no envelopes	260			221	85.00									
10 wpm.		12	4.62			2	3.85	.77	1	2.78	.38	2	4.26	.77
15 wpm.		13	5.00			2	3.85	.77	3	8.33	1.15	3	6.38	1.15
20 wpm.		8	3.08			1	1.92	.38	1	2.78	.38	0	0	0
Other[d]		6	2.30			0	0	0	0	0	0	2	4.26	.77

[a] 1 at 16 wpm.
1 at 18 wpm.
2 at 30 wpm.

[b] 3 at 10-11 wpm.
3 at 16-20 wpm.
1 at 25 wpm.

[c] 5 at 12-14 wpm.
2 at 20 wpm.
1 at 25 wpm.

[d] 2 at 11 wpm.
1 at 17 wpm.
2 at 20 wpm.
1 at 25 wpm.

Read the table thus: For Item 1 above (15 wpm.), 13 teachers or 5% replied. Group replies are extended horizontally.

TABLE 52.--Continued.

Type of Transcript Grade Level C	Total Responses	Total: Number of Responses	Total: Percent of Responses	Total: Number of No Resp.	Total: Percent of No. Resp.	Group IV Resp.: Number	Group IV Resp.: Percent of Group	Group IV Resp.: Percent of Total	Group V Resp.: Number	Group V Resp.: Percent of Group	Group V Resp.: Percent of Total	Group VI Resp.: Number	Group VI Resp.: Percent of Group	Group VI Resp.: Percent of Total
1. Straight copy dictation	260			215	82.69									
15 wpm.		13	5.00			2	6.90	.77	3	4.92	1.15	3	8.57	1.15
20 wpm.		16	6.15			2	6.90	.77	3	4.92	1.15	2	5.71	.77
25 wpm.		12	4.62			0	0	0	2	3.28	.77	1	2.86	.38
Other[a]		4	1.54			1	3.45	.38	2	3.28	.77	1	2.86	.38
2. Letters, errors corr. no carbons, no env.	260			200	76.92									
15 wpm.		18	6.92			2	6.90	.77	4	6.56	1.54	1	2.86	.38
20 wpm.		25	9.62			3	10.34	1.15	7	11.48	2.69	3	8.57	1.15
25 wpm.		9	3.46			3	10.34	1.15	1	1.64	.38	0	0	0
Other[b]		8	3.08			0	0	0	1	1.64	.38	2	5.71	.77
3. Letters, errors corr. 1 carbon, 1 envelope	260			213	81.92									
10 wpm.		15	5.77			2	6.90	.77	4	6.56	1.54	3	8.57	1.15
15 wpm.		15	5.77			1	3.45	.38	3	4.92	1.15	2	5.71	.77
20 wpm.		9	3.46			3	10.34	1.15	3	4.92	1.15	1	2.86	.38
Other[c]		8	3.08			1	3.45	.38	2	3.28	.77	1	2.86	.38
4. Letters, errors corr. 1 carbon, no envelopes	260			221	85.00									
10 wpm.		12	4.62			2	6.90	.77	3	4.92	1.15	2	5.71	.77
15 wpm.		13	5.00			1	3.45	.38	3	4.92	1.15	1	2.86	.38
20 wpm.		8	3.08			3	10.34	1.15	2	3.28	.77	1	2.86	.38
Other[d]		6	2.30			1	3.45	.38	1	1.64	.38	2	5.71	.77

[a] 1 at 16 wpm.
1 at 18 wpm.
2 at 30 wpm.

[b] 3 at 10-11 wpm.
3 at 16-20 wpm.
1 at 25 wpm.

[c] 5 at 12-14 wpm.
2 at 20 wpm.
1 at 25 wpm.

[d] 2 at 11 wpm.
1 at 17 wpm.
2 at 20 wpm.

Read the table thus: For Item 1 above (15 wpm.), 13 teachers or 5% replied. Group replies are extended horizontally.

no carbon copies or envelopes. There were 18, or 6.92 percent, who reported 15 words per minute for this category.

There were 15, or 5.77 percent, who indicated a minimum speed requirement of 15 words per minute and 15, or 5.77 percent, reported a minimum speed of 10 words per minute for the transcription of letters with errors corrected, 1 carbon copy and 1 envelope.

There were 13, or 5 percent, who indicated a speed level requirement of 15 words per minute and 12, or 4.62 percent, who indicated a speed requirement of 10 words per minute for the transcription of letters with errors corrected with 1 carbon copy and no envelopes.

Transcription Speeds Required for a D Grade in Producing Mailable Copy When a Portion of the Final Grade is Based on Transcription Speed

Public high school teachers of transcription were asked to indicate transcription speeds required in producing mailable copy, when a portion of the final grade in transcription was based on transcription speed for the D grade, classified under the various types of transcripts. Table 53 presents data concerning transcription speeds.

An analysis of Table 53 shows that 14 respondents, or 5.38 percent, reported a minimum transcription speed of 15 words per minute on straight-copy dictation material at the Grade D level, when a portion of the final grade

TABLE 53.--Transcription speeds in producing mailable copy required of students in transcription class when a portion of the final grade is based on transcription speed for the grade D level as reported by public high school transcription teachers

Type of Transcript Grade Level D	Total Responses	Total				Group I Resp.			Group II Resp.			Group III Resp.		
		Number of Responses	Percent of Responses	Number of No Resp.	Percent of No Resp.	Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total
1. Straight copy dictation	260			220	84.62									
10 wpm.		11	4.23			3	5.77	1.15	0	0	0	2	4.26	.77
15 wpm.		14	5.38			3	5.77	1.15	2	5.56	.77	2	4.26	.77
20 wpm.		12	4.62			2	3.85	.77	1	2.78	.38	5	10.64	1.92
Other[a]		3	1.15			0	0	0	0	0	0	0	0	0
2. Letters, errors corr. no carbons, no env.	260			204	78.46									
10 wpm.		18	6.92			5	9.62	1.92	3	8.33	1.15	3	6.38	1.15
15 wpm.		20	7.69			5	9.62	1.92	2	5.56	.77	4	8.51	1.54
20 wpm.		10	3.85			1	1.92	.38	1	2.78	.38	2	4.26	.77
Other[b]		8	3.08			1	1.92	.38	2	5.56	.77	2	4.26	.77
3. Letters, errors corr. 1 carbon, 1 envelope	260			215	82.69									
10 wpm.		25	9.62			3	5.77	1.15	2	5.56	.77	7	14.89	2.69
15 wpm.		9	3.46			2	3.85	.77	1	2.78	.38	0	0	0
20 wpm.		5	1.92			0	0	0	1	2.78	.38	1	2.13	.38
Other[c]		6	2.31			1	1.92	.38	0	0	0	2	4.26	.77
4. Letters, errors corr. 1 carbon, no envelopes	260			224	86.15									
10 wpm.		22	8.46			3	5.77	1.15	2	5.56	.77	6	12.77	2.31
15 wpm.		7	2.69			0	0	0	2	5.56	.77	0	0	0
20 wpm.		3	1.15			0	0	0	1	2.78	.38	0	0	0
Other[d]		4	1.54			0	0	0	0	0	0	1	2.13	.38

[a] 1 at 12 wpm.
1 at 20 wpm.
1 at 25 wpm.

[b] 5 at 8-12 wpm.
1 at 14 wpm.
1 at 19 wpm.
1 at 20 wpm.

[c] 4 at 9-11 wpm.
1 at 14 wpm.
1 at 19 wpm.

[d] 2 at 5-9 wpm.
2 at 19 wpm.

Read the table thus: For Item 1 above (10 wpm.), 11 teachers or 4.23% replied. Group replies are extended horizontally.

TABLE 53.--Continued.

Type of Transcript Grade Level D	Total Responses	Total				Group IV Resp.			Group V Resp.			Group VI Resp.		
		Number of Responses	Percent of Responses	Number of No Resp.	Percent of No Resp.	Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total
1. Straight copy dictation	260			220	84.62									
10 wpm.		11	4.23			2	6.90	.77	2	3.28	.77	2	5.71	.77
15 wpm.		14	5.38			2	6.90	.77	3	4.92	1.15	2	5.71	.77
20 wpm.		12	4.62			0	0	0	3	4.92	1.15	1	2.86	.38
Other[a]		3	1.15			1	3.45	.38	1	1.64	.38	1	2.86	.38
2. Letters, errors corr. no carbons, no env.	260			204	78.46									
10 wpm.		18	6.92			2	6.90	.77	4	6.56	1.54	1	2.86	.38
15 wpm.		20	7.69			3	10.34	1.15	5	8.20	1.92	1	2.86	.38
20 wpm.		10	3.85			3	10.34	1.15	2	3.28	.77	1	2.86	.38
Other[b]		8	3.08			0	0	0	1	1.64	.38	2	5.71	.77
3. Letters, errors corr. 1 carbon, 1 envelope	260			215	82.69									
10 wpm.		25	9.62			2	6.90	.77	8	13.11	3.08	3	8.57	1.15
15 wpm.		9	3.46			3	10.34	1.15	3	4.92	1.15	0	0	0
20 wpm.		5	1.92			1	3.45	.38	1	1.64	.38	1	2.86	.38
Other[c]		6	2.31			1	3.45	.38	0	0	0	2	5.71	.77
4. Letters, errors corr. 1 carbon, no envelopes	260			224	86.15									
10 wpm.		22	8.46			3	10.34	1.15	6	9.84	2.31	2	5.71	.77
15 wpm.		7	2.69			2	6.90	.77	2	3.28	.77	1	2.86	.38
20 wpm.		3	1.15			1	3.45	.38	1	1.64	.38	0	0	0
Other[d]		4	1.54			1	3.45	.38	0	0	0	2	5.71	.77

[a] 1 at 12 wpm.
1 at 20 wpm.
1 at 25 wpm.

[b] 5 at 8-12 wpm.
1 at 14 wpm.
1 at 19 wpm.
1 at 20 wpm.

[c] 4 at 9-11 wpm.
1 at 14 wpm.
1 at 19 wpm.

[d] 2 at 5-9 wpm.
2 at 19 wpm.

Read the table thus: For Item 1 above (10 wpm.), 11 teachers or 4.23% replied. Group replies are extended horizontally.

was based on transcription speed. There were 12, or 4.62 percent, who indicated a minimum speed level of 20 words per minute at the Grade D level.

There were 20 respondents, or 7.69 percent, who reported a minimum speed level of 15 words per minute for the transcription of letters with errors corrected, with no carbon copies or envelopes. There were 18, or 6.92 percent, who reported 10 words per minute for this category.

There were 25 respondents, or 9.62 percent, who indicated a minimum speed requirement of 10 words per minute for the transcription of letters with errors corrected, one carbon copy and one envelope.

There were 22 respondents, or 8.46 percent, who indicated a speed level requirement of 10 words per minute for the transcription of letters with errors corrected with one carbon copy and no envelopes.

There was a low percentage of replies regarding transcription speeds in producing various forms of mailable copy at the grade levels A, B, C, and D. Those who responded stated that speeds for the Grade A level for straight-copy dictation material ranged from 30 to 35 words per minute. When letters were transcribed with errors corrected, no carbon or envelope the speeds reported ranged from 25 to 30 words per minute. Letters transcribed with errors corrected, 1 carbon and 1 envelope were reported

at speeds ranging from 20 to 25 words per minute, and the same speed was reported for the transcription of letters, errors corrected, 1 carbon, no envelope at the Grade A level.

Speeds reported at the Grade B level for straight-copy materials ranged from 25 to 30 words per minute; for letters transcribed with errors corrected, 1 carbon and 1 envelope, 15 to 20 words per minute; and for letters transcribed with errors corrected, no carbon or envelope, 15 to 20 words per minute.

At the Grade C level the speed of transcription reported for straight-copy dictation material and letters with errors corrected, and no carbon or envelope was reported as ranging from 15 to 20 words per minute. Transcription speed of letters with errors corrected, 1 carbon copy and 1 envelope dropped to a range of 10 to 15 words per minute with the same speed reported for transcription of letters with errors corrected, 1 carbon, no envelopes.

Minimum transcription speeds were reported at the Grade D level for straight-copy materials, letters with errors corrected, no carbon or envelope; letters with errors corrected, 1 carbon, 1 envelope; and letters with errors corrected, 1 carbon and no envelope. Speeds ranged in respective order as follows: 15 to 20 words per minute, 10 to 15 words per minute, 10 words per minute,

and 10 words per minute. The lowest transcription speed mentioned was 5 words per minute for each of the above categories.

Teachers agree basically that speed of transcription is higher on straight-copy material than on letters requiring corrections, carbons and envelopes. In addition, they agree that there is a descending rank order for speed requirement at the various grade levels A, B, C, and D. Most teachers also agree that the minimum speed is ten words per minute at the Grade D level. However, there is no definite agreement on an absolute speed that is expected of a student for the various grade levels or types of transcribing activities. This can be accounted for because authorities agree that many factors are involved in transcription speed.

Instead of stressing speed of transcription Lamb suggested that the same objectives could be accomplished by grading the student on the number of letters she can produce within an hour by using the following scale:

Grade	Number of Letters
A	7 or more
A or B depending upon quality	6
B or C depending upon quality	5
C or D depending upon quality	4
D or F	3
F	Less than 3 letters

Specifications: 100 wpm
S.I. 1.4
mailable form
1 carbon & 1 envelope

One of the principal advantages of Lamb's[128] plan is in highlighting hourly production requirements, by which businessmen tend to gauge production.

Employers view production standards of stenographers from this aspect, as reported by a former president of the National Office Management Association:

> I believe that businessmen in general will be satisfied if they can depend upon the fact that the girls you send on the beginning vocational level can turn out an average of six acceptable letters an hour. Such a fact automatically tells us that these applicants can spell, punctuate, and type without too many errors. After office workers are associated with the firm for five or six months, their efficiency will naturally improve.[129]

Leslie discusses the speed of transcription and states that it is influenced by many factors: speed of dictation, length of original dictation, degree of mailability, accuracy required, student's skill in erasing, facility in finding and handling letterheads, use of carbon paper, second sheets, and envelopes, speed with which student solves his punctuation problems, number of

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[128]Lamb, op. cit., p. 216.

[129]Harm Harms, "A Workable Standard for Transcription," American Business Education (May, 1945), p. 174.

spellings that must be verified in the dictionary, length of uninterrupted transcription period, difficulty of the material, and the student's proofreading skill. He indicates that by varying one or more of the factors, startling changes in the transcription speed will be obtained. For instance, with a reduction in the speed of dictation there is an immediate increase in the speed of transcription, because better shorthand notes will result in more easily read shorthand; and, therefore, more accurate transcripts are completed. If the degree of accuracy is high, the transcription rate is low, because the student will be slowing down in order that she will not make mistakes. If the material is difficult, the transcription rate drops. If there is no need to punctuate carefully, the transcription rate is up.

In spite of this variation, Leslie,[130] however, recommended terminal speeds of 15 to 20 words per minute for a course consisting of 40 class periods and a speed of 20 to 25 words per minute for 80 class periods.

Hardaway comments on the rate of transcription in the high school classroom:

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[130]Leslie, op. cit., p. 187.

> Many teachers feel that a transcription rate of ten words a minute is too low a standard to use. In a nationwide study of hundreds of shorthand students who had completed their transcription training, it was found that the average transcription rate for students was 14 words a minute. In another part of the study it was found that employed stenographers had an average transcription rate of 15 words a minute. There is evidence that a high school standard of 20 words a minute is too high for the majority of students.[131]

Douglas and others also have determined a rate of transcription that they feel should be the standard:

> A transcription rate of twenty to twenty-five words a minute is generally considered an acceptable minimum production standard in transcription.[132]

Because of the divergence of opinion and the lack of unanimity among teachers and authorities, it is recommended that teachers establish their own standards. It is more important to consider all of the circumstances involved: the abilities of the student, policies of the business education department, and the needs of the community.

No Transcription Speed Required

Public high school teachers of transcription were asked to indicate whether any speed requirement was

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[131] Hardaway, op. cit., p. 297.

[132] Lloyd V. Douglas, James T. Blanford, and Ruth I. Anderson, Teaching Business Subjects (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1965), p. 252.

necessary when a portion of the final grade was based on transcription speed. Table 54 presents data concerning this information.

An analysis of Table 54 shows that 53 respondents, or 20.38 percent, indicated that they required no particular speed in transcribing materials for the transcription class. There were 207, or 79.62 percent, who did not respond to the question.

A number of teachers did not have a speed requirement in transcription classes. This is in line with Lamb[133] who continually emphasizes "mailable transcripts consistently produced within a reasonable time at first writing."

Types of Transcription Used Most Frequently When Transcription Speed is a Component of the Final Grade in Transcription

Public high school teachers of transcription were asked to indicate the types of transcription used most frequently when transcription speed was used as a basis for the final grade. More than one item could be checked. Table 55 presents data concerning types of transcription.

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[133]Lamb, op. cit., p. 210.

TABLE 54.--No transcription speed requirement as reported by public high school teachers of transcription when a portion of the final grade is based on transcription speed

Reply Given	Total		Group I			Group II			Group III		
	Number of Responses	Percent of Responses	Responses			Responses			Responses		
			Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total
1. No particular speed required	53	20.38	11	21.15	4.23	4	11.11	1.54	9	19.15	3.46
2. No response to question	207	79.62	41	78.85	15.77	32	88.89	12.31	38	80.85	14.62
Total	260	100.00	52		20.00	36		13.85	47		18.08

Read the table thus: For Item 1 above there were 53 teachers who responded, representing 20.38% of the total of 260 questionnaires tabulated, 207 teachers representing 79.62% of the total respondents did not reply to this question. Replies were distributed numerically and percentage-wise in Groups I-VI.

TABLE 54.--Continued.

Reply Given	Total		Group IV			Group V			Group VI		
	Number of Responses	Percent of Responses	Responses Number	Responses Percent of Group	Responses Percent of Total	Responses Number	Responses Percent of Group	Responses Percent of Total	Responses Number	Responses Percent of Group	Responses Percent of Total
1. No particular speed required	53	20.38	6	20.69	2.31	12	19.67	4.62	11	31.43	4.23
2. No response to question	207	79.62	23	79.31	8.85	49	80.33	18.85	24	68.57	9.23
Total	260	100.00	29		11.15	61		23.46	35		13.46

Read the table thus: For Item 1 above there were 53 teachers who responded, representing 20.38% of the total of 260 questionnaires tabulated. 207 teachers representing 79.62% of the total respondents did not reply to this question. Replies were distributed numerically and percentage-wise in Groups I-VI.

TABLE 55.--Types of transcription used most frequently by public high school teachers of transcription using transcription speed as a basis for the final grade

Types of Transcription	Total Responses	Total				Group I			Group II			Group III		
		Number of Responses	Percent of Responses	Number of No Responses	Percent of No Responses	Responses			Responses			Responses		
						Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total
1. Transcription of straight-copy dictation	260	47	18.08	213	81.92	6	11.54	2.31	6	16.67	2.31	11	23.40	4.23
2. Transcription of letters with errors corrected, no carbon or envelopes	260	76	29.46	182	70.54	17	33.33	6.59	12	33.33	4.65	16	34.04	6.20
3. Transcription of letters with errors corrected, one carbon, no envelopes	260	39	15.00	221	85.00	8	15.38	8.08	5	13.89	1.92	5	10.64	1.92
4. Transcription of letters with errors corrected, one carbon and envelopes	260	72	27.69	182	72.31	16	30.77	6.15	16	44.44	6.15	8	17.02	3.08
5. Other[a]	260	7	2.69	253	97.31	2	3.85	.77	1	2.78	.38	1	2.13	.38

[a]3 reported using a combination of straight-copy and letters with carbon--alternating weekly; 3 reported using manuscripts, memos, and miscellaneous materials; 1 reported letters with carbon packs--3 or more plus envelopes.

Read the table thus: For Item 1 above there were 47 teachers who responded, representing 18.08% of the total 260 questionnaires tabulated and 213 teachers representing 81.92% of the total respondents who did not reply to this item. Replies were distributed numerically and percentage-wise in Groups I-VI.

TABLE 55.--Continued.

Types of Transcription	Total Responses	Total: Number of Responses	Total: Percent of Responses	Total: Number of No Responses	Total: Percent of No Responses	Group IV: Responses Number	Group IV: Responses Percent of Group	Group IV: Responses Percent of Total	Group V: Responses Number	Group V: Responses Percent of Group	Group V: Responses Percent of Total	Group VI: Responses Number	Group VI: Responses Percent of Group	Group VI: Responses Percent of Total
1. Transcription of straight-copy dictation	260	47	18.08	213	81.92	4	13.79	1.54	12	19.67	4.62	8	22.86	3.08
2. Transcription of letters with errors corrected, no carbon, or envelopes	260	76	29.46	182	70.54	8	27.59	3.10	15	25.00	5.81	8	22.86	3.10
3. Transcription of letters with errors corrected, one carbon, no envelopes	260	39	15.00	221	85.00	5	17.24	1.92	11	18.03	4.23	5	14.29	1.92
4. Transcription of letters with errors corrected, one carbon and envelopes	260	72	27.69	182	72.31	11	37.93	4.23	11	18.03	4.23	10	28.57	3.85
5. Other[a]	260	7	2.69	253	97.31	0	0	0	3	4.92	1.15	0	0	0

[a]3 reported using a combination of straight-copy and letters with carbon--alternating weekly; 3 reported using manuscripts, memos, and miscellaneous materials; 1 reported letters with carbon packs--3 or more plus envelopes.

Read the table thus: For Item 1 above there were 47 teachers who responded, representing 18.08% of the total 260 questionnaires tabulated and 213 teachers representing 81.92% of the total respondents who did not reply to this item. Replies were distributed numerically and percentage-wise in Groups I-VI.

An analysis of Table 55 shows that 76 respondents, or 29.46 percent, stated that they used the transcription of letters with errors corrected, with no carbon copy or envelope for testing purposes.

There were 72 respondents, or 27.69 percent, who indicated that they used the transcription of letters with errors corrected, with one carbon copy and envelope.

There were 47, or 18.08 percent, who used the transcription of straight-copy dictation materials in transcription classes for testing purposes.

There were also 39, or 15 percent, who used the transcription of letters with errors corrected, with one carbon but no envelope.

There were 7, or 2.69 percent, who reported using a combination of straight-copy and letters with carbons and alternating these processes weekly, together with manuscripts, memos, and miscellaneous materials.

Most of the teachers required letters transcribed with errors corrected, without a carbon copy or envelope, for testing purposes. However, another group which was equally as large required letters transcribed with errors with a carbon copy and envelope.

Leslie[134] recommends using carbons for letters transcribed "as early in the transcription training as

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[134]Leslie, op. cit., p. 147.

possible." He emphasizes that students cannot get too much experience with handling carbon paper and envelopes.

It is recommended, therefore, that as soon as straight-copy dictation transcription has been routinized at the beginning stages of transcription training, there should be an emphasis on the use of carbon paper for producing copies of letters transcribed. As a result, much of the testing conducted in the classroom should include this exercise, in order that the classroom consists of as many office-like situations as possible.

Dictation Speed Required for Letters When a Portion of the Final Grade is Based on Amount of Production of Mailable Copy

Public high school teachers of transcription were asked to indicate the dictation speeds of letters included in the amount of production, if a portion of the final grade for a student in transcription is based on the amount of production of mailable copy, for the various grade levels. Only one item could be checked for each grade level. Table 56 presents data concerning dictation speeds.

An analysis of Table 56 shows that 31, or 11.92 percent, stated that at the Grade A level they required a dictation speed of 120 words per minute for letters dictated for production when a portion of the grade in

TABLE 56.--Dictation speeds of letters included in the amount of production if a portion of the final grade for a student in transcription class is based on the amount of production of mailable copy for the various grade levels as reported by public high school teachers of transcription

Grade Levels and Dictation Speeds	Total Responses	Total				Group I Resp.			Group II Resp.			Group III Resp.		
		Number of Responses	Percent of Responses	Number of No Resp.	Percent of No Resp.	Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total
1. Grade A	260			136	52.31									
Untimed		30	11.54			9	17.31	3.46	2	5.56	.77	5	10.64	1.92
120 wpm.		31	11.92			3	5.77	1.15	5	13.89	1.92	6	12.77	2.31
110 wpm.		9	3.46			1	1.92	.38	0	0	0	1	2.13	.38
100 wpm.		30	11.54			7	13.46	2.69	4	11.11	1.54	7	14.89	2.69
Other[a]		24	9.23			6	11.54	2.31	4	11.11	1.54	5	10.64	1.92
2. Grade B	260			135	51.92									
Untimed		30	11.54			9	17.31	3.46	2	5.56	.77	5	10.64	1.92
110 wpm.		15	5.77			0	0	0	4	11.11	1.54	3	6.38	1.15
100 wpm.		25	9.62			4	7.69	1.54	1	2.78	.38	4	8.51	1.54
90 wpm.		27	10.38			6	11.54	2.31	3	8.33	1.15	5	10.64	1.92
Other[b]		28	10.77			6	11.54	2.31	6	16.67	2.31	7	14.89	2.69
3. Grade C	260			136	52.31									
Untimed		31	11.92			9	17.31	3.46	2	5.56	.77	5	10.64	1.92
100 wpm.		15	5.77			0	0	0	3	8.33	1.15	4	8.51	1.54
90 wpm.		17	6.54			3	5.77	1.15	0	0	0	4	8.51	1.54
80 wpm.		39	15.00			8	15.38	3.08	6	16.67	2.31	6	12.77	2.31
Other[c]		22	8.46			5	9.62	1.92	4	11.11	1.54	5	10.64	1.92
4. Grade D	260			151	58.07									
Untimed		33	12.69			10	19.61	3.88	2	5.56	.78	5	10.87	1.94
90 wpm.		12	4.62			1	1.96	.39	3	8.33	1.16	3	6.52	1.16
80 wpm.		27	10.38			3	5.88	1.16	1	2.78	.39	8	17.39	3.10
Other[d]		37	14.24			5	9.80	1.94	8	22.22	3.10	7	15.22	2.71

[a] 8 at 80 wpm; 2 at 140 wpm; 4 at 90 wpm; 6 rpt. class varies; 4 rpt. point system of mailability.

[b] 13 at 80 wpm; 4 at 120 wpm; 1 at 70 wpm; 6 rpt. class varies; 4 rpt. point system of mailability.

[c] 5 at 60 wpm; 5 at 70 wpm; 1 at 100 wpm; 1 at 120 wpm; 6 rpt. class varies; 4 rpt. point system of mailability.

[d] 9 at 60 wpm; 12 at 70 wpm; 3 at 50 wpm; 1 at 100 wpm; 1 at 120 wpm; 4 rpt. point system mailability; 7 rpt. varies according to class.

Read the table thus: For Item 1 above 30 teachers replied or 11.54%. Group replies are extended horizontally.

TABLE 56.--Continued.

Grade Levels and Dictation Speeds	Total Responses	Total				Group IV Resp.			Group V Resp.			Group VI Resp.		
		Number of Responses	Percent of Responses	Number of No Resp.	Percent of No Resp.	Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total
1. Grade A	260			136	52.31									
Untimed		30	11.54			4	13.79	1.54	7	11.48	2.69	3	8.57	1.15
120 wpm.		31	11.92			6	20.69	2.31	5	8.20	1.92	6	17.14	2.31
110 wpm.		9	3.46			2	6.90	.77	3	4.92	1.15	2	5.71	.77
100 wpm.		30	11.54			2	6.90	.77	9	14.75	3.46	1	2.86	.38
Other[a]		24	9.23			1	3.46	.38	6	9.84	2.31	2	5.71	.77
2. Grade B	260			135	51.92									
Untimed		30	11.54			4	13.79	1.54	7	11.48	2.69	3	8.57	1.15
110 wpm.		15	5.77			2	6.90	.77	4	6.56	1.54	2	5.71	.77
100 wpm.		25	9.62			5	17.24	1.92	6	9.84	2.31	5	14.29	1.92
90 wpm.		27	10.38			3	10.34	1.15	8	13.11	3.08	2	5.71	.77
Other[b]		28	10.77			1	3.45	.38	6	9.84	2.31	2	5.71	.77
3. Grade C	260			136	52.31									
Untimed		31	11.92			4	13.79	1.54	8	13.11	3.08	3	8.57	1.15
100 wpm.		15	5.77			2	6.90	.77	4	6.56	1.54	2	5.71	.77
90 wpm.		17	6.54			4	13.79	1.54	4	6.56	1.54	2	5.71	.77
80 wpm.		39	15.00			5	17.24	1.92	9	14.75	3.46	5	14.29	1.92
Other[c]		22	8.46			0	0	0	6	9.84	2.31	2	5.71	.77
4. Grade D	260			151	58.07									
Untimed		33	12.69			4	13.79	1.55	8	13.11	3.10	4	11.43	1.55
90 wpm.		12	4.62			2	6.90	.78	2	3.28	.78	1	2.86	.39
80 wpm.		27	10.38			7	25.14	2.71	5	8.20	1.94	3	8.57	1.16
Other[d]		37	14.24			2	6.90	.78	12	19.67	4.65	3	8.57	1.16

[a] 8 at 80 wpm; 2 at 140 wpm; 4 at 90 wpm; 6 rpt. class varies; 4 rpt. point system of mailability.

[b] 13 at 80 wpm; 4 at 120 wpm; 1 at 70 wpm; 6 rpt. class varies; 4 rpt. point system of mailability.

[c] 5 at 60 wpm; 5 at 70 wpm; 1 at 100 wpm; 1 at 120 wpm; 6 rpt. class varies; 4 rpt. point system of mailability.

[d] 9 at 60 wpm; 12 at 70 wpm; 3 at 50 wpm; 1 at 100 wpm; 1 at 120 wpm; 4 rpt. point system mailability; 7 rpt. varies according to class.

Read the table thus: For Item 1 above 30 teachers replied or 11.54%. Group replies are extended horizontally.

transcription was based on the amount of production. There were 30 respondents, or 11.54 percent, who indicated that their dictation was untimed; and 30, or 11.54 percent, who indicated that the dictation speed was 100 words per minute for dictation speeds of letters for production.

At the Grade B level 30 respondents, or 11.54 percent, indicated that their dictation speed was untimed when dictating letters for production. In addition there were 27, or 10.38 percent, who indicated 90 words per minute as their speed and 25, or 9.62 percent, who indicated 100 words per minute. There were 28, or 10.77 percent, who indicated other levels.

At the Grade C level 39 respondents, or 15 percent, indicated that their dictation speed was at the rate of 80 words per minute; and 31, or 11.92 percent, indicated their dictation speed was untimed.

At the Grade D level there were 33, or 12.79 percent, who indicated that their dictation was at various speeds when letters were dictated for production.

The purpose of this question was to ascertain the terminal dictation speeds that teachers expect at various grade levels when a specified quantity of mailable or correctible correspondence has been completed by the students. For the A grade, teachers required 100 words per minute, 120 words per minute, or no timing. (The term

"no timing" usually means that the teacher is stressing accuracy to such an extent that she dictates only at moderate rates of speeds to insure that the student writes legible notes.) For a grade of B, teachers required 80 words per minute, 100 words per minute, or no timing. For a C grade most teachers indicated 80 words per minute followed by no timing; while at the D grade, there were a variety of responses ranging from 80 words per minute and less, plus no timing.

Lamb[135] recommends that the dictation rate should be within the ability of the majority of the members of the class when the objective of the evaluation is a mailable copy. Therefore, average rates or varied rates of dictation speed should be used in order to permit each student to produce at least one letter during the period allowed for transcription. It is important that each student experience some degree of success during each class period.

Shorthand Speeds Required at Various Grade Levels When a Portion of the Final Grade is Based on Shorthand Speed

Public high school teachers of transcription were asked to indicate the various shorthand writing speeds

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[135]Lamb, op. cit., p. 205.

required (at the 95 percent accuracy level) of students for the various grade levels when a portion of the final grade is based on shorthand speed. Only one item could be checked under each grade category. Table 57 presents data concerning writing speeds.

An analysis of Table 57 shows that 110 respondents, or 42.31 percent, indicated that 120 words per minute was the speed requirement for the A Grade level. An additional 34, or 13.08 percent, listed speeds ranging from 80 to 100 words per minute as their speed requirement. All of the six groups showed high percentages at the 120 words per minute level for the grade of A.

There were 70 respondents, or 26.92 percent, and 61, or 23.46 percent, who reported speeds of 100 words per minute and 110 words per minute, respectively, as their speed requirement for the Grade B level.

The speed requirements reported for the C grade level were reported as follows: 61 repondents, or 23.46 percent, requiring 100 words per minute; 45, or 17.31 percent, requiring 80 words per minute; and 42, or 16.15 percent, requiring 90 words per minute.

At the D grade level, 60, or 23.08 percent, reported 80 words per minute as their minimum requirement. There were an additional 30 respondents who reported 90 words per minute as their minimum requirement.

TABLE 57.--Shorthand writing speeds required (at the 95% accuracy level) of students for the various grade levels when a portion of the final grade is based on shorthand speed as reported by public high school teachers of transcription

Shorthand Writing Speed and Grade Level	Total Responses	Total				Group I Resp.			Group II Resp.			Group III Resp.		
		Number of Responses	Percent of Responses	Number of No Resp.	Percent of No Resp.	Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total
1. Grade A	260			95	36.54									
140 wpm.		8	3.08			2	3.85	.77	0	0	0	3	6.38	1.15
130 wpm.		7	2.69			0	0	0	1	2.78	.38	1	2.13	.38
120 wpm.		110	42.31			21	40.38	8.08	12	33.33	4.62	20	42.55	7.69
Other[a]		34	13.08			7	13.46	2.69	8	22.22	3.08	4	8.51	1.54
No rate		6	2.30			0	0	0	2	5.56	.77	2	4.26	.77
2. Grade B	260			96	36.92									
120 wpm.		8	3.08			0	0	0	0	0	0	4	8.51	1.54
110 wpm.		61	23.46			16	30.77	6.15	5	13.89	1.92	9	19.15	3.46
100 wpm.		70	26.92			10	19.23	3.85	11	30.56	4.23	12	25.53	4.62
Other[b]		19	7.31			4	7.69	1.54	4	11.11	1.54	2	4.26	.77
No rate		6	2.31			0	0	0	2	5.56	.77	2	4.26	.77
3. Grade C	260			96	36.92									
100 wpm.		61	23.46			14	26.92	5.38	4	11.11	1.54	13	27.66	5.00
90 wpm.		42	16.15			5	9.62	1.92	7	19.44	2.69	6	12.77	2.31
80 wpm.		45	17.31			8	15.38	3.08	8	22.22	3.08	7	14.89	2.69
Other[c]		10	3.85			3	5.77	1.15	1	2.78	.38	1	2.13	.38
No rate		6	2.31			0	0	0	2	5.56	.77	2	4.26	.77
4. Grade D	260			110	42.30									
80 wpm.		60	23.08			14	26.92	5.38	5	13.89	1.92	10	21.28	3.85
70 wpm.		24	9.23			1	1.92	.38	5	13.89	1.92	5	10.64	1.92
60 wpm.		17	6.54			4	7.69	1.54	4	11.11	1.54	4	8.51	1.54
Other[d]		41	15.77			8	15.38	3.08	4	11.11	1.54	6	12.77	2.31
No rate		8	3.08			0	0	0	2	5.56	.77	3	6.38	1.15

[a]21 at 100 wpm; 9 at 110 wpm; 2 at 90 wpm; 2 at 80 wpm.

[b]8 at 90 wpm; 8 at 80 wpm; 2 at 100 wpm; 1 at 130 wpm.

[c]8 at 90 wpm; 1 at 70 wpm; 1 at 60 wpm.

[d]30 at 90 wpm; 9 at 100 wpm; 2 at 50 wpm.

Read the table thus: For Item 1 above 8 teachers replied or 3.08%. Group replies are extended horizontally.

TABLE 57.--Continued.

Shorthand Writing Speed and Grade Level	Total Responses	Total				Group IV Resp.			Group V Resp.			Group VI Resp.		
		Number of Responses	Percent of Responses	Number of No Resp.	Percent of No Resp.	Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total
1. Grade A	260			95	36.54									
140 wpm.		8	3.08			2	6.90	.77	0	0	0	1	2.86	.38
130 wpm.		7	2.69			1	3.45	.38	3	4.92	1.15	1	2.86	.38
120 wpm.		110	42.31			14	48.28	5.38	26	42.62	10.00	17	48.57	6.54
Other[a]		34	13.08			3	10.34	1.15	10	16.39	3.85	2	5.71	.77
No rate		6	2.30			0	0	0	1	1.64	.38	1	2.86	.38
2. Grade B	260			96	36.92									
120 wpm.		8	3.08			1	3.45	.38	2	3.28	.77	1	2.86	.38
110 wpm.		61	23.46			8	27.59	3.08	14	22.95	5.38	9	25.71	3.46
100 wpm.		70	26.92			9	31.03	3.46	18	29.5[illegible]	6.92	10	[illegible]8.57	3.85
Other[b]		19	7.31			2	6.90	.77	6	9.8[illegible]	2.31	1	2.86	.38
No rate		6	2.31			0	0	0	1	1.64	.38	1	2.86	.38
3. Grade C	260			96	36.92									
100 wpm.		61	23.46			7	24.14	2.69	13	21.31	5.00	10	28.57	3.85
90 wpm.		42	16.15			7	24.14	2.69	13	21.31	5.00	4	11.43	1.54
80 wpm.		45	17.31			4	13.79	1.54	12	19.67	4.62	6	17.14	2.31
Other[c]		10	3.85			2	6.90	.77	2	3.28	.77	1	2.86	.38
No rate		6	2.31			0	0	0	1	1.64	.38	1	2.86	.38
4. Grade D	260			110	42.30									
80 wpm.		60	23.08			11	37.93	4.23	15	24.59	5.77	5	14.29	1.92
70 wpm.		24	9.23			3	10.34	1.15	8	13.11	3.08	2	5.71	.77
60 wpm.		17	6.54			0	0	0	2	3.28	.77	3	8.56	1.15
Other[d]		41	15.77			5	17.24	1.92	9	14.75	3.46	9	25.71	3.46
No rate		8	3.08			0	0	0	1	1.64	.38	2	5.71	.77

[a] 21 at 100 wpm; 9 at 110 wpm; 2 at 90 wpm; 2 at 80 wpm.

[b] 8 at 90 wpm; 8 at 80 wpm; 2 at 100 wpm; 1 at 130 wpm.

[c] 8 at 90 wpm; 1 at 70 wpm; 1 at 60 wpm.

[d] 30 at 90 wpm; 9 at 100 wpm; 2 at 50 wpm.

Read the table thus: For Item 1 above 8 teachers replied or 3.08%. Group replies are extended horizontally.

Shorthand speeds for the various grade levels are as follows: A grade, 120 words per minute; B grade, 100 and 110 words per minute; C grade, 100, 80, and 90 words per minute; and D grade, 80 and 90 words per minute.

Speed levels mentioned by Popham are somewhat higher. She states:

> . . . transcribe three five minute 120 word tests, with 95 percent accuracy for A. Transcribe one 120 word test and two 100 word tests with 95 percent accuracy for B. Transcribe three 100 word tests for C. . . .[136]

Length of Time Shorthand Dictation Speed Must Be Maintained

Public high school teachers of transcription were asked to indicate the length of time over which the shorthand speed reported (at the 95 percent accuracy level) must be maintained in a transcription class for the various grade levels, when a portion of the final grade is based on shorthand speed. Only one item could be checked. Table 58 presents data concerning length of time speed must be maintained.

An analysis of Table 58 shows that at the Grade A level, 80 respondents, or 30.77 percent, reported that three minutes was the length of time over which the shorthand speed must be maintained; and 69, or 26.54 percent,

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[136]Lamb, op. cit., p. 197.

TABLE 58.--Length of time over which shorthand writing speeds required (at the 95% accuracy level) must be maintained by students for the various grade levels when a portion of the final grade is based on shorthand speed as reported by public high school teachers of transcription

Length of Time and Grade Levels	Total Responses	Total				Group I			Group II Resp.			Group III Resp.		
		Number of Responses	Percent of Responses	Number of No Response	Percent of No Response	Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total
1. Grade A	260			103	39.62									
1 min.		2	.77			0	0	0	1	2.78	.38	1	2.13	.38
3 min.		80	30.77			13	25.00	5.00	9	25.00	3.46	13	27.66	5.00
5 min.		69	26.54			15	28.85	5.77	10	27.78	3.85	13	27.66	5.00
Other[a]		6	2.30			2	3.85	.77	0	0	0	1	2.13	.38
2. Grade B	260			103	39.62									
1 min.		1	.38			0	0	0	0	0	0	1	2.13	.38
3 min.		72	27.69			13	25.00	5.00	9	25.00	3.46	8	17.02	3.08
5 min.		78	30.00			15	28.85	5.77	11	30.56	4.23	18	38.30	6.92
Other[b]		6	2.31			2	3.85	.77	0	0	0	1	2.13	.38
3. Grade C	260			102	39.23									
1 min.		2	.77			0	0	0	0	0	0	2	4.26	.77
3 min.		72	27.69			11	21.15	4.23	9	25.00	3.46	8	17.02	3.08
5 min.		78	30.00			17	32.69	5.43	10	27.78	3.85	18	38.30	6.92
Other[c]		6	2.31			2	3.85	.77	1	2.78	.38	0	0	0
4. Grade D	260			109	41.92									
1 min.		3	1.15			1	1.92	.38	0	0	0	2	4.26	.77
3 min.		68	26.15			12	23.08	4.62	9	25.00	3.46	8	17.02	3.08
5 min.		72	27.69			13	25.00	5.00	10	27.78	3.85	18	38.30	6.92
Other[d]		8	3.08			2	3.85	.77	1	2.78	.38	0	0	0

[a] 4 rep. 2 min; 1 rep. 1 1/2 min; 1 rep. enough time to finish transcript.

[b] 4 rep. 2 min; 1 rep. 1 1/2 finish transcript.

[c] 4 rep. 2 min; 1 rep. 1 1 min; 1 rep. enough time finish transcript.

[d] 4 rep. 2 min; 2 rep. as much time as necessary.

Read the table thus: For Item 1 above (1 min.) 2 teachers, or .77%, replied. Group replies were extended horizontally.

TABLE 58.--Continued.

Length of Time and Grade Levels	Total Responses	Total: Number of Responses	Total: Percent of Responses	Total: Number of No Responses	Total: Percent of No Responses	Group IV Resp.: Number	Group IV Resp.: Percent of Group	Group IV Resp.: Percent of Total	Group V Resp.: Number	Group V Resp.: Percent of Group	Group V Resp.: Percent of Total	Group VI Resp.: Number	Group VI Resp.: Percent of Group	Group VI Resp.: Percent of Total
1. Grade A	260			103	39.62									
1 min.		2	.77			0	0	0	0	0	0	0	0	0
3 min.		80	30.77			12	41.38	4.62	22	36.07	8.46	11	31.43	4.23
5 min.		69	26.54			5	17.24	1.92	16	26.23	6.15	10	28.57	3.85
Other[a]		6	2.30			0	0	0	2	3.28	.77	1	2.86	.38
2. Grade B	260			103	39.62									
1 min.		1	.38			0	0	0	0	0	0	0	0	0
3 min.		72	27.69			12	41.38	4.62	19	31.15	7.31	11	31.43	4.23
5 min.		78	30.00			5	17.24	1.92	19	31.15	7.31	10	28.57	3.85
Other[b]		6	2.31			0	0	0	2	3.28	.77	1	2.86	.38
3. Grade C	260			102	39.23									
1 min.		2	.77			0	0	0	0	0	0	0	0	0
3 min.		72	27.69			12	41.38	4.62	19	31.15	7.31	13	37.14	5.00
5 min.		78	30.00			6	20.69	2.31	19	31.15	7.31	8	22.86	3.08
Other[c]		6	2.31			0	0	0	2	3.28	.77	1	2.86	.38
4. Grade D	260			109	41.92									
1 min.		3	1.15			0	0	0	0	0	0	0	0	0
3 min.		68	26.15			12	41.38	4.62	15	24.59	5.77	12	34.29	4.62
5 min.		72	27.69			6	20.69	2.31	18	29.51	6.92	7	20.00	2.69
Other[d]		8	3.08			0	0	0	2	3.28	.77	3	8.57	1.15

[a] 4 rep. 2 min; 1 rep. 1 1/2 min; 1 rep. enough time to finish transcript.

[b] 4 rep. 2 min; 1 rep. 1 1/2 finish transcript.

[c] 4 rep. 2 min; 1 rep. 1 1/2 min; 1 rep. enough time to finish transcript.

[d] 4 rep. 2 min; 2 rep. as much time as necessary.

Read the table thus: For Item 1 above (1 min.) 2 teachers, or .77%, replied. Group replies were extended horizontally.

reported that five minutes was the length of time allowed.

At the Grade B level there were 78, or 30 percent, who listed five minutes as their minimum length of time; and 72, or 27.69 percent, who listed three minutes as their minimum length of time.

The same percentages were given for the Grade C level as reported for the Grade B level.

At the Grade D level there were 72, or 27.69 percent, who reported five minutes and 68, or 26.15 percent, who reported three minutes as the minimum length of time for maintaining a shorthand speed when a portion of the final grade is based on shorthand speed.

It is clear that transcription teachers are using proper timing periods of three and five minutes and are in agreement with authorities who prepare testing materials for the Business Teacher magazine, used by the majority of the teachers.

Teachers are also in agreement with the majority of Civil Service testing commissions who administer shorthand dictation tests which are three minutes in length.

Number of Times Shorthand Speed Must Be Performed

Public high school teachers of transcription were asked to indicate the number of times that shorthand speeds (at the 95 percent accuracy level) must be

performed by students at the various grade levels, when a portion of the final grade is based on shorthand speed. Only one item could be checked. Table 59 presents data concerning performance times.

An analysis of Table 59 shows that 57 respondents, or 21.92 percent, indicated that students must demonstrate shorthand writing speeds three times at the Grade A level. There were 51 respondents, or 19.62 percent, who listed two times as their requirement.

At the Grade B level there were 59, or 22.69 percent, who indicated three times, and 51, or 19.62 percent, who indicated two times as their requirement.

At the Grade C level there were 58, or 22.31 percent, who indicated three times and 49, or 18.85 percent, who reported two times as their requirement.

At the Grade D level there were 53, or 20.38 percent, who listed three times and 42, or 16.15 percent, reporting two times as their requirement. There were 30, or 11.54 percent, who required only one demonstration of the speed requirement.

Over 65 percent of the teachers grading on the basis of shorthand speed at the 95 percent accuracy level for the transcription course, indicated the following speeds for the various grade levels: A grade, 120 words per minute; B grade, 100 to 110 words per minute; C grade,

TABLE 59.--Number of times shorthand writing speeds required (at the 95% accuracy level) must be performed by students for the various grade levels when a portion of the final grade is based on shorthand speed as reported by public high school teachers of transcription

Times Performed and Grade Levels	Total Responses	Total				Group I Resp.			Group II Resp.			Group III Resp.		
		Number of Responses	Percent of Responses	Number of No Responses	Percent of No Responses	Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total
1. Grade A	260			109	41.92									
Once		27	10.38			6	11.54	2.31	6	16.67	2.31	4	8.51	1.54
Twice		51	19.62			9	17.31	3.46	4	11.11	1.54	7	14.89	2.69
Three times		57	21.92			12	23.08	4.62	4	11.11	1.54	15	31.91	5.77
Other[a]		16	6.15			3	5.77	1.15	3	8.33	1.15	2	4.26	.77
2. Grade B	260			109	41.92									
Once		25	9.62			5	9.62	1.92	6	16.67	2.31	4	8.51	1.54
Twice		51	19.62			9	17.31	3.46	4	11.11	1.54	6	12.77	2.31
Three times		59	22.69			13	25.00	5.00	4	11.11	1.54	16	34.04	6.15
Other[b]		16	6.15			3	5.77	1.15	3	8.33	1.15	2	4.26	.77
3. Grade C	260			110	42.31									
Once		26	10.00			5	9.62	1.92	6	16.67	2.31	5	10.64	1.92
Twice		49	18.85			9	17.31	3.46	3	8.33	1.15	6	12.77	2.31
Three times		58	22.31			12	23.08	4.62	5	13.89	1.92	15	31.91	5.77
Other[c]		17	6.54			4	7.69	1.54	2	5.56	.77	2	4.26	.77
4. Grade D	260			116	44.62									
Once		30	11.54			5	9.62	1.92	6	16.67	2.31	5	10.64	1.92
Twice		42	16.15			9	17.31	3.46	3	8.33	1.15	5	10.64	1.92
Three times		53	20.38			10	19.23	3.85	4	11.11	1.54	16	34.04	6.15
Other[d]		19	7.31			4	7.69	1.54	3	8.33	1.15	2	4.26	.77

[a] 9 reported 5 to 6 times; 7 reported as much as possible.

[b] 9 reported 5 to 6 times; 7 reported as much as possible.

[c] 9 reported 5 to 6 times; 8 reported as much as possible.

[d] 9 reported 5 to 6 times; 10 reported as much as possible according to ability.

Read the table thus: For Item 1 above (Once) 27 teachers, or 10.48%, replied. Group replies were extended horizontally.

TABLE 59.--Continued.

Times Performed and Grade Levels	Total Responses	Total				Group IV Resp.			Group V Resp.			Group VI Resp.		
		Number of Responses	Percent of Responses	Number of No Responses	Percent of No Responses	Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total
1. Grade A	260			109	41.92									
Once		27	10.38			2	6.90	.77	7	11.48	2.69	2	5.71	.77
Twice		51	19.62			5	17.24	1.92	14	22.95	5.38	12	34.29	4.62
Three times		57	21.92			8	27.59	3.08	3	21.31	5.00	5	14.29	1.92
Other[a]		16	6.15			2	6.90	.77	3	4.92	1.15	3	8.57	1.15
2. Grade B	260			109	41.92									
Once		25	9.62			2	6.90	.77	6	9.84	2.31	2	5.71	.77
Twice		51	19.62			5	17.24	1.92	15	24.59	5.77	12	34.29	4.62
Three times		59	22.69			8	27.59	3.08	13	21.31	5.00	5	14.29	1.92
Other[b]		16	6.15			2	6.90	.77	3	4.92	1.15	3	8.57	1.15
3. Grade C	260			110	42.31									
Once		26	10.00			2	6.90	.77	6	9.84	2.31	2	5.71	.77
Twice		49	18.85			5	17.24	1.92	14	22.95	5.38	12	34.29	4.62
Three times		58	22.31			8	27.59	3.08	14	22.95	5.38	4	11.43	1.54
Other[c]		17	6.54			2	6.90	.77	3	4.92	1.15	4	11.43	1.54
4. Grade D	260			116	44.62									
Once		30	11.54			2	6.90	.77	9	14.75	3.46	3	8.57	1.15
Twice		42	16.15			5	7.24	1.92	10	16.39	3.85	10	28.57	3.85
Three times		53	20.38			8	27.59	3.08	11	18.03	4.23	4	11.43	1.54
Other[d]		19	7.31			2	6.90	.77	3	4.92	1.15	5	14.29	1.92

[a] 9 reported 5 to 6 times; 7 reported as much as possible.

[b] 9 reported 5 to 6 times; 7 reported as much as possible.

[c] 9 reported 5 to 6 times; 8 reported as much as possible.

[d] 9 reported 5 to 6 times; 10 reported as much as possible according to ability.

Read the table thus: For Item 1 above (Once) 27 teachers, or 10.48%, replied. Group replies were extended horizontally.

80, 90, and 100 words per minute; and D grade, 80 and 90 words per minute. Although there were slight variations in speed requirements given by transcription teachers in comparison with shorthand teachers, they were basically the same.

At all grade levels the speed performance times mentioned most frequently were two and three times which is in line with authorities' recommendations. By having the student demonstrate shorthand speed performance two or three times, the teacher is fairly certain that the student actually has the skill necessary to pass a test at the particular rate of speed before going on to the next level. Douglas, Blanford, and Anderson comment on performance times:

> Some teachers require their students to pass three tests at each level. This plan helps prevent plateaus in shorthand progress. Every shorthand teacher knows that dictation tests vary in difficulty regardless of the standard word count. . . . When students are permitted to try the next speed as soon as they pass one test, they may have considerable difficulty passing the next speed level. Often the trouble is the result of going on to the next level before they had sufficient skill to do so.[137]

Length of dictation time for all grade levels was reported to be three and five minutes with an equal number of replies for each. By allowing shorter periods of time, such as three minutes, higher speeds can be attained

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[137]Douglas, et al., op. cit., p. 222.

whereas the five-minute period of dictation means sustained speed at a lower level.

It is recommended that teachers continue to use the shorthand speed component as a part of their grading in the transcription course, but that major emphasis be placed on the concept of mailability.

Higher Accuracy Levels When Shorthand Speed is Component of Transcription Grade

Public high school teachers of transcription were asked to indicate whether they required higher accuracy levels (above 95 percent) when the component shorthand speed was used as a portion of the final grade in transcription. Only one item could be checked. Table 60 presents data concerning accuracy levels.

An analysis of Table 60 shows that 20 respondents, or 7.69 percent, stated that they required higher accuracy levels than 95 percent for their shorthand transcripts in the transcription class. There were 191, or 73.46 percent, who reported that they did not have a higher accuracy level. There were 49, or 18.85 percent, who did not reply to the question concerning accuracy levels.

The 95 percent accuracy level is required by most of the transcription teachers when the shorthand speed component is the basis for a portion of the final grade.

TABLE 60.--Higher accuracy levels (above 95%) for the shorthand speed component used as a portion of the final grade in transcription class as reported by public high school teachers of transcription

Reply Given	Total		Group I			Group II			Group III		
			Responses			Responses			Responses		
	Number of Responses	Percent of Responses	Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total
1. Yes	20	7.69	2	3.85	.77	1	2.78	.38	4	8.51	1.54
2. No	191	73.46	39	75.00	15.00	31	86.11	11.92	33	70.21	12.69
3. No Response	49	18.85	11	21.15	4.23	4	11.11	1.54	10	21.28	3.85
Total	260	100.00	52		20.00	36		13.85	47		18.08

Read the table thus: For Item 1 above there were 20 teachers who responded, representing 7.69% of the total of 260 questionnaires tabulated, 49 teachers representing 18.85% of the total respondents did not reply to this question. Replies were distributed numerically and percentage-wise in Groups I-VI.

TABLE 60.--Continued.

Reply Given	Total		Group IV			Group V			Group VI		
	Number of Responses	Percent of Responses	Responses			Responses			Responses		
			Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total
1. Yes	20	7.69	5	17.24	1.92	7	11.48	2.69	1	2.86	.38
2. No	191	73.46	19	65.52	7.31	43	70.49	16.54	26	74.29	10.00
3. No Response	49	18.85	5	17.24	1.92	11	18.03	4.23	8	22.86	3.08
Total	260	100.00	29		11.15	61		23.46	35		13.46

Read the table thus: For Item 1 above there were 20 teachers who responded, representing 7.69% of the total of 260 questionnaires tabulated, 49 teachers representing 18.85% of the total respondents did not reply to this question. Replies were distributed numerically and percentage-wise in Groups I-VI.

This is in line with Lamb[138] who suggests that speed tests should be continued in transcription class and always with the normal five percent error allowance.

It is recommended that this practice be maintained because higher accuracy levels tend to impede the students' speed progress.

Determination of Standards for the Amount of Mailable Copy for Grading Purposes

Public high school teachers of transcription were asked to indicate how they determined standards for the amount of production of mailable copy for grading purposes. Only one item could be checked. Table 61 presents data concerning determination of standards.

An analysis of Table 61 shows that 69 respondents, or 26.64 percent, stated that they used a previously established standard for determining the amount of production of mailable copy for grading purposes in the transcription class.

There were 56 respondents, or 21.62 percent, who indicated that they used a class average for determining the amount of production of mailable copy.

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[138] Lamb, op. cit., p. 107.

TABLE 61.--Determination of standards for amount of production of mailable copy for grading purposes in transcription classes as reported by public high school teachers

Standard	Total		Group I			Group II			Group III		
			Responses			Responses			Responses		
	Number of Responses	Percent of Responses	Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total
1. Previously established standard (total number papers transcribed)	69	26.64	13	25.00	5.02	8	22.22	3.09	15	31.91	5.79
2. Class average (average number of papers transcribed in class	56	21.62	15	28.85	5.79	9	25.00	3.47	7	14.89	2.70
3. Other[a]	14	5.41	3	5.77	1.16	2	5.56	.77	2	4.26	.77
Total No Response	121	46.54	21	40.38	8.11	17	47.22	6.56	23	48.94	8.88
Total	260	100.00	52		20.08	36		13.90	47		18.15

[a]14 reported various scaled standards for the amount of production required.

Read the table thus: For Item 1 above there were 69 teachers who responded, representing 26.64% of the total of 260 questionnaires tabulated and 21 teachers representing 46.54% of the total respondents who did not reply to this question. Replies were distributed numerically and percentage-wise in Groups I-VI.

TABLE 61.--Continued.

Standard	Total		Group IV			Group V			Group VI		
			Responses			Responses			Responses		
	Number of Responses	Percent of Responses	Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total
1. Previously established standard (total number papers transcribed)	69	26.64	10	34.48	3.86	14	23.33	5.41	9	25.71	3.47
2. Class average (average number of papers transcribed in class	56	21.62	5	17.24	1.93	16	26.67	6.18	4	11.43	1.54
3. Other[a]	14	5.41	0	0	0	3	5.00	1.16	4	11.43	1.54
Total No Response	121	46.54	14	48.28	5.41	27	45.00	10.42	19	52.78	7.31
Total	260	100.00	29		11.20	60		23.17	36		13.86

[a]14 reported various scaled standards for the amount of production required.

Read the table thus: For Item 1 above there were 69 teachers who responded, representing 26.64% of the total of 260 questionnaires tabulated and 21 teachers representing 46.54% of the total respondents who did not reply to this question. Replies were distributed numerically and percentage-wise in Groups I-VI.

There were 14, or 5.41 percent, who reported various scaled standards for the amount of production required.

Most of the teachers who reported used an established standard for determining the amount of production of mailable transcripts, while a considerable number reported the use of a class average. Leslie recommends a weekly grading plan using a point system with a minimum passing grade only for the minimum number of points. Many teachers reproduced the following chart by Leslie, or made reference to it in replies to the question.[139]

GRADING ON A POINT SYSTEM

Number of Words in Letter	Perfect	Mailable	Unmailable or Correctible
Up to 125	2	1	0
126 to 250	4	2	0
251 to 375	6	3	0
376 to 500	8	4	0

It is recommended that the amount of production standard set by the teacher should be attainable by most of the students irrespective of how it was established. It is also recommended that a grade scale be established that requires a minimum of arithmetic computation otherwise valuable class time is lost when too much time is spent in figuring grades.

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[139] Leslie, Methods of Teaching Transcription, op. cit., pp. 75, 76.

Daily Production of Letters When Amount of Production Component is Considered as Part of Final Grade

Public high school teachers of transcription were asked to indicate whether they required daily production of letters for the amount of production component in the grading of transcription student. Only one item could be checked. Table 62 presents data concerning production.

An analysis of Table 62 shows that 99 respondents, or 38.08 percent, replied "no"; 68, or 26.15 percent, replied "yes"; and 93, or 35.77 percent, did not respond to the question.

Most of the respondents did not require a daily specified output of letters. The researcher is in agreement that it is not necessary to schedule letter transcription each time the class meets, inasmuch as there are other activities that should be covered, sometimes taking up the entire class period. If daily production is a must, however, the researcher is of the opinion that it is not necessary to grade or review every day's production because of the volume of work entailed. Furthermore, some students may have had a "bad day." It is sufficient merely to require that a definite number (depending upon the grade expected or the student's ability) be turned in by the student during the entire course to earn a grade

TABLE 62.--Daily production of letters for the amount of production component when used as a part of the final grade in transcription class as reported by public high school teachers of transcription

Reply Given	Total		Group I			Group II			Group III		
	Number of Responses	Percent of Responses	Responses			Responses			Responses		
			Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total
1. Yes	68	26.15	12	23.08	4.62	10	27.78	3.85	13	27.66	5.00
2. No	99	38.08	23	44.23	8.85	12	33.33	4.62	18	38.30	6.92
3. No Response	93	35.77	17	32.69	6.54	14	38.89	5.38	16	34.04	6.15
Total	260	100.00	52		20.00	36		13.85	47		18.08

Read the table thus: For Item 1 above there were 68 teachers who responded, representing 26.15% of the total of 260 questionnaires tabulated, 93 teachers representing 35.77% of the total respondents did not reply to this item. Replies were distributed numerically and percentage-wise in Groups I-VI.

TABLE 62.--Continued.

Reply Given	Total		Group IV			Group V			Group VI		
	Number of Responses	Percent of Responses	Responses			Responses			Responses		
			Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total
1. Yes	68	26.15	11	37.93	4.23	15	24.59	5.77	7	20.00	2.69
2. No	99	38.08	9	31.03	3.46	23	37.70	8.85	14	40.00	5.38
3. No Response	93	35.77	9	31.03	3.46	23	37.70	8.85	14	40.00	5.38
Total	260	100.00	29		11.15	61		23.46	35		13.46

Read the table thus: For Item 1 above there were 68 teachers who responded, representing 26.15% of the total of 260 questionnaires tabulated. 93 teachers representing 35.77% of the total respondents did not reply to this item. Replies were distributed numerically and percentage-wise in Groups I-VI.

for the total production component. The researcher suggests that the work produced at the end of the semester be weighted more heavily than that completed at the beginning.

Determination of Amount of Production of Mailable Copy for Grading Purposes

Public high school teachers of transcription were asked to indicate how they determined the amount of production of mailable copy for grading purposes. Only one item could be checked. Table 63 presents data concerning types of transcription materials.

An analysis of Table 63 shows that 84, or 32.31 percent, stated that they used all the materials transcribed over an entire grading period in the determination of the amount of production of mailable copy for grading purposes.

There were 22 respondents, or 8.46 percent, who indicated that they used only a portion of the materials transcribed over the entire grading period; and 28, or 10.77 percent, who used selected materials transcribed during a class period.

There were 14 respondents, or 5.38 percent, who reported various scales for determining the amount of production.

TABLE 63.--Determination of amount of production of mailable copy for grading purposes in transcription class as reported by public high school teachers

Production Items	Total		Group I			Group II			Group III		
	Number of Responses	Percent of Responses	Responses Number	Percent of Group	Percent of Total	Responses Number	Percent of Group	Percent of Total	Responses Number	Percent of Group	Percent of Total
1. Include all materials transcribed over entire grading period	84	32.31	21	40.38	8.08	10	27.78	3.85	13	27.66	5.00
2. Include a portion of the materials transcribed over entire grading period	22	8.46	1	1.92	.38	5	13.89	1.92	2	4.26	.77
3. Include selected materials transcribed during a class period	28	10.77	6	11.54	2.31	5	13.89	1.92	5	10.64	1.92
4. Other[a]	14	5.38	2	3.85	.77	1	2.78	.38	5	10.64	1.92
Total No Response	112	43.08	22	42.31	8.46	15	41.67	5.77	22	46.81	8.46
Total	260	100.00	52		20.00	36		13.85	47		18.08

[a]14 reported various scales for determining amount of production.

Read the table thus: For Item 1 above there were 84 teachers who responded, representing 32.31% of the total of 260 questionnaires tabulated and 112 teachers representing 43.08% of the total respondents who did not reply to this question. Replies were distributed numerically and percentage-wise in Groups I-VI.

TABLE 63.--Continued.

Production Items	Total		Group IV			Group V			Group VI		
	Number of Responses	Percent of Responses	Responses Number	Responses Percent of Group	Responses Percent of Total	Responses Number	Responses Percent of Group	Responses Percent of Total	Responses Number	Responses Percent of Group	Responses Percent of Total
1. Include all materials transcribed over entire grading period	84	32.31	8	27.59	3.08	19	31.15	7.31	13	37.14	5.00
2. Include a portion of the materials transcribed over entire grading period	22	8.46	3	10.34	1.15	6	9.84	2.31	5	14.29	1.92
3. Include selected materials transcribed during a class period	28	10.77	4	13.79	1.54	6	9.84	2.31	2	5.71	.77
4. Other[a]	14	5.38	2	6.90	.77	4	6.56	1.54	0	0	0
Total No Response	112	43.08	12	41.38	4.62	26	42.62	10.00	15	42.86	5.77
Total	260	100.00	20		11.15	61		23.46	35		13.46

[a]14 reported various scales for determining amount of production.

Read the table thus: For Item 1 above there were 84 teachers who responded, representing 32.31% of the total of 260 questionnaires tabulated and 112 teachers representing 43.08% of the total respondents who did not reply to this question. Replies were distributed numerically and percentage-wise in Groups I-VI.

Most of the teachers who determined a grade on the total production of mailable letters used all of the transcripts attempted over an entire grading period. This seems to indicate that all of the work completed by the student was averaged.

Teachers who selected only a portion of the materials or selected materials from the daily work had fewer papers to deal with in evaluating students.

Ordinarily it is not necessary to check all of the students' work in order to arrive at an equitable grade, but in transcription classes the progress of the students must be watched carefully in order that the terminal standards may be reached. It is recommended that the teacher select as much of the transcription work produced as possible in order to give a fair evaluation of the quality and quantity completed.

Content of Test of Related Knowledges

Public high school teachers of transcription were asked to indicate the content of the tests of related knowledges when this was used as a portion of the final grade in transcription. More than one item could be checked. Table 64 presents data concerning content of the tests.

TABLE 64.--Content of tests of related knowledges in transcription classes when used as a portion of final grade as reported by public high school teachers of transcription classes

Content of Test	Total Responses	Total				Group I			Group II			Group III		
		Number of Responses	Percent of Responses	Number of No Responses	Percent of No Responses	Responses			Responses			Responses		
						Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total
1. English usage (spelling, punctuation, capitalization, and syllabication)	260	128	49.23	132	50.77	24	46.15	9.23	19	52.78	7.31	25	53.19	9.62
2. Letter placement	260	78	30.00	182	70.00	10	19.23	3.85	14	38.89	5.38	17	36.17	6.54
3. Proofreading	260	97	37.31	163	62.69	17	32.69	6.54	16	44.44	6.15	17	36.17	6.54
4. Typing speed	260	65	25.00	195	75.00	7	13.46	2.69	13	36.11	5.00	13	27.66	5.00
5. Typing accuracy	260	80	30.77	180	69.23	9	17.31	3.46	14	38.89	5.38	15	31.91	5.77
6. Shorthand speed	260	62	23.85	198	76.15	7	13.46	2.69	15	41.67	5.77	13	27.66	5.00
7. Shorthand theory	260	53	20.38	207	79.62	8	15.38	3.08	12	33.33	4.62	12	25.53	4.62
8. Other[a]	260	8	3.08	252	96.92	3	5.77	1.15	1	2.78	.38	2	4.26	.77

[a]5 reported office procedures and office machines; 3 reported informal type testing.

Read the table thus: For Item 1 above there were 128 teachers who responded, representing 49.23% of the total of 260 questionnaires tabulated and 132 teachers representing 50.77% of the total respondents who did not reply to this item. Replies were distributed numerically and percentage-wise in Groups I-VI.

TABLE 64.--Continued.

Content of Test	Total Responses	Total: Number of Responses	Total: Percent of Responses	Total: Number of No Responses	Total: Percent of No Responses	Group IV: Responses: Number	Group IV: Responses: Percent of Group	Group IV: Responses: Percent of Total	Group V: Responses: Number	Group V: Responses: Percent of Group	Group V: Responses: Percent of Total	Group VI: Responses: Number	Group VI: Responses: Percent of Group	Group VI: Responses: Percent of Total
1. English usage (spelling, punctuation, capitalization, and syllabication)	260	128	49.23	132	50.77	17	58.62	6.54	25	40.98	9.62	18	51.43	6.92
2. Letter placement	260	78	30.00	182	70.00	12	41.38	4.62	14	22.95	5.38	11	31.43	4.23
3. Proofreading	260	97	37.31	163	62.69	13	44.83	5.00	20	32.79	7.69	14	40.00	5.38
4. Typing speed	260	65	25.00	195	75.00	9	31.03	3.46	13	21.31	5.00	10	28.57	3.85
5. Typing accuracy	260	80	30.77	180	69.23	11	37.93	4.23	17	27.87	6.54	14	40.00	5.38
6. Shorthand speed	260	62	23.85	198	76.15	9	31.03	3.46	11	18.03	4.23	7	20.00	2.69
7. Shorthand theory	260	53	20.38	207	79.62	6	20.69	2.31	11	18.03	4.23	4	11.43	1.54
8. Other[a]	260	8	3.08	252	96.92	1	3.45	.38	0	0	0	1	2.86	.38

[a]5 reported office procedures and office machines; 3 reported informal type testing.

Read the table thus: For Item 1 above there were 128 teachers who responded, representing 49.23% of the total of 260 questionnaires tabulated and 132 teachers representing 50.77% of the total respondents who did not reply to this item. Replies were distributed numerically and percentage-wise in Groups I-VI.

An analysis of Table 64 shows that 128 respondents, or 49.23 percent, reported that English usage was of greatest importance as a part of a test of related knowledges, when a portion of the final grade in transcription is based on related knowledges.

There were 97 respondents, or 37.31 percent, who indicated that proofreading was of next importance; 80, or 30.77 percent, indicated that typing accuracy was of third importance.

In addition, there were 78 respondents, or 30 percent, who indicated that letter placement was of next importance; followed by 65, or 25 percent, who indicated typing speed; 62, or 23.85 percent, who indicated shorthand speed; 53, or 20 percent, who indicated shorthand theory; and 8, or 3.08 percent, who listed other topics.

Teachers have recognized English usage, which includes spelling, grammar, syllabication, etc., as an integral part of the development of transcription skill.

Preparation of Students for Civil Service Examinations by Transcription Teachers

Public high school teachers of transcription were asked to indicate whether they prepared their students for State Civil Service stenographic examinations. Only one item could be checked. Table 65 presents data concerning student preparation.

TABLE 65.--Number of public high school transcription teachers preparing students for State Civil Service stenographic examinations

Reply Given	Total		Group I			Group II			Group III		
	Number of Responses	Percent of Responses	Responses Number	Responses Percent of Group	Responses Percent of Total	Responses Number	Responses Percent of Group	Responses Percent of Total	Responses Number	Responses Percent of Group	Responses Percent of Total
1. Yes	98	37.69	21	40.38	8.08	21	58.33	8.08	16	34.04	6.15
2. No	65	25.00	11	21.15	4.23	6	16.67	2.31	14	29.79	5.38
3. No Response	97	37.31	20	38.46	7.69	9	25.00	3.46	17	36.17	6.54
Total	260	100.00	52		20.00	36		13.85	47		18.07

Read the table thus: For Item 1 above there were 98 teachers who responded, representing 37.69% of the total of 260 questionnaires tabulated; 97 teachers representing 37.31% of the total respondents did not reply to this question. Replies were distributed numerically and percentage-wise in Groups I-VI.

TABLE 65.--Continued.

Reply Given	Total		Group IV			Group V			Group VI		
	Number of Responses	Percent of Responses	Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total
1. Yes	98	37.69	8	27.59	3.08	23	37.70	8.85	9	25.71	3.46
2. No	65	25.00	7	24.14	2.69	19	31.15	7.31	8	22.86	3.08
3. No Response	97	37.31	14	48.28	5.38	19	31.15	7.31	18	51.43	6.92
Total	260	100.00	19		11.15	61		23.47	35		13.46

Read the table thus: For Item 1 above there were 98 teachers who responded, representing 37.69% of the total of 260 questionnaires tabulated; 97 teachers representing 37.31% of the total respondents did not reply to this question. Replies were distributed numerically and percentage-wise in Groups I-VI.

An analysis of Table 65 shows that 98 respondents, or 37.69 percent, indicated that they prepared their students for State Civil Service stenographic examinations in their transcription classes.

There were 65, or 25 percent, who stated that they did not prepare their students. There were 97, or 27.31 percent, who did not respond to the question.

Over one-third of the transcription teachers gave some training in preparing students to pass Civil Service stenographic examinations.

It is recommended that all other teachers consider the benefits accruing to the student when there is preparation in the class for State Civil Service examinations or other employment tests.

Type of Preparation Given to Students for Civil Service Examinations by Transcription Teachers

Public high school teachers of transcription were asked to indicate the type of preparation given to students for State Civil Service examinations. More than one item could be checked. Table 66 presents data concerning the type of preparation given.

An analysis of Table 66 shows that 64 respondents, or 24.62 percent, stated that they prepared their students for State Civil Service examinations by giving dictation similar to the State tests in their area.

TABLE 66.--Type of preparation given students for State Civil Service examinations by public high school transcription teachers

Type of Preparation	Total					Group I			Group II			Group III		
	Total Responses	Number of Responses	Percent of Responses	Number of No Responses	Percent of No Responses	Responses			Responses			Responses		
						Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total
1. Use Civil Service sample test booklets	260	63	24.23	197	57.77	17	32.69	6.54	12	33.33	4.62	9	19.15	3.46
2. Give dictation similar to the state tests given in the area	260	64	24.62	196	75.38	12	23.08	4.62	14	38.89	5.38	10	21.28	3.85
3. Secure old State Civil Service tests for student practice	260	21	8.08	239	91.92	5	9.62	1.92	3	8.33	1.15	1	2.13	.38
4. Use old Federal Gov't. tests for student practice	260	20	7.69	240	92.31	5	9.62	1.92	4	11.11	1.54	1	2.13	.38
5. Other[a]	260	18	6.92	242	93.08	4	7.69	1.54	2	5.56	.77	4	8.51	1.54

[a]6 reported using books and workbooks Civil Service transcribing and testing; 4 reported giving Civil Service test in class; 3 reported dictating at moderately difficult speed, varied subject matter; 2 reported having students write from printed copy similar to State test; 2 reported drilling on timed writings; 1 reported working with miscellaneous Civil Service materials.

Read the table thus: For Item 1 above there were 63 teachers who responded, representing 24.23% of the total of 260 questionnaires tabulated and 197 teachers representing 75.77% of the total respondents who did not reply to this item. Replies are distributed numerically and percentage-wise in Groups I-VI.

TABLE 66.--Continued.

Type of Preparation	Total Responses	Total				Group IV			Group V			Group VI		
		Number of Responses	Percent of Responses	Number of No Responses	Percent of No Responses	Responses			Responses			Responses		
						Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total	Number	Percent of Group	Percent of Total
1. Use Civil Service sample test booklets	260	63	24.23	197	75.77	4	13.79	1.54	14	22.95	5.38	7	20.00	2.69
2. Give dictation similar to the state tests given in the area	260	64	24.62	196	75.38	5	17.24	1.92	17	27.87	6.54	6	17.14	2.31
3. Secure old State Civil Service tests for student practice	260	21	8.08	239	91.92	2	6.90	.77	9	14.75	3.46	1	2.86	.38
4. Use old Federal Gov't. tests for student practice	260	20	7.69	240	92.31	1	3.45	.38	9	14.75	3.46	0	0	0
5. Other[a]	260	18	6.92	242	93.08	2	6.90	.77	3	4.92	1.15	3	8.57	1.15

[a]6 reported using books and workbooks Civil Service transcribing and testing; 4 reported giving Civil Service test in class; 3 reported dictating at moderately difficult speed, varied subject matter; 2 reported having students write from printed copy similar to State test; 2 reported drilling on timed writings; 1 reported working with miscellaneous Civil Service materials.

Read the table thus: For Item 1 above there were 63 teachers who responded, representing 24.23% of the total of 260 questionnaires tabulated and 197 teachers representing 75.77% of the total respondents who did not reply to this item. Replies are distributed numerically and percentage-wise in Groups I-VI.

There were 63, or 24.23 percent, who used Civil Service sample booklets for their preparation of students. There were 21, or 8.08 percent, who secured old State Civil Service tests to use for student practice; 20, or 6.69 percent, used old Federal Government tests for student practice and 18, or 6.92 percent, reported using other methods.

In the researcher's opinion all of the materials selected by the transcription teachers, if skillfully used, will adequately prepare the student for the State Civil Service examinations.

Conclusion

This chapter has been an analysis of the replies from public high school advanced shorthand teachers and transcription teachers regarding their tests and testing techniques.

A summary of the findings of this chapter are found in Chapter VIII together with the conclusions and recommendations.

The next chapter, Chapter VI, will be a comparison of the tests and testing techniques of the State Civil Service Commissions and of those of the advanced shorthand and transcription teachers with regard to the similarities and differences which exist.

CHAPTER VI

ANALYSIS OF THE SIMILARITIES AND DIFFERENCES BETWEEN STATE CIVIL SERVICE TESTS AND TESTING TECHNIQUES AND THOSE USED BY SELECTED PUBLIC HIGH SCHOOL ADVANCED SHORTHAND AND TRANSCRIPTION TEACHERS

A percentage analysis was used to compare the State Civil Service shorthand dictation tests and testing techniques and those of the public high school teachers of advanced shorthand and transcription with regard to the similarities and differences. The following comparisons were made between the states' tests and teachers' tests: type of shorthand dictation test used; type of transcript required; time allowed for dictation of material, time allowed for transcription of material; sources of testing materials; measurement of difficulty of shorthand dictation materials, difficulty of the dictation materials used; reasons given for current test usage; methods used for scoring tests; minimum standards required for an entry-level position with the State and minimum classroom

requirements at the various grade levels; and sections included in the State stenographic examinations and related subjects studied in shorthand and transcription classes.

Type of Shorthand Dictation Test Used

Similar types of shorthand tests were reported being used by the State Civil Service Commissions and public high school advanced shorthand and transcription teachers. The type of test used most frequently by states and teachers was the timed, orally dictated test which was transcribed at the typewriter. This was reported by 46 states, or 93.87 percent; 231, or 88.85 percent, of the advanced shorthand teachers; and 166, or 63.85 percent, of the transcription teachers. Therefore, the majority of the states were using a test similar in nature to the tests used by public high school teachers of advanced shorthand and transcription.

However, two populous states (Group I) were using the printed dictation test; that is, a copying test in which printed material was copied in shorthand and later transcribed in the form of a fill-in, machine-scored type of transcript. There was a total of 27 responses, or 10.38 percent, of the teachers of advanced shorthand who also used this method. Of this total, the teachers in

Group I reported that they used this method to prepare their students for the State Civil Service examination. (See Table 22.) Other teachers stated that they used this method only as a variation from the regular type of oral dictation test.

Type of Transcript Required

There was agreement between the states and the teachers concerning the type of transcript required. The majority of the states and the advanced shorthand and transcription teachers required a typewritten transcript from the notes taken in the dictation tests. The majority of the states were using a typewritten transcript which was similar to those required by public high school teachers of advanced shorthand and transcription.

However, there were 2 states, or 4.08 percent, which used a fill-in type of transcript for a nondictation test; and 6 states, or 12.24 percent, which used various types of fill-in transcripts presumably machine-scored also. In comparison there were only 5 advanced shorthand teachers, or 1.92 percent, who stated that they used fill-in blank handwritten transcripts; and 1 teacher, or .38 percent, used a machine-scored transcript. (See Table 30.) However, these teachers were not from states using fill-in transcripts for their State Civil Service stenographic examinations.

Time Allowed for Dictation of Material

There was some agreement between states and teachers on the length of time allowed for the dictation of material. A dictation period of 3 minutes was reported by a majority of the states, by a majority of teachers of advanced shorthand for the A and B grade levels, and by a majority of transcription teachers at the A grade level.

There were 32 states, or 65.30 percent, which allowed this 3-minute period of time; but other states reported variations of timing ranging from 4 minutes to 10 minutes. Among the advanced shorthand teachers, a large group reported 5-minute periods of time for dictation at the C and D grade levels. Transcription teachers reported the same variations at the B, C, and D grade levels.

The responses for advanced shorthand teachers were as follows: 120, or 46.15 percent, for 3 minutes; and 107, or 41.15 percent, for 5 minutes at the Grade A level; 112, or 43.08 percent, for 3 minutes; and 110, or 42.31 percent, for 5 minutes at the Grade B level; 117, or 45 percent, for 5 minutes; and 102, or 39.23 percent, at the Grade C level; and 100, or 38.61 percent, for 3 minutes; and 102, or 39.38 percent, for 5 minutes at the Grade D level.

The responses for transcription teachers were as follows: 80, or 30.77 percent, for 3 minutes; and 69, or

26.54 percent, for 5 minutes at the Grade A level; 78, or 30 percent, for 5 minutes; and 72, or 27.69 percent, for 3 minutes at the Grade B level. The same reports were given for the Grade C level as for the Grade B level. There were 72, or 27.69 percent of the responses, who reported 5 minutes and 68, or 26.15 percent, for 3 minutes at the Grade D level.

Both the advanced shorthand teachers and the transcription teachers were about equally divided concerning whether they allowed 3 minutes or 5 minutes for dictation at all grade levels.

Time Allowed for Transcription of Material

There was a difference in the length of time allowed for transcription of material in shorthand dictation tests as reported by the states and advanced shorthand and transcription teachers. Teachers allowed more time for transcribing then did the states.

The largest group of states (14, or 28.57 percent) reported transcription periods of 20 minutes, while another group (10, or 20.40 percent) reported only 3 minutes. Another group (5, or 10.20 percent) reported periods of 30 minutes. The remaining states reported other periods of time for transcription ranging from 4 minutes to 40 minutes.

Advanced shorthand teachers reported longer periods of from 30 to 35 minutes for the various grade levels A, B, C, and D, with the 30 minute period reported by the majority of the respondents.

Presumably, the states that required only 3 minutes of transcription had satisfied themselves as to the validity of this procedure; and, consequently, were able to select applicants accordingly. It is recommended that teachers located in states having short transcription timing periods use similar periods for practice in their classrooms in order to familiarize their students with this process.

Sources of Testing Materials

There was some agreement between the states and advanced shorthand and transcription teachers concerning the sources of testing materials used for shorthand dictation purposes.

The majority of the states, 23, or 46.93 percent, indicated that they requested assistance from the Federal Government; while there were an almost equal number of states (20, or 40.80 percent) which indicated that they used business education books and magazines.

Advanced shorthand teachers and transcription teachers reported that they used business education books and magazines most frequently for testing materials. There

were 217, or 83.46 percent, of the advanced shorthand teachers who gave business education books as their first choice; and 216, or 83.08 percent, who listed business education magazines as their second choice. There were 191, or 73.46 percent, of the transcription teachers who gave business education books as their first source; and 166, or 63.85 percent, who gave business education magazines as their second choice.

There was a greater percentage of states than teachers who stated that they constructed their own tests from materials taken from their files or from word lists. There were 14 states, or 28.57 percent, which reported the use of materials from their files; and 6 states, or 12.24 percent, which reported the use of word lists. Advanced shorthand teachers reported the use of self-composed tests, as indicated by 28, or 10.77 percent; and the use of tests constructed from word lists, as indicated by 23, or 8.85 percent. There were 67, or 25.77 percent of the transcription teachers who reported the use of teacher's manuals for constructing tests; 5, or 1.92 percent, who reported the composition of tests from word lists; and 17, or 6.54 percent, who composed tests.

States also reported additional assistance in obtaining testing materials from their own State Employment Service offices as indicated by 7 states, or 14.28

percent. Other State Civil Service Commissions gave assistance as reported by 7 states, or 14.28 percent.

In summary, states were using some of the same sources of testing materials that were used by public high school teachers of advanced shorthand and transcription; but states required more assistance from outside sources and indicated a tendency toward attempting to make up their own tests. It appeared that the teachers were doing an adequate job of selecting materials to prepare for State Civil Service examinations.

Measurement of Difficulty of Shorthand Dictation Materials

There was some agreement between states and public high school advanced shorthand and transcription teachers concerning the measurement of difficulty of shorthand dictation materials. A slight majority of the states (10, or 20.40 percent) reported the use of the standard word, and 17, or 34.69 percent, syllabic intensity. There were 131, or 50.38 percent of the advanced shorthand teachers, who reported the use of the standard word and 89, or 34.34 percent, the use of syllabic intensity. In addition, there were 117, or 45 percent of the transcription teachers, who reported the use of the standard word and 63, or 24.23 percent, the use of syllabic intensity.

However, there were 19 states which reported methods of measurement of difficulty of dictation materials that were different. They reported as follows: 8 states, or 16.32 percent, used no measurement; 8, or 16.32 percent, used an actual word count; and 3, or 6.12 percent, used their own judgment. Advanced shorthand teachers reported other methods of measurement as follows: 19, or 7.31 percent, actual word count; 24, or 9.23 percent, no measurement. Transcription teachers reported other methods as follows: 31, or 11.92 percent, no measurement; and 20, or 7.69 percent, actual word count.

In summary, only a slight majority (27 states, or 55.09 percent) of the states reported the use of the same methods of measuring the difficulty of the dictation materials as were used by the public high school teachers of advanced shorthand and transcription. These measurements were the standard word and syllabic intensity. A large percentage of the states (19 states, or 38.76 percent) reported difficulty measurements such as an actual word count; no measurement, and the use of their own judgment which are considered to be inadequate difficulty measurements according to authorities. However, upon actual examination of the tests of some of these states and an application of the syllabic intensity measurement, these tests were in most cases found to be adequate for stenographic testing purposes.

It is recommended that states become aware of some of the best ways of measuring the difficulty of their dictation materials. All teachers should inquire of their State Civil Service Commissions concerning the method used to calculate difficulty. All teachers should prepare their students technically and psychologically to meet a testing situation with a test of higher difficulty.

Difficulty of the Dictation Materials Used

Difficulty Measurement by Syllabic Intensity

A comparison of the difficulty of testing materials as measured by syllabic intensity used by the states and advanced shorthand and transcription teachers is shown in Table 67. This table presents the difficulty of the dictation materials, as measured by the syllabic intensity of the entry-level shorthand dictation tests furnished by 38 states and of the shorthand dictation tests taken from 40 issues of the Business Teacher magazine listed as 80 words per minute for periods of 3 minutes. Dictation tests from Business Teacher magazine were reported to be used by the advanced shorthand and transcription teachers for testing purposes.

An analysis of Table 67 shows that a comparison was made of the syllabic intensity of the tests of the

TABLE 67.--A comparison of the syllabic intensity of the shorthand portion of the State Civil Service stenographic tests and the syllabic intensity of shorthand tests of public high school advanced shorthand and transcription teachers for Groups I through VI

Group	State[a]	Syllabic Intensity of State Tests	Group Average S.I. State Tests	Syllabic Intensity of Teacher Tests
I	State 1	1.5		
	State 2	1.52	1.51	1.461
II	State 3	1.63		
	State 4	1.46		
	State 5	1.5	1.53	1.461
III	State 6	1.55		
	State 7	1.55		
	State 8	1.72		
	State 9	1.68		
	State 10	1.55		
	State 11	1.81		
	State 12	1.70		
	State 13	1.43		
	State 14	1.70		
	State 15	1.51	1.62	1.461
IV	State 16	1.49		
	State 17	1.61		
	State 18	1.42		
	State 19	1.48		
	State 20	1.49		
	State 21	1.42	1.48	1.461

TABLE 67.--Continued.

Group	State	Syllabic Intensity of State Tests	Group Average S.I. State Tests	Syllabic Intensity of Teacher Tests
V	State 22	1.55		
	State 23	1.58		
	State 24	1.58		
	State 25	1.19		
	State 26	1.56		
	State 27	1.58		
	State 28	1.51		
	State 29	1.55		
	State 30	1.69		
	State 31	1.64	1.54	1.461
VI	State 32	1.55		
	State 33	1.67		
	State 34	1.62		
	State 35	1.69		
	State 36	1.66		
	State 37	1.69		
	State 38	1.55	1.63	1.461

[a]For security reasons states could not be identified by name.

states and the tests of teachers divided into Groups I through VI. (A statistical analysis of the comparison of the means of the groups is shown in Chapter IV.)

An analysis of the difficulty of the entry-level shorthand dictation tests for the various 38 states and of public high school shorthand teachers' dictation tests was completed by determining the syllabic intensity of each of the tests. Syllabic intensity was computed by a careful examination of the 38 states' entry-level shorthand tests and a count of the total number of syllables and the total number of words in the dictation material. The total number of syllables was divided by the total number of words in each article of dictation to determine the syllabic intensity of each of the tests.

Difficulty Measurement by Use of Words Beyond the First 1500 Words in the Silverthorn List

A count of the number of words on the State Civil Service entry-level dictation tests beyond the first 1500 most commonly used words as indicated by the Silverthorn List is presented in Table 68.

An analysis of the entry-level shorthand dictation tests furnished by the 38 states was made concerning the number of words beyond the first 1500 most commonly used words according to the Silverthorn List. If more than one

TABLE 68.--Number of words on State Civil Service entry-level shorthand dictation tests beyond the first 1,500 most commonly used words as indicated by the Silverthorn List[a]

Group	State Number	Number of Words Beyond First 1500 Test 1	Test 2	Test 3	Average Number of Words Beyond First 1500
I	State 1[b]	51			51
	State 2[b]	-			-
II	State 5	45			45
	State 6	26			26
	State 7	31			31
III	State 8	36	44		40
	State 9	36	44		40
	State 10	33	29		31
	State 11	27	37		32
	State 12	27	37		32
	State 13	33	28		30
	State 14	21	18		19
	State 15	36	44		40
	State 16	20	18		19
	State 17	44	43		43
	State 18	26	37		31
IV	State 19	19			19
	State 20	9			9
	State 21	41	47		44
	State 22	25	32		28
	State 23	27	21		24
	State 24	26	22		24
	State 25	21			21
V	State 26	18	45	9	24
	State 27	10	11		10
	State 28	43	30		36
	State 29	26			26
	State 30	21			21
	State 31	35	16		25
	State 32	25			25
	State 33	40	30	34	34

TABLE 68.--Continued.

Group	State Number	Number of Words Beyond First 1500 Test 1	Test 2	Test 3	Average Number of Words Beyond First 1500
VI	State 34	24	32	34	30
	State 35	14			14
	State 36	39			39
	State 37	36	44		40
	State 38	21			21
	State 39	28			28
	State 40	30	27		28

[a]Silverthorn, op. cit.

[b]State furnished only syllabic intensity figure per telephone conversation. State regulations did not allow test to be mailed out to researcher.

test were analyzed, the number of words was listed for each of the tests and an average figure was shown. Average number of words ranged from 10 words to 51 words.

As a result of the analysis it is recommended that the teachers continue the use of the Business Teacher magazine shorthand dictation tests for regular testing purposes. However, in preparing students to meet Civil Service shorthand test requirements more difficult material should be used.

Reasons Given for Current Test Usage

A difference was noted in the reasons mentioned by the states and the public high school teachers of advanced shorthand and transcription for using their current shorthand tests. The states and the public high school teachers did not agree on the reasons for using their current tests. States were primarily interested in the ease of handling the test from an administrative standpoint. They were also interested in a test that would help them to select an effective employee. Teachers were more concerned with a test that was the best measurement of stenographic proficiency.

There were 19 states, or 38.77 percent, which reported the use of their current tests for purposes of ease of administration. In addition, 17 states, or 34.69 percent, reported the ease of scoring. There were 203,

or 78.08 percent of the teachers, who indicated that they used their present tests for the reason that the tests were the best measurements of skill available.

It is recommended that the teachers continue looking for tests that will measure adequately the student's progress and serve as a motivational device. Teachers should prepare their students for state stenographic tests that may differ from teacher-type tests without spending too much time upon such preparation.

Methods Used for Scoring Tests

Similar scoring methods were reported being used by the majority of the State Civil Service testing groups and public high school advanced shorthand and transcription teachers. Most of the states and the teachers used hand-scoring methods, but a number of the states indicated the use of machine-scoring methods or a combination of machine-scoring and hand-scoring.

There were 4 states, or 8.16 percent, which reported the use of machine-scoring processes; and 3 states, or 6.12 percent, which reported the use of a combination of machine-scoring and hand-scoring.

It is recommended that the teachers minimize the time spent discussing scoring methods but that they assure students that with the proper stenographic proficiency

they will be graded fairly in their examinations. Machine-scoring processes should not be of any consequence to the student, because such processes are merely administrative devices used to speed the scoring of examinations.

Minimum Standards Required for an Entry-Level Position with the State and Minimum Classroom Requirements at the Various Grade Levels

The entry-level shorthand dictation speed requirements of states and of the shorthand dictation speed requirements of advanced shorthand teachers and transcription teachers differed. A difference existed between states and teachers concerning minimum standards required for shorthand speed and accuracy requirements in testing. The teachers' requirements tended to be higher.

The majority of the states (36, or 73.47 percent) required an entry-level speed of 80 words per minute. Advanced shorthand teachers required speeds of 100 and 90 words per minute for the Grade C level with 95 percent accuracy with higher speeds required at the A and B level. Transcription teachers required speeds of 80, 90, and 100 words per minute at the Grade C level for mailability performance.

States and teachers disagreed on the accuracy requirement for the transcript of the dictation. The majority of the states required a special formula or the

use of a maximum number of errors type of measurement; advanced shorthand teachers required 95 percent accuracy, and transcription teachers required a mailable transcript.

In summary, the teachers required a higher speed than that required by the states.

It is recommended that the teachers continue to work toward even higher speed levels for two reasons, even though it is unnecessary to have higher speeds in qualifying for State Civil Service stenographic examinations at the entry-level: (1) the student's terminal speed in classes is usually the highest speed she ever attains; and (2) the student may be nervous during the test and can, therefore, fall back on her reserve power in writing.

Sections Included in the State Stenographic Examinations and Related Subjects Studied in Shorthand and Transcription Classes

There was agreement between the states and the advanced shorthand and transcription teachers concerning the sections of the state tests and the related subject matter stressed in the classroom. Apparently, states were testing for skills and knowledges that were being stressed in the classroom.

States listed the following tests in order of their use after the stenographic skill performance test:

typing speed and accuracy, general clerical, English usage, and spelling. Advanced shorthand teachers indicated the following in order of their importance: English usage, typing accuracy and speed, and clerical skills. Transcription teachers listed English usage and spelling, proofreading, typing accuracy, letter placement, and typing speed.

There were 41 states, or 83.67 percent, which indicated typing speed and accuracy; 42, or 85.71 percent, general clerical; and 32, or 65.30 percent, English usage and spelling. Advanced shorthand teachers reported as follows: 243, or 93.46 percent, English usage and spelling; 209, or 80.38 percent, typing accuracy; 135, or 51.92 percent, typing speed; and 97, or 37.31 percent, clerical skills. Transcription teachers reported as follows: 197, or 75.77 percent, English usage and spelling; 187, or 71.92 percent, proofreading; 168, or 64.62 percent, typing accuracy; 149, or 57.31 percent, letter placement; and 107, or 41.14 percent, typing speed.

Other tests given were the general information test as reported by 16 states, or 32.65 percent, and office procedures and supervision by 10 states, or 20.40 percent. Advanced shorthand teachers listed secretarial information and office etiquette, office machines, basic arithmetic, plus other related knowledges.

It is recommended that the teachers continue emphasizing related knowledges even to a greater degree as the employer (the state) is only interested in the finished product--the transcript. Proficiency in related areas contributes to the quality of the transcript.

Conclusion

This chapter has been an analysis of the similarities and differences between State Civil Service tests and testing techniques and those used by selected public high school teachers of advanced shorthand and transcription.

As a result of this analysis, it was determined that the two groups were in agreement concerning their tests and testing techniques according to the following: the type of shorthand tests used, the type of transcript required, the scoring methods used, and the sections included in the state stenographic test as related to the topics studied in the shorthand and transcription classes.

In addition, there was some agreement between the two groups with regard to the following: the length of time allowed for dictation of materials, the sources of testing materials, and the measurement of difficulty of dictation materials.

However, there were differences noted between the two groups regarding the following: the length of time allowed for transcription, the difficulty of the dictation materials used, the reasons given for current test usage, and the minimum standards required for the entry-level position with the state as related to the minimum classroom requirements at the various grade levels.

CHAPTER VII

A STATISTICAL ANALYSIS AND COMPARISON OF THE PERFORMANCE OF 93 STUDENTS ON AN ORALLY DICTATED TEACHER-TYPE TEST AND A CIVIL SERVICE NONDICTATION TYPE TEST

This chapter portrays the results of a statistical comparison made to test one of the hypotheses of this study.

Hypothesis:

There will be no statistically significant difference between the performance of a group of students from specified high schools on a nondictation State Civil Service shorthand test and on a selected teacher-type classroom shorthand dictation test.

The Spearman Rank Correlation was the statistical technique used to test this hypothesis. This statistic is "a measure of association which requires that both variables be measured in at least an ordinal scale so

that the objects or individuals under study may be ranked in two ordered series."[140]

The Teacher-Type Test

A teacher-type test was administered to a group of 93 senior high school students enrolled in the fourth semester of stenographic training in 8 Michigan high schools. This teacher-type shorthand dictation test was a 4-minute, orally dictated test given at the rate of 80 words per minute with a period of 30 minutes allowed for a typewritten transcript. The test had a syllabic intensity of 1.4, which was considered to be average in this study. The scores obtained were calculated as correct words transcribed. (See Chapter III, Procedures, for a detailed discussion of the test.)

The students involved in this study were not specifically selected but were those available for the study who had one week previously taken the State of Michigan Civil Service stenographic examination. The researcher had no knowledge of students' grades, shorthand or typing skills, or other factors.

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[140]Sidney Siegel, Nonparametric Statistics for the Behaviorial Sciences (New York: McGraw-Hill Book Company, Inc., 1956), p. 202.

The Civil Service Test

The Michigan Civil Service Commission, upon invitation, administers tests yearly in high schools for the purpose of examining graduating students who seek state employment in the stenographic field. The stenographic test is unique among state stenographic examinations in that it is a nondictation test with a fill-in answer sheet. The applicant copies in shorthand, as quickly as possible, from printed dictation material. After the printed material is collected by the test monitor, the applicant is asked to complete a fill-in transcript by selecting the correct responses from a list of words. Answers are indicated by blackening sections on an IBM machine-scored answer sheet. Scores on tests are calculated as determined by a special Civil Service formula.

The researcher arranged with the State of Michigan to obtain the scores of entry-level Civil Service stenographic examinations of the same students who took the teacher-type test. State regulations prohibited the researcher's participation in any way in the preparation of the Civil Service test, its administration, or its grading. (See Chapter III, Procedures, for further discussion.)

The Statistical Analysis

A comparison of the scores of students on the teacher-type shorthand dictation test and the scores of these same students on the shorthand portion of the State of Michigan's Civil Service stenographic examination was made. The scores of students on the teacher-type test were listed as correct words transcribed, whereas the scores of the same students on the nondictation Civil Service test were listed as a number score calculated by the Civil Service testing personnel through the use of a special formula.

The Spearman Rank Correlation Coefficient with tied observations was used for comparison purposes.[141]

$$\rho = \frac{\Sigma x^2 + \Sigma y^2 - \Sigma d^2}{2\sqrt{\Sigma x^2 \Sigma x^2}}$$

$$\rho = \frac{6687.0 + 66909.5 - 53368.5}{2\sqrt{66687.0 \times 66909.5}} = 0.6005$$

A Spearman rho of .6005 was obtained and to test the significance of this figure the following was submitted:

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[141] Siegel, op. cit., p. 212.

$$t = r_s\sqrt{\frac{N - 2}{1 - r_s^2}}$$

$$t = .60\sqrt{\frac{91}{1 - .60}}$$

$$t = 9.05$$

It was found to be significant at less than the .001 level.[142]

Conclusion

It was concluded, therefore, from the preceding statistical analysis that high school stenographic students who do well on the orally dictated, teacher-type shorthand dictation test will tend to do equally as well on the State of Michigan Civil Service nondictation type of shorthand test.

The null hypothesis stated was:

There will be no statistically significant difference between the performance of a group of students from specified high schools on a nondictation State Civil Service shorthand test and on a selected teacher-type classroom shorthand dictation test.

The null hypothesis was accepted.

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[142]Siegel, op. cit., p. 210.

CHAPTER VIII

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

I. Nature of the Study

Many business education instructors on the secondary level have been concerned with whether State Civil Service stenographic examinations and the examination procedures used in Civil Service testing were different from the type of tests and testing procedures customarily used in the classrooms. The purpose of this study has been to determine what specific differences existed between the types of tests and testing practices of the two groups.

Accordingly, this study consisted of an analysis of the information reported on questionnaires, of the entry-level stenographic testing techniques of State Civil Service Commissions, and of a randomly selected group of public high school advanced shorthand and transcription teachers. In addition, a statistical comparison was made of the syllabic intensity of the shorthand dictation tests of the Civil Service Commissions of 38 of the 49 states and of the shorthand dictation tests of advanced shorthand

and transcription teachers in the same 38 states.[143] Thirdly, a classroom experiment was conducted to determine whether second-year public high school stenographic students would perform as well on a selected State Civil Service stenographic examination of a nondictation nature as on a teacher-type, orally dictated test. A statistical comparison was made of the scores received by the students on the two types of tests.

Need for the Study

A review of the literature concerning the stenographic tests and testing techniques of State Civil Service Commissions revealed little information. It was felt that an actual survey of State Civil Service Commissions would yield valuable information concerning stenographic testing for all states and for public high school business education teachers also.

A review of the writings of authorities in the field of shorthand testing indicated that there were many views held; but to determine whether these testing methods were actually in use, it was necessary to question the teachers themselves concerning the types of tests and

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[143] Only 38 states supplied the shorthand portion of their State Civil Service stenographic examinations; therefore, only 38 states were involved in the statistical analysis. There were 49 states, however, that replied to the questionnaire with regard to testing practices.

testing techniques that were currently being used in the classroom.

Finally, there had been little written about a new method of shorthand testing that was being used by two states in their Civil Service stenographic examinations--a method consisting of the use of nondictation materials. A need was indicated for determining whether students would perform as well on this new type of testing as on a conventional, teacher-type test.

Delimitations of the Study

This study was delimited to the analysis of the entry-level tests and requirements of the stenographic examination of the Civil Service Commissions of 49 states.

This study was further delimited to the analysis of the testing practices and terminal grade requirements of 260 randomly selected public high school teachers of advanced shorthand and transcription located in 38 states. Test comparisons were made only between the Civil Service tests of 38 states and teacher-type tests of these same states.

The sample used in the experiment was composed of 93 senior high school students from 8 high schools located within a geographical area in and surrounding Lansing, Michigan.

Hypotheses Tested

The first hypothesis tested in this study was a nonstatistical one which was subject to a percentage analysis.

Hypothesis:

The majority of State Civil Service stenographic examinations will differ markedly from the public high school classroom advanced shorthand and transcription teachers' tests with regard to the type and form of test, the type of transcript required, the time allowed for transcription, the scoring methods used, and the related areas tested.

The second and third hypotheses in this study were tested statistically.

Hypothesis:

There will be no statistically significant difference between the difficulty level as measured by syllabic intensity of the shorthand portion of the State Civil Service stenographic examinations and of selected high school classroom shorthand dictation tests.

Hypothesis:

There will be no statistically significant difference between the performance of a group of students from specified high schools on a nondictation State Civil

Service shorthand test and on a selected teacher-type classroom shorthand dictation test.

II. Summary of the Procedures

In order to gather the needed information concerning the tests and testing procedures of Civil Service Commissions, a questionnaire was developed and mailed to 50 State Civil Service Commissions. This questionnaire comprised inquiries concerning testing procedures, test material selections, scoring methods, and standards. A request was also made for a recent copy of the shorthand portion of the entry-level state stenographic examination.

To obtain information from business teachers, a second questionnaire was designed and mailed to 500 randomly selected advanced shorthand and transcription teachers. Questions which were asked related to the tests and testing practices of these teachers.

A percentage analysis was then made of the replies from the Civil Service Commissions and the replies from the teachers. Comparisons were made of these percentage analyses to determine the similarities and differences between the tests and testing techniques of both groups.

The syllabic intensity of the shorthand tests used by the Civil Service Commissions and the syllabic intensity of shorthand tests used by teachers were compared statistically to determine whether there was a

significant difference in the difficulty level between the tests of the two groups.

Another statistical comparison was made of the scores of a group of students who took both the nondictation Civil Service shorthand test and a teacher-type, orally dictated shorthand test.

III. Findings

Findings Relative to the Hypotheses Tested

A percentage analysis was used to test the first hypothesis:

1. The majority of State Civil Service stenographic examinations will differ markedly from the public high school classroom advanced shorthand and transcription teachers' tests with regard to the type and form of test, the type of transcript, the time allowed for transcription, the scoring methods used, and the related areas tested.

   Since the majority of tests did not meet the criteria established for markedly different, the hypothesis was rejected.

A "t" test was used to test the second hypothesis statistically.

2. There will be no statistically significant difference between the difficulty level as measured

by syllabic intensity of the shorthand portion of the State Civil Service stenographic examinations and selected high school classroom shorthand dictation tests.

Since the mean difficulty level of 1.56 syllabic intensity for all State Civil Service entry-level stenographic tests was statistically significantly higher than the mean difficulty level of 1.46 syllabic intensity for a representative sample of teacher tests, the null hypothesis was rejected.

The Spearman rank correlation coefficient was used to test the third hypothesis statistically:

3. There will be no statistically significant difference between the performance of a group of students from specified high schools on a nondictation State Civil Service shorthand test and a selected teacher-type classroom shorthand dictation test.

Since a Spearman rank correlation coefficient of .60 at the .001 level of significance was calculated between the scores of a group of students on a teacher-type, orally dictated shorthand test and a Civil Service nondictation shorthand test, the null hypothesis was accepted.

Findings Resulting From an Analysis of State Civil Service Tests and Testing Techniques

1. State Civil Service Commissions administered entry-level stenographic examinations regularly within their states in a number of geographic locations. A majority of the states gave tests to graduating stenographic students in the high schools. In the majority of instances, a three-minute, orally dictated test was given at a speed of 80 words per minute allowing transcription periods of either three minutes or twenty minutes. Two large states used a nondictation type of test with a fill-in type of transcript which was machine-scored. A few states had adopted the fill-in type of transcript used in connection with an orally dictated test.
2. Most of the states included the following as parts of their stenographic examinations: typing speed and accuracy, English usage and spelling, general clerical and general information tests.
3. A majority of the states reported the use of the standard word or syllabic intensity as a measurement of dictation materials. However, some states used actual word counts, measurement by judgment, or no measurement at all.

4. A majority of the states requested some assistance from the Federal Government in preparing their tests. A majority of the states also used business education books and magazines as a source of testing materials.
5. Many states reported a percent of correct answers according to a predetermined scale as their criterion for determining passing scores, while fewer states used accuracy levels. Special formulas or maximum number of errors were used for scoring by most of the states. States using accuracy levels reported a range of levels from 70 percent to 97.5 percent.

   Most of the states recognized the need to change passing scores when there was a change in the demand for stenographic help. There were no great changes in the levels of passing scores within the past two years, but the long term trend had been to lower standards.
6. Most of the states kept their shorthand dictation materials reasonably current by changing their tests within a period of five years or less; however, a large percentage (30 percent) had not updated their materials for a period of from six to thirty years. A majority of the states rotated their tests at regular intervals.

7. States were interested in easily administered and easily scored tests, provided the tests met good testing standards.
8. Hand-scoring methods were used most frequently; however, there was some evidence of fill-in transcripts and of machine-scoring methods.
9. There were thirty percent or more of the applicants who did not pass the stenographic tests as reported by 63.27 percent of the states.

Findings Resulting from an Analysis of Public High School Advanced Shorthand and Transcription Teachers' Tests and Testing Techniques

1. The most frequently used type of test reported by advanced shorthand and transcription teachers was the three-minute or the five-minute, orally dictated test with thirty to thirty-five minutes allowed for a complete typewritten transcript.
2. Advanced shorthand teachers reported speed requirements that ranged from 120 words per minute for an A grade to 80 words per minute for a D grade at the 95 percent accuracy level.

   Transcription teachers reported shorthand writing speeds when stressing the mailability of letters were varied and ranged from a high of 120 words per minute for an A grade to 80 words per minute or less for a D grade at the 95 percent accuracy level. These writing speeds had to be

demonstrated three times in order to receive the grade.

Over 65 percent of the transcription teachers who graded on the basis of shorthand speed at the 95 percent accuracy level for the transcription required speeds, performance times, and dictation periods for the various grade levels that were similar to those of advanced shorthand teachers.

IV. Conclusions

Conclusions Based Upon Findings Concerning State Civil Service Tests and Testing Techniques

1. Standards set by Civil Service Commissions were in line with the general needs of their various state offices. There was uniformity in testing throughout each of the states with no costly duplication of testing procedures and requirements by other agencies.

   The speed requirements for shorthand dictation as reported by the states were not excessive and the properly trained high school graduate should be able to pass this portion of the test.

   Provisions made for testing in familiar areas, such as the local high school, should place young applicants at ease.

2. There seemed to be adequate testing coverage for the stenographic positions.
3. There seemed to be doubt concerning the adequacy of the measurement devices used in determining the difficulty of material used for dictation purposes; namely, syllabic intensity and the standard word. Most authorities question the use of actual word counts, measurement by judgment, or no measurement at all.
4. The majority of the states were using adequate sources for the selection of their dictation materials. The Federal Government also provided excellent assistance to all states requesting testing materials.
5. Presumably, the states were setting standards according to their own needs by determining passing scores applicable to their own tests.
6. Since the majority of the states have kept their Civil Service stenographic tests current, it is presumed that the states which have not changed their tests within a five-year period found that the tests were adequate for their needs.
7. Presumably states were interested in easily scored and easily administered tests in order to obtain test results quickly.

8. Presumably states were satisfied with their present method of scoring Civil Service stenographic tests or were unaware of some of the newer automated devices that could be used.
9. High failure rates in the State Civil Service stenographic tests may have been due to a number of reasons: poorly qualified test proctors, poor testing conditions and equipment, or the lack of qualifications on the part of the applicant.

Conclusions Based Upon the Findings Concerning Advanced Shorthand and Transcription Teachers' Tests and Testing Techniques

1. Timed, oral dictation with a timed, complete, typewritten transcript--as used in the classroom by advanced shorthand and transcription teachers--was the best skill measurement and the most effective way of preparing the student for the office environment.
2. Standards set by advanced shorthand and transcription teachers seemed to be within the range recommended by authorities.
3. An adequate selection of testing materials was being made by most of the teachers through the use of specially prepared, published articles.
4. Teachers were using difficulty measurements (standard word and syllabic intensity) that have

been widely accepted at the present time by publishers and teachers alike. The few teachers reporting no measurement were overlooking the importance of knowing the usefulness of the level of difficulty of the material in order to adjust the dictation from easy to difficult at the various progress levels of learning.

5. The emphasis on English usage in advanced shorthand and transcription classes was an indication that there was an integration of the shorthand skill with other tools needed for effective communication.
6. It seems likely that hand-scoring methods were being used by teachers because there was no other method available or no tests had been developed in which other methods could be used.
7. Presumably advanced shorthand and transcription teachers were setting production standards according to their own needs.
8. Teachers appeared to be giving adequate training in preparing students to pass Civil Service examinations with one exception. They had chosen dictation materials and other aids that were in line with the requirements of the Civil Service Commissions, except that the syllabic intensity of their materials was of lesser difficulty.

V. Recommendations

Recommendations to State Civil Service Commissions with Regard to Tests and Testing Techniques

It is recommended that:

1. Civil Service testing personnel of the individual states should meet regularly with local, high school business teachers to review types of tests, testing procedures, methods of scoring, and standards used in the state stenographic tests in order that both groups may be benefited.

   More Civil Service stenographic testing should be conducted in the high schools in order to get a good selection of job applicants. This also has the advantage of coordinating testing procedures with those of the school. Eventually, through close cooperation on the part of the state and business teachers, it might be possible to dispense with the Civil Service shorthand testing procedure with regard to the students; and the business teacher could report the skill proficiency of the student. (The Federal Government is already accepting high school teachers' recommendations regarding skill competencies of job applicants.)

2. States should continue examining stenographic applicants in related areas, but they should review these areas periodically in accordance with what recognized authorities recommend as the most recent practices.
3. All states should scrutinize their concept of difficulty measurement of the dictation materials used to see if it is the most accurate measurement available.
4. States should continue using their present sources for the selection of dictation materials.
5. Passing scores of Civil Service stenographic applicants should be reviewed regularly in line with the needs of the states.
6. States that are slow to adopt new stenographic testing materials should review their tests periodically as to both validity and reliability and to determine whether the tests are in harmony with the findings of recent research. All outmoded materials should be discarded and new sections developed.
7. States should acquaint themselves with the newer methods of scoring tests through the use of automated equipment.
8. States should examine their testing conditions to make sure that job applicants are not handicapped

in any way by poor equipment or improper supervision during the testing process.

Recommendations to Public High School Advanced Shorthand and Transcription Teachers

It is recommended that:

1. The timed dictation and timed transcription test should be used for evaluation purposes, and office style dictation should be used sparingly and only after the students and the teacher are sufficiently competent to use it. The use of word lists for testing purposes should be eliminated or curtailed for the reason that the value of this type of testing is questionable.
2. Teachers should be aware of the standards being set for the A, B, C, and D grade levels by authorities and by the majority of business teachers. Teachers should establish their own flexible and realistic standards with consideration given to the following: abilities of the student, policies set by the business department, and the needs of the community.
3. Teachers should continue the use of specially prepared materials for dictation purposes when testing. The Business Teacher magazine used by most of the teachers is highly recommended.

4. Teachers should utilize more dictation materials which indicate the various levels of difficulty. By presenting progressively difficult materials, the student is stimulated toward better performance.
5. An emphasis on English usage should be continued within the advanced shorthand and transcription courses for the reason that production of mailable transcripts is the ultimate goal of such classes.
6. One way of eliminating hand-scoring methods is to develop objective-type tests. Teachers should recognize the use of the objective, fill-in type test as an adjunct to the traditional testing method and through such usage not only reduce the time used in correcting students' work, but also give the students an opportunity to experience a different testing situation.
7. The standard for amount of production in transcription set by the teacher should be attainable by most of the students. A grade scale should be established that requires a minimum of arithmetic computation. Work produced by the student at the end of the semester should be weighted more heavily than that completed at the beginning.

8. Public high school teachers of advanced shorthand and transcription should continue training students to pass State Civil Service stenographic examinations.

Recommendations to Both State Civil Service Commissions and Public High School Advanced Shorthand and Transcription Teachers

It is recommended that:

1. Innovative practices in testing methods should become an integral part of the states' procedure with allowance made for adequate safeguards. Teachers should accept the philosophy that innovation and experimentation will be the task of the teacher in the future in line with the ever-changing nature of the education process.
2. Public high school teachers should work closely with Civil Service Commissions concerning testing of the stenographic skills in order to become more familiar with Civil Service requirements, testing techniques, testing situations, and placement classifications.
3. Teachers should offer their assistance, if necessary, to Civil Service Commissions in evaluating tests used to measure stenographic abilities.

General Recommendations

1. Further study should be completed regarding the use of the nondictation type of stenographic test, the fill-in type of transcript, and other types of tests used in testing stenographic skills.
2. Further study should be completed regarding the use of a better measure of difficulty of dictation materials rather than the use of syllabic intensity.
3. Public high school business education teachers should use progressively more difficult dictation materials for classroom exercises and for testing purposes.

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APPENDIX A

LETTERS OF INQUIRY TO STATES

First Letter of Inquiry to States

MICHIGAN STATE UNIVERSITY EAST LANSING · MICHIGAN 48823

COLLEGE OF BUSINESS

DEPARTMENT OF BUSINESS LAW AND OFFICE ADMINISTRATION · EPPLEY CENTER

April 19, 1966

xxxxxxxxxxxxxx
xxxxxxxxxxxxxx
xxxxxxxxxxxxxx

Attention: Director of Stenographic Examinations

Gentlemen:

Would you be willing to send us a copy of the shorthand portion (other than current) of your stenographic Civil Service test for purposes of research?

In the interest of upgrading the performance of applicants for Civil Service stenographic examinations in the area of shorthand and of improving shorthand testing in the high schools throughout the country, we are making an examination and an analysis of the various testing procedures used in selected high schools and in the State Civil Service examinations.

Through an analysis and comparison of the testing procedures used by the various Civil Service Agencies with those commonly used by high school teachers, we hope to help teachers prepare their students more adequately for Civil Service positions.

If you are willing to have us examine such portions of your other than current tests, please check "yes" on the enclosed card.

Very sincerely yours,

Helen H. Green, Professor of Business Education
218 Eppley, Michigan State University

Mildred L. Williams, Assistant Professor
Business Division, Lansing Community College
Lansing, Michigan

mlw

Enc. 1

Letter with Enclosed Questionnaire and Request for Test

MICHIGAN STATE UNIVERSITY EAST LANSING · MICHIGAN 48823

COLLEGE OF BUSINESS

DEPARTMENT OF BUSINESS LAW AND OFFICE ADMINISTRATION · EPPLEY CENTER

May 30, 1966

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xxxxxxxxxxxxxx

Dear Mr. xxxxxxxxxxxxxx

Re: Civil Service Stenographic Examinations

Thank you for your recent affirmative reply to our letter requesting a copy (other than current) of the shorthand portion of your stenographic Civil Service test to be used for purposes of research.

One of the purposes of this research study is to discover the kinds of shorthand tests being given in the various states by Civil Service Commissions in order that testing by high school teachers might be better coordinated with Civil Service tests, and thus improved.

Please complete the enclosed questionnaire, enclose it together with a copy of your test, and return in the enclosed, stamped, self-addressed envelope as soon as possible. Your help is appreciated. A copy of the results of this study will be available to you upon request.

Very sincerely yours,

Helen H. Green, Professor of Business Education
Michigan State University, 218 Eppley

Mildred L. Williams, Assistant Professor
Business Division, Lansing Community College
Lansing, Michigan

mlw

Enc. 2

Follow-up Letter to States

MICHIGAN STATE UNIVERSITY EAST LANSING · MICHIGAN 48823

COLLEGE OF BUSINESS

DEPARTMENT OF BUSINESS LAW AND OFFICE ADMINISTRATION · EPPLEY CENTER

March 23, 1967

xxxxxxxxxxxxxx
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Dear xxxxxxxxxxxxx:

We hope that you will be able to help us complete our research study entitled, "An Analysis and Comparison of the Shorthand Section of the Civil Service Stenographic Examinations and High School Business Teacher Shorthand Tests." Can you complete the enclosed questionnaire and send us a copy (current or old) of the shorthand portion of your entrance stenographic Civil Service test.

We have had almost 100% cooperation from the various Civil Service Agencies of all of the states, and have guaranteed that all materials will be held in strict confidence. They will be returned to you or destroyed upon the completion of the study, and no state will be identified by name. The Federal Government has cooperated by supplying us with testing materials used by states that request their materials.

It is hoped that this study will result in improved testing methods for business educators in addition to an understanding of Civil Service testing.

Your cooperation in this study will be greatly appreciated.

Sincerely yours,

Dr. Helen H. Green, Professor of Business Education
218 Eppley, Department of Business Law and Office Administration

Mrs. Mildred L. Williams, Assistant Professor
Business Division, Lansing Community College
Lansing, Michigan

mlw

Letter of Acknowledgment to States

MICHIGAN STATE UNIVERSITY EAST LANSING · MICHIGAN 48823

COLLEGE OF BUSINESS
DEPARTMENT OF BUSINESS LAW AND OFFICE ADMINISTRATION · EPPLEY CENTER

October 31, 1967

xxxxxxxxxxxx
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xxxxxxxxxxxx:

Thank you for sending us your copy of the shorthand portion of the State Civil Service stenographic test, which was requested in connection with a research study in stenographic testing throughout the country. Enclosed is a short questionnaire that we would like to have you complete and return in the self-addressed, stamped envelope.

Your assistance in this study is appreciated, and all information that you supply us will be held in confidence. Upon completion of the study all materials supplied by you will be destroyed or returned to you by registered mail, according to your directions. A copy of the study will be available to you upon request.

Sincerely yours,

Dr. Helen H. Green, Professor of Business Education
218 Eppley Center, Michigan State University

Mrs. Mildred Williams, Assistant Professor
Business Division, Lansing Community College
Lansing, Michigan

mlw

Enc. 2

APPENDIX B

QUESTIONNAIRE TO STATE CIVIL SERVICE COMMISSIONS

QUESTIONNAIRE TO STATE CIVIL SERVICE AGENCIES

1. Does your state agency give a State Civil Service examination for stenographers?
   (1) ___Yes
   (2) ___No

2. If yes, what are the various step-levels for which individuals may be tested? (Check all appropriate items. If your classifications differ, please insert proper titles.)
   (1) ___Entry Level _____
   (2) ___Intermediate Level _____
   (3) ___Advanced Level _____
   (4) ___Secretarial Level _____
   (5) ___Court Reporter _____
   (6) ___Other, Explain _____

3. How many times a year are these tests given? (Check appropriate items.)
   (1) ___Semi-monthly
   (2) ___Monthly
   (3) ___Quarterly
   (4) ___Yearly
   (5) ___Other, Explain _____

4. Where are these tests given? (Check appropriate items.)
   (1) ___Capital City
   (2) ___Various Main Cities
   (3) ___High Schools
   (4) ___Other, Explain_____

5. Is the same test given to all applicants during a six-month period or is there a random choice of approved tests during this period? (Check one item.)
   (1) ___Same Test
   (2) ___Choice of Tests

6. What are the various parts of the stenographic Civil Service test? (Check appropriate items.)
   (1) ___General Information Test (For example, Wonderlick etc.)
   (2) ___General Clerical Test (For example, Name & Number comp.)
   (3) ___Typing speed test
   (4) ___Typing accuracy test
   (5) ___Shorthand speed test
   (6) ___Shorthand accuracy test
   (7) ___English Usage and Spelling Test
   (8) ___Other, Explain_____
   _____

7. What are your speed standards for each step-level of the shorthand portion of the stenographic Civil Service test? (Check appropriate items. If your classifications differ, insert proper titles.)

(1) Entry Level _____
- (a) ___80 words per minute
- (b) ___100 words per minute
- (c) ___Other, explain_____

(2) Intermediate Level_____
- (a) ___100 words per minute
- (b) ___110 words per minute
- (c) ___120 words per minute
- (d) ___Other, explain_____

(3) Advanced Level_____
- (a) ___100 words per minute
- (b) ___110 words per minute
- (c) ___120 words per minute
- (d) ___Other, explain_____

(4) Secretarial Level_____
- (a) ___120 words per minute
- (b) ___Other, explain_____

(5) Court Reporter_____
- (a) ___150 words per minute
- (b) ___175 words per minute
- (c) ___200 words per minute
- (d) ___Other, explain_____

8. What types of shorthand tests do you use in the shorthand portion of the State Civil Service stenographic test? (Check one item.)
- (1) ___Orally dictated test at certain speeds and transcribed at the typewriter.
- (2) ___Printed test used for copying shorthand and transcribed at the typewriter.
- (3) ___Orally dictated test at certain speeds and a fill-in type transcript.
- (4) ___Printed test used for copying shorthand and a fill-in type transcript.
- (5) ___Other, explain_____
_____

9. How many minutes are allowed for writing shorthand from dictation or printed copy? (Check one item.)
- (1) ___3 minutes
- (2) ___4 minutes
- (3) ___5 minutes
- (4) ___6 minutes
- (5) ___Other, explain_____

10. How many minutes are allowed for transcribing shorthand notes at the typewriter or fill-in type form? (Check one item.)
(1)___20 minutes
(2)___25 minutes
(3)___30 minutes
(4)___35 minutes
(5)___Other, explain_____

11. What are your accuracy standards for the shorthand transcript of the stenographic Civil Service test? (Check appropriate item.)
(1)___95% accuracy
(2)___98% accuracy
(3)___Mailable copy
(4)___Other, explain_____

12. What methods do you use for scoring the shorthand portion of the Civil Service stenographic test? (Check appropriate items.)
(1)___Machine-scored
(2)___Hand-scored
(3)___Combination of both 1 and 2
(4)___Other, explain_____

13. How do you determine a passing score for the shorthand portion of the stenographic Civil Service test? (Check appropriate items.)
(1)___% of correct answers according to scale
(2)___Arbitrary cut-off point for needs of stenographers
(3)___Other, explain_____
(You may include any previously prepared explanatory materials regarding scoring process.)

14. How many times within the last two years have you changed your level of passing score? (Check one.)
(1)___None
(2)___Once
(3)___Twice
(4)___Three to Five times
(5)___Other, explain_____

15. Have your standards gone up or down? (Check one item.)
(1)___Up
(2)___Down
(3)___Other, explain_____

16. What factors are involved in a change of passing score? (Check appropriate item.)
(1)___Needs of the market
(2)___Change of standards
(3)___Change of test
(4)___Other, explain_____

17. How do you determine the difficulty of the material that is used for the shorthand section of your test? (Check one item.)
(1)___Standard Word
(2)___Actual Word Count
(3)___Shorthand Stroke Count
(4)___Syllabic Intensity
(5)___No Measurement
(6)___Other measurement, explain_____
_____

18. From what sources do you select the material used for the shorthand dictation in the test? (Check appropriate items.)
(1)___Business Education Books
(2)___Business Education Magazines
(3)___Composed from Word Lists, etc.
(4)___Assistance from other State Civil Service Agencies
(5)___Assistance from State Unemployment Services
(6)___Assistance from Federal Government
(7)___Other, explain_____

19. What percentage of applicants pass the test? (Check appropriate item.)
(1)___20 to 30%
(2)___31 to 40%
(3)___41 to 50%
(4)___51 to 60%
(5)___61 to 70%
(6)___71 to 80%
(7)___Other, explain_____

20. Why did you decide to use the type of shorthand test that you are now using? (Check appropriate items.)
(1)___Easy to administer
(2)___Easy to score
(3)___No other measurement available
(4)___Other, explain_____

21. How often are tests changed for the shorthand portion of the test?
(1)___Yearly
(2)___Every two years
(3)___Whenever need arises
(4)___Other, explain_____

22. Approximately how many years have you been using your current test? (Check one item.)
(1)___Less than two years
(2)___Two to five years
(3)___Six to eight years
(4)___Nine to eleven years
(5)___Other, explain_____

23. You may make any additional comments about the shorthand portion of your stenographic Civil Service test below.

APPENDIX C

LETTERS TO TEACHERS

MICHIGAN STATE UNIVERSITY EAST LANSING · MICHIGAN 48823

COLLEGE OF BUSINESS

DEPARTMENT OF BUSINESS LAW AND OFFICE ADMINISTRATION · EPPLEY CENTER

May 3, 1967

Dear Business Educator:

May we ask your cooperation in completing the two accompanying questionnaires regarding shorthand and transcription testing practices. This is a part of a research project which involves a comparative study of business educator's classroom testing practices and State Civil Service stenographic testing methods.

From the results of this study we hope to help teachers and students by finding better methods of evaluating stenographic skills.

Please check the items in the questionnaires and return in the enclosed, stamped, self-addressed envelope. If you are not involved in teaching either Advanced Shorthand or Transcription, please give these questionnaires to another business educator.

Your help is greatly appreciated.

Sincerely yours,

Dr. Helen H. Green, Professor of Business Education
218 Eppley, Department of Business Law and Office Administration

Mrs. Mildred L. Williams, Assistant Professor
Business Division, Lansing Community College
Lansing, Michigan

mw

MICHIGAN STATE UNIVERSITY EAST LANSING · MICHIGAN 48823

COLLEGE OF BUSINESS
DEPARTMENT OF BUSINESS LAW AND OFFICE ADMINISTRATION · EPPLEY CENTER

May 23, 1967

Dear Business Educator:

May we ask your cooperation in completing the two accompanying questionnaires regarding shorthand and transcription testing practices. This is a part of a research project which involves a comparative study of business educator's classroom testing practices and State Civil Service stenographic testing methods.

From the results of this study we hope to help teachers and students by finding better methods of evaluating stenographic skills.

Please check the items in the questionnaires and return in the enclosed, stamped, self-addressed envelope. If you are not involved in teaching either Advanced Shorthand or Transcription, please give these questionnaires to another business educator.

Your help is greatly appreciated.

Sincerely yours,

Dr. Helen H. Green, Professor of Business Education
218 Eppley, Department of Business Law and Office Administration

Mrs. Mildred L. Williams, Assistant Professor
Business Division, Lansing Community College
Lansing, Michigan

mw

MICHIGAN STATE UNIVERSITY EAST LANSING · MICHIGAN 48823

COLLEGE OF BUSINESS
DEPARTMENT OF BUSINESS LAW AND OFFICE ADMINISTRATION · EPPLEY CENTER

May 22, 1967

Dear Business Educator:

Earlier this month you received questionnaires regarding your testing practices in Advanced Shorthand and/or Transcription. Your answers are important, so we urge you to complete these questionnaires and return them as soon as possible. If you are unable to complete them, please give them to another high school business educator.

Your replies to these questionnaires will enable us to make an accurate evaluation of the testing practices in high school classrooms throughout the country; which, in turn, will make possible a comparison of your testing practices with those of the various State Civil Service testing agencies.

As a result of this research, we hope that improvements can be made toward better techniques of evaluating skill in stenography.

You need not sign your name if you do not wish to be identified, but we are interested in your replies.

Your help is greatly appreciated.

Sincerely yours,

Dr. Helen H. Green, Professor of Business Education
Department of Business Law and Office Administration
218 Eppley, Michigan State University, East Lansing, Michigan

Mrs. Mildred L. Williams, Assistant Professor
Business Division, Lansing Community College
Lansing, Michigan

mw

APPENDIX D

QUESTIONNAIRES TO TEACHERS

NAME OF SCHOOL_____ YOUR NAME_____
ADDRESS_____ POSITION_____

QUESTIONNAIRE REGARDING HIGH SCHOOL TESTING PRACTICES IN ADVANCED SHORTHAND AND TRANSCRIPTION

NOTE: Part I of this questionnaire is for teachers of Advanced Shorthand. Part II is for teachers of Transcription. Please complete only the part which applies to you. If you teach both courses, please complete both Parts I and II.

PART I
ADVANCED SHORTHAND CLASSES

1. What kinds of shorthand tests do you give to your students in ADVANCED SHORTHAND CLASSES? (Check the most frequently used types.)
   (1)___Shorthand written from oral dictation of business letters by the teachers.
   (2)___Shorthand written from oral dictation of business letters recorded on tape or other recording device.
   (3)___Shorthand written by copying from printed dictation material.
   (4)___Shorthand written from orally dictated or recorded word lists.
   (5)___Shorthand written from printed word lists.
   (6)___Other, explain_____

2. What topics of study do you stress, in addition to shorthand skills, in your ADVANCED SHORTHAND CLASSES? (Check appropriate items.)
   (1)___Typing speed
   (2)___Typing accuracy
   (3)___English usage (Including spelling, punctuation, capitalization, syntax, and syllabication.)
   (4)___Clerical skills
   (5)___Other, explain_____

3. How do you determine the difficulty of the material that you use for your shorthand tests in your ADVANCED SHORTHAND CLASSES? (Check the one method used most frequently.)
   (1)___Standard Word (28 syllables = 20 shorthand words)
   (2)___Actual Word Count
   (3)___Shorthand Stroke Count
   (4)___Syllabic Intensity
   (5)___No Measurement
   (6)___Other measurement, explain_____
   _____

4. If the difficulty of the material used in your ADVANCED SHORTHAND CLASSES is determined by syllabic intensity measurement, what is the figure most frequently used? (Check ONE item.)
   (1)___EASY (Less than 1.4 Syllabic Intensity)
   (2)___AVERAGE (1.4 Syllabic Intensity)
   (3)___DIFFICULT (1.5 to 1.6 Syllabic Intensity)
   (4)___EXTREMELY DIFFICULT (Greater than 1.6 Syllabic Intensity)
   (5)___Don't Know

5. From what sources do you select the materials used for the shorthand dictation tests that you give in your ADVANCED SHORTHAND CLASSES? (Check most frequently used sources.)
   (1)___Business Education Books
   (2)___Business Education Magazines
   (3)___Composed from Word Lists, etc.
   (4)___Composed by Self
   (5)___Other, explain_____
   _____

6. If you select tests from books or magazines, in your ADVANCED SHORTHAND CLASSES, please give reference of representative publications, where tests may be located, including page numbers. (For example, Business Teacher, etc.)

7. Why did you decide to use the type of shorthand test that you are now using in your ADVANCED SHORTHAND CLASSES? (Check appropriate items.)
   (1) ___Easy to administer
   (2) ___Easy to score
   (3) ___Best kind of skill measurement available
   (4) ___Other, specify_____

8. What methods do you use for scoring the shorthand tests that you give in your ADVANCED SHORTHAND CLASSES? (Check the most frequently used methods.)
   (1) ___Hand scored by self
   (2) ___Hand scored by student
   (3) ___Combination of Items 1 and 2
   (4) ___Machine scored
   (5) ___Other, explain_____

9. What type of shorthand transcripts do you require most frequently in your ADVANCED SHORTHAND CLASSES? (Check appropriate item.)
   (1) ___Complete typewritten transcript
   (2) ___Complete handwritten transcript
   (3) ___Fill-in blank transcript, typewritten
   (4) ___Fill-in blank transcript, handwritten
   (5) ___Fill-in blank transcript, machine-scored
   (6) ___Other, explain_____

10. What are your accuracy standards for the transcript of your shorthand dictation tests in your ADVANCED SHORTHAND CLASSES? (Check appropriate item.)
   (1) ___95% accuracy
   (2) ___98% accuracy
   (3) ___Mailability
   (4) ___Other, explain_____

11. What are the minimum standards in your ADVANCED SHORTHAND CLASSES at the grade A level? (Please check one item in each column, or fill in, if necessary.)

SPEED REQUIRED	LENGTH OF DICTATION TIME	LENGTH OF TRANSCRIPTION TIME	% OF ACCURACY	TIMES PERFORMED
(1) ___120 wpm.	(5) ___1 min.	(9) ___25 min.	(14) ___95%	(18) ___Once
(2) ___130 wpm.	(6) ___3 min.	(10) ___30 min.	(15) ___97%	(19) ___Twice
(3) ___140 wpm.	(7) ___5 min.	(11) ___35 min.	(16) ___98%	(20) ___Three
(4) ___Other, specify	(8) ___Other, specify	(12) ___Not specified	(17) ___Other, specify	(21) ___Other, specify
		(13) ___Other, specify		

12. What are the minimum standards in your ADVANCED SHORTHAND CLASSES at the grade B level? (Please check one item in each column, or fill in, if necessary.)

SPEED REQUIRED	LENGTH OF DICTATION TIME	LENGTH OF TRANSCRIPTION TIME	% OF ACCURACY	TIMES PERFORMED
(1) ___100 wpm.	(5) ___1 min.	(9) ___20 min.	(15) ___95%	(19) ___Once
(2) ___110 wpm.	(6) ___3 min.	(10) ___25 min.	(16) ___97%	(20) ___Twice
(3) ___120 wpm.	(7) ___5 min.	(11) ___30 min.	(17) ___98%	(21) ___Three
(4) ___Other, specify	(8) ___Other, specify	(12) ___35 min.	(18) ___Other, specify	(22) ___Other, specify
		(13) ___Not specified		
		(14) ___Other, specify		

13. What are the minimum standards in your ADVANCED SHORTHAND CLASSES at the grade C level? (Please check one item in each column, or fill in, if necessary.)

SPEED REQUIRED	LENGTH OF DICTATION TIME	LENGTH OF TRANSCRIPTION TIME	% OF ACCURACY	TIMES PERFORMED
(1)___ 80 wpm.	(5)___1 min.	(9)___20 min.	(15)___95%	(19)___Once
(2)___ 90 wpm.	(6)___3 min.	(10)___25 min.	(16)___97%	(20)___Twice
(3)___100 wpm.	(7)___5 min.	(11)___30 min.	(17)___98%	(21)___Three
(4)___Other, specify	(8)___Other, specify	(12)___35 min.	(18)___Other, specify	(22)___Other, specify
		(13)___Not specified		
		(14)___Other, specify		

14. What are the minimum standards in your ADVANCED SHORTHAND CLASSES at the grade D level? (Please check one item in each column, or fill in, if necessary.)

SPEED REQUIRED	LENGTH OF DICTATION TIME	LENGTH OF TRANSCRIPTION TIME	% OF ACCURACY	TIMES PERFORMED
(1)___60 wpm.	(5)___1 min.	(9)___20 min.	(15)___95%	(19)___Once
(2)___70 wpm.	(6)___3 min.	(10)___25 min.	(16)___97%	(20)___Twice
(3)___80 wpm.	(7)___5 min.	(11)___30 min.	(17)___98%	(21)___Three
(4)___Other, specify	(8)___Other, specify	(12)___35 min.	(18)___Other, specify	(22)___Other, specify
		(13)___Not specified		
		(14)___Other, specify		

15. If other methods of testing are used, please describe by filling in the information below or on the other side of this page.

KIND OF TEST USED	TIME ALLOWED FOR WRITING SHORTHAND	TIME ALLOWED FOR TRANSCRIBING SHORTHAND	METHOD OF SPEED MEASUREMENT

16. Do you prepare your students in any way for taking State Civil Service tests? (Check one item.)
(1)___Yes
(2)___No

17. If you answered "yes" to the previous question, what specifically do you do? (Check one or more items.)
(1)___Use Civil Service Sample Test Booklets.
(2)___Give dictation similar to the State tests given in area.
(3)___Secure old State Civil Service tests for student practice.
(4)___Use old Federal Government tests for student practice.
(5)___Other, explain_____

NAME OF SCHOOL_____ YOUR NAME_____
ADDRESS_____ POSITION_____

QUESTIONNAIRE REGARDING HIGH SCHOOL TESTING PRACTICES IN ADVANCED SHORTHAND AND TRANSCRIPTION

NOTE: Part I of this questionnaire is for teachers of ADVANCED SHORTHAND. Part II is for teachers of TRANSCRIPTION. Please complete only the part which applies to you. If you teach both courses, please complete both Parts I and II.

PART II
TRANSCRIPTION CLASSES

1. What types of dictation tests do you give to your students in Transcription classes? (Check most frequently used type of test.)
   (1)___Timed dictation, transcribed at typewriter under timing.
   (2)___Timed dictation, transcribed at typewriter, no timing.
   (3)___Timed dictation, transcribed in longhand under timing.
   (4)___Timed dictation, transcribed in longhand, no timing.
   (5)___Timed dictation, transcribed with fill-in answer sheet, timed.
   (6)___Timed dictation, transcribed with fill-in answer sheet, no timing.
   (7)___Office Style Dictation, transcribed at typewriter, under timing.
   (8)___Office Style Dictation, transcribed at typewriter, no timing.
   (9)___Other, explain_____

2. From what sources do you select the dictation materials used for transcription tests in your Transcription classes? (Check most frequently used sources.)
   (1)___Business education books
   (2)___Business education magazines
   (3)___Composed from word lists, etc.
   (4)___Composed by self
   (5)___Teacher's manual
   (6)___Other, explain_____

3. How do you determine the difficulty of the dictation material that you use for your transcription tests in your Transcription classes? (Check the one method used most frequently.)
   (1)___Standard Word (28 syllables = 20 shorthand words)
   (2)___Actual Word Count
   (3)___Shorthand Stroke Count
   (4)___Syllabic Intensity
   (5)___No Measurement
   (6)___Other measurement, explain_____

4. If the difficulty of the material used is determined by syllabic intensity measurement, what is the figure most frequently used in terms of the following scale? (Check one item.)
   (1)___EASY (Less than 1.4 Syllabic Intensity)
   (2)___AVERAGE (1.4 Syllabic Intensity)
   (3)___DIFFICULT (1.5 to 1.6 Syllabic Intensity)
   (4)___EXTREMELY DIFFICULT (Greater than 1.6 Syllabic Intensity)
   (5)___Don't Know

5. From what materials do your students transcribe in your Transcription class? (Check appropriate items.)
   (1)___Student's own shorthand notes taken from dictation.
   (2)___Shorthand plates found in textbooks.
   (3)___Other, explain_____

6. Which of the following do you teach or stress in your Transcription classes? (Check one or more items in the first column. If possible, indicate in the second column the approximate percentage of time spent on each of the items checked in column 1.

ITEMS STRESSED	APPROXIMATE % OF TIME SPENT
(1) ___ Transcription accuracy	(1) _____ %
(2) ___ Transcription speed	(2) _____ %
(3) ___ Typing accuracy	(3) _____ %
(4) ___ Typing speed	(4) _____ %
(5) ___ Letter placement	(5) _____ %
(6) ___ Shorthand theory	(6) _____ %
(7) ___ Shorthand speed	(7) _____ %
(8) ___ Taking dictation	(8) _____ %
(9) ___ English usage (spelling, punctuation, capitalization and syllabication)	(9) _____ %
(10) ___ Clerical skills	(10) _____ %
(11) ___ Typewriter manipulations	(11) _____ %
(12) ___ Erasing and correcting	(12) _____ %
(13) ___ Proofreading	(13) _____ %
(14) ___ Preparation for Civil Service tests	(14) _____ %
(15) ___ Preparation for other employment tests	(15) _____ %
(16) ___ Other, explain _____	(16) _____ %
	100% Total

7. Which of the following items are components included in your final grade in Transcription? (Check one or more items in the first column. If possible, indicate in the second column the approximate percentage of weight given on the final grade to each of the items checked in column 1.

COMPONENTS INCLUDED IN GRADE	% OF WEIGHT GIVEN
(1) ___ Shorthand Speed	(1) _____ %
(2) ___ Transcription Speed	(2) _____ %
(3) ___ Mailability	(3) _____ %
(4) ___ Total Production	(4) _____ %
(5) ___ Related Knowledges	(5) _____ %
(6) ___ Other, explain _____	(6) _____ %

8. If a portion of the final grade for student in Transcription class is based on SHORTHAND SPEED (at the 95% shorthand speed accuracy level), at what shorthand speed must a student take dictation, for that portion of the grade, in order to qualify for the grade levels listed below: (Check one item in each column for the grade level listed.)

A GRADE	B GRADE	C GRADE	D GRADE
(1) ___ 140 wpm.	(6) ___ 120 wpm.	(11) ___ 100 wpm.	(16) ___ 80 wpm.
(2) ___ 130 wpm.	(7) ___ 110 wpm.	(12) ___ 90 wpm.	(17) ___ 70 wpm.
(3) ___ 120 wpm.	(8) ___ 100 wpm.	(13) ___ 80 wpm.	(18) ___ 60 wpm.
(4) ___ Other, specify	(9) ___ Other, specify	(14) ___ Other, specify	(19) ___ Other, specify
(5) ___ No rate	(10) ___ No rate	(15) ___ No rate	(20) ___ No rate

9. If you require a higher accuracy level for the Shorthand Speed Component (see above question), please explain.

10. If a portion of the final grade for a student in Transcription class is based on SHORTHAND SPEED (at 95% shorthand speed accuracy level) what is the interval of time over which the student must be able to maintain the speed mentioned in Question #8, for the grade levels listed below: (Check one item in each column for the grade level listed.)

A GRADE	B GRADE	C GRADE	D GRADE
(1)___1 min.	(5)___1 min.	(9)___1 min.	(13)___1 min.
(2)___3 min.	(6)___3 min.	(10)___3 min.	(14)___3 min.
(3)___5 min.	(7)___5 min.	(11)___5 min.	(15)___5 min.
(4)___Other, specify	(8)___Other, specify	(12)___Other, specify	(16)___Other, specify

11. If a portion of the final grade for a student in Transcription, as determined in Question #10, is based on SHORTHAND SPEED, how many times must a student meet the performance standards listed in Question #8 and 10 above to receive the grades indicated? (Check one item in each column.)

A GRADE	B GRADE	C GRADE	D GRADE
(1)___Once	(5)___Once	(9)___Once	(13)___Once
(2)___Twice	(6)___Twice	(10)___Twice	(14)___Twice
(3)___Three Times	(7)___Three Times	(11)___Three Times	(15)___Three Times
(4)___Other, specify	(8)___Other specify	(12)___Other, specify	(16)___Other, specify

12. If a portion of the final grade for a student in Transcription class is based on MAILABILITY, what shorthand speed must a student attain in transcribing mailable copy in order to qualify for the grade levels listed below: (Check one item in each column for the grade level listed.)

A GRADE	B GRADE	C GRADE	D GRADE
(1)___140 wpm.	(6)___120 wpm.	(11)___100 wpm.	(16)___80 wpm.
(2)___130 wpm.	(7)___110 wpm.	(12)___ 90 wpm.	(17)___70 wpm.
(3)___120 wpm.	(8)___100 wpm.	(13)___ 80 wpm.	(18)___60 wpm.
(4)___Other, specify	(9)___Other, specify	(14)___Other, specify	(19)___Other, specify
(5)___No speed	(10)___No speed	(15)___No speed	(20)___No speed

13. If a portion of the final grade is based on MAILABILITY as determined in Question #12, how many times must a student meet the performance standards listed in Question #12? (Check one item in each column.)

A GRADE	B GRADE	C GRADE	D GRADE
(1)___Once	(5)___Once	(9)___Once	(13)___Once
(2)___Twice	(6)___Twice	(10)___Twice	(14)___Twice
(3)___Three Times	(7)___Three Times	(11)___Three Times	(15)___Three Times
(4)___Other specify	(8)___Other, specify	(12)___Other, specify	(16)___Other, specify

14. If a portion of the final grade for a student in Transcription class is based on TRANSCRIPTION SPEED, what is the type of transcription material used most frequently? (Check appropriate items or fill-in if necessary.)
(1)___Transcription of straight copy dictation.
(2)___Transcription of letters with errors corrected, no carbon or envelopes.
(3)___Transcription of letters with errors corrected, one carbon, no envelopes.
(4)___Transcription of letters with errors corrected, one carbon, and envelopes.
(5)___Other, explain_____

IF YOU REQUIRE TRANSCRIPTION OF MAILABLE COPY AT SPECIFIED SPEEDS FOR EACH GRADE LEVEL, COMPLETE QUESTION #15.

15. If a portion of the final grade for a student in Transcription class is based on TRANSCRIPTION SPEED, what is the transcription speed that student must attain in producing mailable copy on the various types of material for the various grade levels listed below: (Check one item under each classification for each grade level listed.)

GRADE LEVELS	STRAIGHT COPY DICTATION	LETTERS WITH ERRORS CORRECTED NO CARBON OR ENVELOPES	LETTERS WITH ERRORS CORRECTED ONE CARBON, ONE ENVELOPE	LETTERS WITH ERRORS CORRECTED ONE CARBON NO ENVELOPE	OTHER
A	(1) ___25 wpm. (2) ___30 wpm. (3) ___35 wpm. (4) ___Other, specify	(5) ___25 wpm. (6) ___30 wpm. (7) ___35 wpm. (8) ___Other, specify	(9) ___20 wpm. (10) ___25 wpm. (11) ___30 wpm. (12) ___Other, specify	(13) ___20 wpm. (14) ___25 wpm. (15) ___30 wpm. (16) ___Other, specify	____
B	(17) ___20 wpm. (18) ___25 wpm. (19) ___30 wpm. (20) ___Other, specify	(21) ___20 wpm. (22) ___25 wpm. (23) ___30 wpm. (24) ___Other, specify	(25) ___15 wpm. (26) ___20 wpm. (27) ___25 wpm. (28) ___Other, specify	(29) ___15 wpm. (30) ___20 wpm. (31) ___25 wpm. (32) ___Other, specify	____
C	(33) ___15 wpm. (34) ___20 wpm. (35) ___25 wpm. (36) ___Other, specify	(37) ___15 wpm. (38) ___20 wpm. (39) ___25 wpm. (40) ___Other, specify	(41) ___10 wpm. (42) ___15 wpm. (43) ___20 wpm. (44) ___Other, specify	(45) ___10 wpm. (46) ___15 wpm. (47) ___20 wpm. (48) ___Other, specify	____
D	(49) ___10 wpm. (50) ___15 wpm. (51) ___20 wpm. (52) ___Other, specify	(53) ___10 wpm. (54) ___15 wpm. (55) ___20 wpm. (56) ___Other, specify	(57) ___10 wpm. (58) ___15 wpm. (59) ___20 wpm. (60) ___Other, specify	(61) ___10 wpm. (62) ___15 wpm. (63) ___20 wpm. (64) ___Other, specify	____

(65) ___If no particular speed is required, check this item.

16. If a portion of the final grade for a student in Transcription class is based on percent (%) of MAILABILITY, what dictation procedures do you use when measuring this component? (Check one item.)

(1) ___Dictate at speeds easily attained by every student.
(2) ___Dictate at speeds that force students to write above their normal range.
(3) ___Dictate at varying speeds.
(4) ___Dictate at a combination of the above three items.
(5) ___Other, explain_____

17. Which of the following are included in your definition of MAILABILITY? (Check items or fill-in, if necessary.)

(1) ___Verbatim transcript.
(2) ___Transcript with no changes in factual information (dates, amounts of money.)
(3) ___Transcript with no poor erasures, typographical errors or poor placement.
(4) ___Transcript which closely follows the thought of dictation, errors corrected.
(5) ___Transcript that you would be willing to mail.
(6) ___Other, explain_____

18. If a portion of the final grade for a student in Transcription class is based on MAILABILITY, what percent (%) of the student's graded work must be mailable in order to qualify for the grade levels listed below: (Check one item in each column of grade levels listed.)

A GRADE	B GRADE	C GRADE	D GRADE
Percentage Mailable	Percentage Mailable	Percentage Mailable	Percentage Mailable
(1) ___95%	(5) ___80%	(9) ___65%	(13) ___50%
(2) ___90%	(6) ___75%	(10) ___60%	(14) ___45%
(3) ___85%	(7) ___70%	(11) ___55%	(15) ___40%
(4) ___Other, specify	(8) ___Other, specify	(12) ___Other, specify	(16) ___Other, specify

19. If a portion of the final grade for a student in Transcription class is based on the AMOUNT OF PRODUCTION of Mailable Copy, how do you determine this grade? (Check the appropriate item.)

(1) ___Include all materials transcribed over entire grading period.
(2) ___Include a portion of the materials transcribed over entire grading period.
(3) ___Include selected materials transcribed during a class period.
(4) ___Other, explain_____

20. If a portion of the final grade for a student in Transcription class is based on AMOUNT OF PRODUCTION of Mailable Copy, as in Question #19, how are the standards for the Amount of Production determined? (Check appropriate item.)

(1) ___Previously established standard (Total number of papers transcribed.)
(2) ___Class average (Average number of papers transcribed in class.)
(3) ___Other, explain_____

21. Do you have daily production of letters? (Check one item.)

(1) ___Yes
(2) ___No

22. If a portion of the final grade for a student in Transcription class is based on the AMOUNT OF PRODUCTION of Mailable Copy, as in Questions #19 and 20, what is the speed of dictation of the letters included in the amount of production? (Check one item in each column for the grade level listed.)

A GRADE	B GRADE	C GRADE	D GRADE
(1) ___Untimed	(6) ___Untimed	(11) ___Untimed	(16) ___Untimed
(2) ___120 wpm.	(7) ___110 wpm.	(12) ___100 wpm.	(17) ___90 wpm.
(3) ___110 wpm.	(8) ___100 wpm.	(13) ___ 90 wpm.	(18) ___80 wpm.
(4) ___100 wpm.	(9) ___ 90 wpm.	(14) ___ 80 wpm.	(19) ___Other, specify
(5) ___Other, specify	(10) ___Other, specify	(15) ___Other, specify	

23. If a portion of the final grade for a student in Transcription class is based on formal tests of RELATED KNOWLEDGES, of what do these tests consist? (Check appropriate items.)

(1) ___English Usage (Spelling, punctuation, capitalization, and syllabication.)
(2) ___Letter Placement
(3) ___Proofreading
(4) ___Typing Speed
(5) ___Typing Accuracy
(6) ___Shorthand Speed
(7) ___Shorthand Theory
(8) ___Other, explain_____

24. Do you prepare your students in any way for taking State Civil Service tests, in addition to what is done in Advanced Shorthand? (Check one item.)

(1) ___Yes
(2) ___No

25. If you answered "yes" to the previous question, what specifically do you do? (Check one or more items.)

(1) ___Use Civil Service Sample Test Booklets.
(2) ___Give dictation similar to the State tests given in the area.
(3) ___Secure old State Civil Service tests for student practice.
(4) ___Use old Federal Government tests for student practice.
(5) ___Other, explain_____

APPENDIX E

STATISTICAL TABLES

ANALYSIS OF VARIANCE[a]

SYLLABIC INTENSITY OF STATE STENOGRAPHIC SHORTHAND TESTS

FOR GROUPS I - VI

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Square	F
Among Groups	.10	5	.02	2.00*
Within Groups	.35	32	.01	
Total	.45	37		

* Tabled F = 2.54 (F.95; 5, 32)

[a]William C. Guenther, Analysis of Variance, (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1964.) p. 43.

SUMMARY OF THE DATA[a] USED FOR COMPARISON
OF SYLLABIC INTENSITY MEASUREMENT
AMONG GROUPS I - VI

	Group I	Group II	Group III	Group IV	Group V	Group VI
	X	X	X	X	X	X
	1.50	1.63	1.55	1.49	1.55	1.55
	1.52	1.46	1.55	1.61	1.58	1.67
		1.50	1.72	1.42	1.58	1.62
			1.68	1.48	1.19	1.69
			1.55	1.49	1.56	1.66
			1.81	1.42	1.58	1.69
			1.70		1.51	1.55
			1.43		1.55	
			1.70		1.69	
			1.51		1.64	
Totals	$T._1=3.02$	$T._2=4.59$	$T._3=16.2$	$T._4=8.91$	$T._5=15.43$	$T._6=11.43$
Means	$\bar{x}._1=1.51$	$\bar{x}._2=1.53$	$\bar{x}._3=1.6$	$\bar{x}._4=1.48$	$\bar{x}._5=1.54$	$\bar{x}._6=1.63$
Samples	$n_1 = 2$	$n_2 = 3$	$n_3 = 10$	$n_4 = 6$	$n_5 = 10$	$n_6 = 7$
Variances	$s^2_1=.0002$	$s^2_2=.29$	$s^2_3=.49$	$s^2_4=.48$	$s^2_5=.88$	$s^2_6=.37$

[a]William C. Guenther, Analysis of Variance, (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1964) p. 33.

SYLLABIC INTENSITY MEASUREMENT

BUSINESS TEACHER MAGAZINE ARTICLES

1963-1966 Inclusive

(80 words per minute for 3 minutes)

	1963	1964	1965	1966
January	1.47	1.57	1.45	1.46
February	1.42	1.44	1.51	1.38
March	1.50	1.52	1.52	1.43
April	1.48	1.38	1.40	1.44
May	1.61	1.66	1.42	1.45
June	1.29	1.34	1.55	1.38
NO ARTICLES DURING THE SUMMER MONTHS				
September	1.49	1.56	1.35	1.51
October	1.37	1.43	1.50	1.49
November	1.52	1.56	1.45	1.39
December	1.37	1.61	1.42	1.36

APPENDIX F

PARTICIPATING HIGH SCHOOLS

PARTICIPATING HIGH SCHOOLS IN

RESEARCHER'S EXPERIMENT

1. Everett High School, Lansing, Michigan
2. Eastern High School, Lansing, Michigan
3. Grand Ledge High School, Grand Ledge, Michigan
4. Mason High School, Mason, Michigan
5. Eaton Rapids High School, Eaton Rapids, Michigan
6. Ionia High School, Ionia, Michigan
7. Sexton High School, Lansing, Michigan
8. Waverly High School, Lansing, Michigan

APPENDIX G

DICTATION MATERIAL USED IN EXPERIMENT

DICTATION MATERIAL USED IN EXPERIMENT

80 words per minute for 4 minutes

Dear Mr. Patterson:

No doubt, as an officer of your organization you must make many speeches during the year. After you have completed a speech, do you depart with the feeling that you have made a good impression on your audience? Do you feel that you have put across your message clearly and effectively? If not, may we recommend to you our new book entitled "How to Make an Effective Speech."

In this book, the author enumerates many reasons why bright, intelligent people are often failures as speakers. He goes on to suggest opportunities to correct these difficulties.

As every person realizes, the ability to speak well is a great asset. The person who can speak convincingly has a great advantage over the person who has trouble expressing himself.

"How to Make an Effective Speech" is much more than a book; it is really a course in public speaking. It tells you how you can determine what your weak points are. It then gives definite suggestions on how you should

proceed. You don't have to spend hours studying. A few minutes each day for the next month or two is all that is necessary.

If you would like to have a copy of the book, return the enclosed card. We will then send you the book on approval. You can keep the book for two weeks, during which time you can work with the first three or four chapters. At the end of the two weeks, you decide whether the book is what you need and want. If it is, you send us your check for $5.00. If it is not you place the book back in the container in which it arrived and send it back to us. That will be the end of the transaction. You alone are the judge of the value of the book to you.

Why not take the first step today to becoming an effective speaker? Don't deny yourself, any longer, the satisfaction of knowing that when you make a speech you are a credit to yourself and to your organization.

APPENDIX H

SPEARMAN RANK TEST

R_x RANK X	R_y RANK Y	$(R_x - R_y)^2$	TX	TY
86.50	89.00	6.25	14.00	2.00
86.50	71.50	225.00	8.00	3.00
86.50	71.50	225.00	7.00	3.00
86.50	81.00	30.25	6.00	5.00
86.50	84.00	6.25	4.00	2.00
86.50	81.00	30.25	3.00	3.00
86.50	38.00	2352.25	2.00	2.00
86.50	81.00	30.25	4.00	3.00
86.50	92.50	36.00	2.00	3.00
86.50	75.50	121.00	2.00	3.00
86.50	78.00	72.25	2.00	5.00
86.50	54.00	1056.25	3.00	2.00
86.50	29.50	3249.00	3.00	3.00
76.70	92.50	249.64	2.00	4.00
76.70	87.50	116.64	2.00	2.00
76.70	66.00	114.49	2.00	3.00
86.50	10.50	5776.00	2.00	6.00
30.00	13.50	272.25	.0.00	7.00
25.50	4.00	462.25	.0.00	2.00
24.00	12.00	144.00	.0.00	4.00
23.00	24.00	1.00	.0.00	2.00
34.50	16.00	342.25	.0.00	5.00
39.00	1.00	1444.00	.0.00	3.00
41.50	20.00	462.25	.0.00	4.00
46.50	20.00	702.25	.0.00	2.00
25.50	68.50	1849.00	.0.00	.0.00
22.00	27.00	25.00	.0.00	.0.00
28.00	27.00	1.00	.0.00	.0.00
28.00	63.00	1225.00	.0.00	.0.00
28.00	63.00	1225.00	.0.00	.0.00
76.70	59.00	313.29	.0.00	.0.00
76.70	47.00	882.09	.0.00	.0.00
76.70	90.50	190.44	.0.00	.0.00
76.70	66.00	114.49	.0.00	.0.00
76.70	47.00	882.09	.0.00	.0.00
68.00	79.00	121.00	.0.00	.0.00
68.00	90.50	506.25	.0.00	.0.00
68.00	54.00	196.00	.0.00	.0.00
68.00	47.00	441.00	.0.00	.0.00
68.00	68.50	0.25	.0.00	.0.00
68.00	84.00	256.00	.0.00	.0.00
68.00	75.50	56.25	.0.00	.0.00
61.50	41.50	400.00	.0.00	.0.00
61.50	86.00	600.25	.0.00	.0.00
61.50	41.50	400.00	.0.00	.0.00
61.50	41.50	400.00	.0.00	.0.00
61.50	27.00	1190.25	.0.00	.0.00
61.50	54.00	56.25	.0.00	.0.00
56.50	54.00	6.25	.0.00	.0.00
56.50	38.00	342.25	.0.00	.0.00
56.50	47.00	90.25	.0.00	.0.00
54.00	87.50	1122.25	.0.00	.0.00
52.00	54.00	4.00	.0.00	.0.00
52.00	75.50	552.25	.0.00	.0.00
52.00	47.00	25.00	.0.00	.0.00
49.50	33.50	256.00	.0.00	.0.00
49.50	84.00	1190.25	.0.00	.0.00
43.50	59.00	240.25	.0.00	.0.00
43.50	71.50	784.00	.0.00	.0.00
46.50	38.00	72.25	.0.00	.0.00

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46.50      59.00     156.25      *0.00      *0.00
46.50      63.00     272.25      *0.00      *0.00
41.50      66.00     600.25      *0.00      *0.00
40.00      33.50      42.25      *0.00      *0.00
37.80      29.50      68.89      *0.00      *0.00
37.80      41.50      13.69      *0.00      *0.00
36.00      47.00     121.00      *0.00      *0.00
34.50      75.50    1681.00      *0.00      *0.00
21.00      59.00    1444.00      *0.00      *0.00
19.00      51.00    1024.00      *0.00      *0.00
18.00      33.50     240.25      *0.00      *0.00
13.00      59.00    2116.00      *0.00      *0.00
11.00      47.00    1296.00      *0.00      *0.00
 7.00      71.50    4160.25      *0.00      *0.00
 6.00      33.50     756.25      *0.00      *0.00
 4.50      33.50     841.00      *0.00      *0.00
 3.00      33.50     930.25      *0.00      *0.00
56.50       4.00    2756.25      *0.00      *0.00
 2.00      20.00     324.00      *0.00      *0.00
 1.00       7.00      36.00      *0.00      *0.00
 4.50      13.50      81.00      *0.00      *0.00
 8.00       0.50       0.25      *0.00      *0.00
 9.00      16.00      49.00      *0.00      *0.00
12.00       4.00      64.00      *0.00      *0.00
10.00       2.00      64.00      *0.00      *0.00
16.50      16.00       0.25      *0.00      *0.00
16.50       8.50      64.00      *0.00      *0.00
15.00       6.00      81.00      *0.00      *0.00
14.00      24.00     100.00      *0.00      *0.00
20.00      10.50      90.25      *0.00      *0.00
32.00      20.00     144.00      *0.00      *0.00
32.00      24.00      64.00      *0.00      *0.00
32.00      20.00     144.00      *0.00      *0.00


   EXECUTE :       0 HOURS    0 MINUTES    02.096 SECONDS
   SETUP   :       0 HOURS    0 MINUTES    03.625 SECONDS
   FTN     :       0 HOURS    0 MINUTES    06.213 SECONDS
   LOADER  :       0 HOURS    0 MINUTES    02.293 SECONDS
   *OTHER  :       0 HOURS    0 MINUTES    00.000 SECONDS

ELAPSED TIME:      0 HOURS    0 MINUTES    14.227 SECONDS
SEQUENCE NUMBER 0238201 0000 FINISHED AT 113750
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3831653	565	38	0132071	865	89	14	2
3931655	565	47	0232062	865	715	8	3
4031570	54	875	0332062	865	715	7	3
4131457	52	54	0432067	865	81	6	5
4231463	52	755	0532068	865	84	4	2
4331455	52	47	0632067	865	81	3	3
4431352	495	335	0732053	865	38	2	2
4531368	495	84	0932067	865	81	4	3
4631058	435	59	1032077	865	925	2	3
4731062	435	715	1132063	865	755	2	3
4831153	465	38	1232065	865	78	2	5
4931158	465	59	1332057	865	54	3	2
5031159	465	63	1432051	865	295	3	3
5230960	415	66	1531977	767	925	2	4
5430852	40	335	1631970	767	875	2	2
5630551	378	295	1731960	767	66	2	3
5730554	378	415	0832044	865	105	2	6
5830455	36	47	6429946	30	135		7
5930263	345	755	6829736	255	4		2
7328958	21	59	7029545	24	12		4
7528256	19	51	7129449	23	24		2
7628152	18	335	6030247	345	16		5
8126958	13	59	5530720	39	1		3
8326555	11	47	5330948	415	20		4
8724662	7	715	5131148	465	20		2
8822952	6	335	6929761	255	685		
9022452	45	335	7229050	22	27		
9120952	3	335	6529850	28	27		
3631636	565	4	6629859	28	63		
9220248	2	20	6729859	28	63		
9319042	1	7	1831958	767	59		
8922446	45	135	1931955	767	47		
8625943	8	85	2031972	767	905		
8526147	9	16	2131960	767	66		
8226836	12	4	2231955	767	47		
8426434	10	2	2331866	68	79		
7727847	165	16	2431872	68	905		
7827843	165	85	2531857	68	54		
7927341	15	6	2631855	68	47		
8027249	14	24	2731861	68	685		
7428444	20	105	2831868	68	84		
6130048	32	20	2931863	68	755		
6230049	32	24	3031754	615	415		
6330048	32	20	3131769	615	86		
			3231754	615	415		
			3331754	615	415		
			3431750	615	27		
			3531757	615	54		