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An Analysis of Selected Practices in Teaching First-Year Gregg Shorthand in United States High Schools

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AN ANALYSIS OF SELECTED PRACTICES IN TEACHING FIRST-YEAR GREGG SHORTHAND IN UNITED STATES HIGH SCHOOLS

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This Dissertation submitted by Richard L. Wedell in partial fulfillment of the requirements for the Degree of Doctor of Philosophy from the University of North Dakota is hereby approved by the Faculty Advisory Committee under whom the work has been done.

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ABSTRACT

Statement of the Problem

The problem of this study was to identify and analyze selected teaching practices used in teaching first-year Gregg Shorthand in United States high schools.

Procedures

Participants in this study were teachers of first-year Gregg Shorthand randomly selected from each of the 50 states. The population for this study consisted of schools systematically selected from Patterson's American Education resource book. A sample by state was obtained by selecting one school per page using a table of random numbers. A total of 511 questionnaires were mailed; 284 were returned.

Treatment of the Data

Teachers' responses were analyzed statistically using subprograms of Statistical Package for the Social Sciences (SPSS). ONEWAY, REGRESSION, PEARSON CORR, FREQUENCIES, and CONDESCRIPTIVE were utilized to treat the data.

Conclusions

Recognizing the limitations of this study, the researcher drew the following conclusions based on the findings obtained from this research study:

1. Total time available for classroom instruction in first-year shorthand did not substantially affect estimated new-matter dictation speed achievement.

2. Size of class had a substantial influence on estimated new-matter dictation speed achievement. The mean speed achievement of 76.38 words a minute for classes consisting of from one to 10 students was considerably higher than that for other classifications. A definite trend was indicated. As class size increased, mean speed achievement declined.

3. No substantial differences were determined in estimated new-matter dictation speed achievement for various practices used to assign homework in Book I or Book II of first-year shorthand.

4. No substantial differences were determined in estimated new-matter dictation speed achievement for various practices used to test reading progress in Book I or Book II of first-year shorthand.

5. No substantial differences were determined in estimated new-matter dictation speed achievement for various practices used to teach writing from dictation in Book I or Book II of first-year shorthand.

6. Substantial differences in estimated new-matter dictation speed achievement were determined for various practices used to teach brief forms in Book I of first-year shorthand. The mean speed achievements of 75.72 words a minute for teachers using duplicated tests and 72.21 words a minute for teachers using dictated tests were considerably higher than that for other classifications. A substantial difference was determined for various minimum end-of-year accuracy requirements for brief form performance in first-year shorthand. The mean speed achievement for groups requiring from 95 to 100

percent accuracy on brief form performance was considerably higher than that for other classifications. No substantial differences in estimated new-matter dictation speed achievement were determined for various practices used to teach brief forms in Book II or for various practices used to teach commonly used phrases in Book I or Book II of first-year shorthand.

7. Various practices used to encourage the writing of theoretically correct shorthand outlines in Book I and Book II of first-year shorthand did not substantially affect estimated new-matter dictation speed achievement.

8. Substantial differences in estimated new-matter dictation speed achievement were determined for number of tests for evaluating students' ability to write new-matter dictation in Book I and Book II of first-year shorthand. The mean speed achievement for teachers who gave new-matter dictation tests three times a week was considerably higher than that for other classifications. No substantial differences in estimated new-matter dictation speed achievement were determined for the day or lesson when new-matter dictation was introduced, length of new-matter dictation tests, or accuracy requirement on new-matter dictation tests in either Book I or Book II of first-year shorthand.

9. Substantial differences in estimated new-matter dictation speed achievement were determined for amount of time devoted to typewriter transcription in Book I and Book II of first-year shorthand. The mean speed achievement for teachers who devoted 61 minutes or more of class time per week to typewriter transcription was considerably higher than that for other classifications. Differences were greater in Book I than in Book II. No substantial difference in

estimated new-matter dictation speed achievement was determined for when typewriter transcription was introduced in either Book I or Book II of first-year shorthand.

10. No substantial differences were determined in estimated new-matter dictation speed achievement for various practices employed in using shorthand laboratories in Book I or Book II of first-year shorthand.

11. Time spent on various class activities in Book I and Book II of first-year shorthand did not substantially affect estimated new-matter dictation speed achievement.

CHAPTER I

INTRODUCTION

Shorthand has made a valuable contribution to business and individuals since John Robert Gregg brought his cursive shorthand system to America in 1893. According to the Bureau of Labor Statistics, the demand for secretaries possessing stenographic skills is good and is expected to increase rapidly through the mid-1980's as business expands and brings with it a growing volume of paperwork (Occupational Outlook Handbook, 1975, p. 86).

Since Gregg Shorthand was first offered as a course at the Salem Commercial School in 1893, teaching methodology has evolved through significant discoveries of research and, to a large degree, by trial and error. Recently there has been an increasing interest in shorthand methodology and systems. Ober (1976, p. 8) stated:

> The increasing interest in shorthand makes for exciting times--new shorthand systems, new methods of teaching, new hardware and other nonbook media, and even new developments in office duties and practices all combine to make shorthand the most talked-about subject in the business curriculum today.

High school shorthand teachers should be aware of research, new developments, and ideas pertaining to shorthand methodology. Shorthand teachers face the same skill-building problems today that were faced years ago; however, they are now challenged to teach more in a shorter period of time. Consequently, they must continually examine and update their methods, textbooks, dictation materials, and other teaching aids

if they are to succeed at preparing students to meet the needs of today's modern office.

Teachers of first-year shorthand face a threefold responsibility. They must present the theory principles, build speed, and meet the end goal of a beginning shorthand course--producing mailable transcripts from dictation given between 80 and 100 words per minute. High school teachers of Gregg Shorthand should use the most effective methods available to reach the goal of equipping their shorthand students with a marketable shorthand skill.

Statement of the Problem

The problem of this study was to identify and analyze selected teaching practices used in first-year Gregg Shorthand in United States high schools.

Null Hypotheses

The following hypotheses were tested:

1. There is no significant relationship between amount of time available for classroom instruction in first-year Gregg Shorthand and estimated new-matter dictation speed achievement.

2. There is no significant relationship between size of shorthand classes in first-year Gregg Shorthand and estimated new-matter dictation speed achievement.

3. There is no significant difference between practices employed in assigning homework in Book I or Book II of first-year Gregg Shorthand and estimated new-matter dictation speed achievement.

4. There is no significant difference between practices employed to test reading progress in Book I or Book II of first-year Gregg Shorthand and estimated new-matter dictation speed achievement.

5. There is no significant difference between practices employed to teach writing from dictation in Book I or Book II of first-year Gregg Shorthand and estimated new-matter dictation speed achievement.

6. There is no significant difference between practices employed to teach brief forms and phrases in Book I or Book II of first-year Gregg Shorthand and estimated new-matter dictation speed achievement.

7. There is no significant relationship between practices employed to encourage the writing of theoretically correct shorthand outlines in Book I or Book II of first-year Gregg Shorthand and estimated new-matter dictation speed achievement.

8. There is no significant difference between practices employed to test new-matter dictation speed achievement in Book I or Book II of first-year Gregg Shorthand and estimated new-matter dictation speed achievement.

9. There is no significant difference between practices employed to teach typewriter transcription in Book I or Book II of first-year Gregg Shorthand and estimated new-matter dictation speed achievement.

10. There is no significant difference between practices employed in using shorthand laboratories in Book I or Book II of first-year Gregg Shorthand and estimated new-matter dictation speed achievement.

11. There is no significant relationship between time spent on various class activities in Book I or Book II of first-year Gregg Shorthand and estimated new-matter dictation speed achievement.

Purpose of the Study

The purpose of this study was:

1. to determine the teaching practices used in teaching first-year Gregg Shorthand.

2. to determine the relationship between amount of time available for instruction and estimated new-matter dictation speed achievement.

3. to determine the relationship between size of shorthand classes and estimated new-matter dictation speed achievement.

4. to determine differences between teaching practices used and estimated new-matter dictation speed achievement.

5. to determine the relationship between time spent on various class activities and estimated new-matter dictation speed achivement.

Need for the Study

First-year shorthand is a subject that is available to students in most public and private secondary schools within the United States. Shorthand serves a wide variety of students--the vocationally oriented, the college bound, and those taking the course for personal-use purposes. Wagoner (1976, p. 31) stated:

> The history of shorthand is replete with stories of authors, business executives, playwrights, and government officials who attribute much of their success to their "personal use" of shorthand or to their early opportunity to earn a living using shorthand skills.

Many students who complete first-year shorthand may not enroll in second-year shorthand to pursue additional instruction. There are several reasons for this, including:

1. Second-year shorthand may not be offered in some high schools.

2. Some students may have achieved the level of skill believed adequate for future endeavors.

3. Some students may change career plans and goals.

4. Some students may not be able to fit the course into class schedules.

5. Some students may take first-year shorthand in their senior year.

6. Some students who do not experience success in first-year shorthand may anticipate not meeting the goals and standards of second-year shorthand.

Condon (1976, p. 8) stated:

> Many private business firms require that applicants for stenographic positions be able to take dictation at 100 words a minute and type 50 words per minute. While some businesses will settle for a dictation rate of 80 words a minute and a typing speed of 40 words a minute as the bare minimum for employment, it is obvious that higher rates are more desirable.

It would follow then that today's shorthand teachers must build higher levels of skill; and, they must do it in a shorter period of time. Wagoner (1976, p. 31) stated:

> Shorthand skill is highly desirable for initial employment, and it provides workers with good promotional potential. Based on the surveys that have been conducted, both conditions will continue to prevail in the future.

For these reasons and others, high school shorthand teachers are faced with the challenge of developing vocational skills within the first-year course. There is a need to survey the secondary school shorthand teachers in the United States to identify and analyze the various teaching practices being used. An analysis of those teaching practices common to first-year shorthand courses may contribute

answers to those basic teaching problems and provide a basis for course development and enrichment.

Delimitations of the Study

This study was delimited to:

1. Gregg Shorthand instruction in selected United States high schools during the 1976-1977 school year.

2. Data requested from 511 United States high schools randomly selected from Patterson's American Education resource book (Patterson, 1977).

3. Schools that offered first-year Gregg Shorthand on a traditional basis.

4. Teachers who taught first-year Gregg Shorthand at their present school during the 1976-1977 school year.

5. Selected practices of teaching first-year Gregg Shorthand.

Limitations of the Study

This study was limited by the inability of the researcher to control:

1. The representativeness of returned questionnaires as to school location, type, and size.

2. The selection of the shorthand teacher by the Department Chairperson to complete the questionnaire.

3. The qualifications, education, and background of the teachers answering the questionnaire.

4. The interpretation of items on the questionnaire by individual respondents.

5. The ability of shorthand teachers to accurately recall and express terminal dictation speed achievement of classes during the 1976-1977 school year.

6. The possible bias of individual respondents.

Definition of Terms

The following terms are defined as they pertain to this study:

Book I. Instructional materials designed for presenting theory and used for approximately the first one-half year of instruction.

Book II. Instructional materials used for approximately the second one-half year of instruction.

Brief Forms. Shorthand abbreviations for commonly used words.

Chapter Theory Tests. Relatively short theory tests given at the end of each chapter.

Complete Theory Tests. A comprehensive theory test usually 100 words in length which is given at the end of a marking period.

Estimated New-Matter Dictation Achievement. Teachers' estimate of the single, highest dictation achievement of 1976-1977 students on unpreviewed new-matter dictation for a dictation take of three minutes in length and with a 95 percent accuracy standard.

First-Year Shorthand. The beginning course in a secondary business education curriculum which is one academic year in length and stresses vocational objectives.

Gregg Shorthand. A symbol shorthand system that was developed by John Robert Gregg. It predominately is a curve-motion shorthand with circles, hooks, and loops.

New-matter Dictation. Dictation materials students had not heard, read, previewed, or written.

Phrases. The joining of two or more words into a single shorthand outline.

Practice-matter Dictation. Dictation material students had either heard, read, previewed, or written.

Previewing. An activity given prior to dictation which makes the dictation easier. This may include reading, dictation, tracing, sky writing, etc.

Short Theory Quizzes. Short tests given on a daily basis covering theory that is presented in one lesson.

Speed Achievement. The actual-word-a-minute score of a shorthand writer who writes from dictation at a set rate, such as 60 words a minute for two minutes with 95 percent accuracy.

Traditional Shorthand Instruction. The traditional methods of teaching shorthand (methods other than individualized instruction).

Organization of Chapters

Formal presentation of this study is organized in the following manner:

Chapter I includes the following areas: (1) introduction, (2) statement of the problem, (3) hypotheses, (4) purpose of the study, (5) need for the study, (6) delimitations of the study, (7) limitations of the study, (8) definition of terms, and (9) organization of chapters.

Chapter II is a review of related literature and is divided into nine parts: (1) practices employed in assigning homework, (2) practices employed in testing reading progress, (3) practices employed

to teach writing from dictation, (4) practices employed to teach brief forms and phrases, (5) practices employed to encourage the writing of theoretically correct shorthand outlines, (6) practices employed in testing new-matter dictation speed achievement, (7) practices employed to teach typewriter transcription, (8) practices employed in using shorthand laboratories, and (9) time spent on various class activities.

Chapter III describes the procedures used in collecting and analyzing data for this study.

Chapter IV is a report of the statistical treatment of the data and a report of the findings.

Chapter V contains the summary, recommendations, and conclusions based upon the findings in chapter IV.

CHAPTER II

REVIEW OF RELATED LITERATURE

The review of related literature chapter is divided into nine parts: (1) practices employed in assigning homework, (2) practices employed in testing reading progress, (3) practices employed to teach writing from dictation, (4) practices employed to teach brief forms and phrases, (5) practices employed to encourage the writing of theoretically correct shorthand outlines, (6) practices employed in testing new-matter dictation speed achievement, (7) practices employed to teach typewriter transcription, (8) practices employed in using shorthand laboratories, and (9) time spent on various class activities.

Practices Employed in Assigning Homework

How to utilize time devoted to shorthand homework to students' best advantage is a problem that faces teachers of first-year Gregg Shorthand. Time allotted to shorthand homework very often equals or surpasses the amount of class time devoted to learning shorthand.

In a publication by the California State Department of Education (1955, p. 40), the following observation was made about shorthand homework:

> It has been said by many shorthand authorities that the self-practice or homework plans used by most teachers are the weakest element in the whole teaching process. Too often a good classroom method of teaching fails because the students are not given a clear-cut plan of self-practice that will bring successful achievement in a relatively short time.

Whalen (1961, p. 121) stated:

> A constructive homework program necessitates thoughtful teacher planning, preparation, organization, and execution. Assignments should be commensurate with the varying ability levels of the students. Learning theories tend to support the premise that students of lesser academic abilities profit from repetition work and talented students should be given more challenging assignments. An important outgrowth of lesson planning should be the development of motivational factors to encourage student interest in homework. This requires thought and consideration relative to the manner in which the assignments are made and how it is to be prepared at home. In the final analysis, it is the qualitative rather than the quantitative phases of homework that contribute to an effective learning program.

Although research did not indicate whether homework either helped or retarded student learning in first-year Gregg Shorthand, most teachers agree that student progress would descend to a snail's pace if no homework were required. It is imperative that students realize that homework is essential to the learning of shorthand. "When taught the value of homework under the guidance of an enthusiastic teacher, students will reach higher goals than otherwise would have been attained" (Hart, 1958, p. 18).

Gregg (1960, pp. 34-5) listed these specific purposes for the shorthand homework assignment:

"1. to improve reading proficiency.
"2. to develop fluency and speed in writing.
"3. to learn frequently used words.
"4. to improve shorthand penmanship.
"5. to improve transcription skills, which includes ability to apply rules of spelling and punctuation."

Madsen (1961, pp. 392-3) proposed the following as characteristics of an effective homework program:

"1. that it builds upon one's knowledge of shorthand.
"2. that it makes an allowance for individual differences.
"3. that it provides an opportunity for thought and problem solving.

"4. that it directly develops the ability to construct new words and phrases.
"5. that it should assist in the development of skills applicable to vocational employment.
"6. that it furnishes knowledge of results--the student should discover and correct his own errors.
"7. that it provides a basis for additional skill development in the classroom.
"8. that it provides a check against forgetting, through constant review of all previous learning.
"9. that it provides a means of self-motivation. The student is able to feel that he is working for his self-satisfaction, not for the teacher's satisfaction.
"10. The time necessary for completion of the assignment is within reason--its completion is felt as desirable by the student, not as a daily burden."

Very little related literature could be found for various practices employed to assign homework. According to Waters (1963, p. 1), "Instructional methods relating to effective homework in shorthand are varied. Apparently there are about as many different homework procedures in use as there are shorthand teachers." After investigating shorthand methodology textbooks and manuals for shorthand teachers, Calland (1964, p. 146) reported that no research could be found on the importance of homework or the value of specific homework practices.

As to specific practices, Delancey (1951, pp. 232-3) felt that the teacher would save time and speed up learning by using an entire class period early in the year to explain the purpose of homework and to demonstrate to students exactly how to do each homework assignment.

Duchan (1952, p. 72) concurred:

> Unless the student knows <u>what</u> he is doing and <u>why</u> he is doing his shorthand homework, the only outcome of painstaking repetitions is a well-filled sheet of carefully written notes that, unfortunately, does not add to the development of skill in shorthand.

Condon (1962, p. 148) favored teaching students a self-dictation technique for making their practice work effective. He said that it is

not necessary that students know how rapidly they are talking. The goal is for students to do repetitive practice of a phrase, clause, or whole sentence until they can keep up with their normal speaking voices.

Condon (1962, pp. 139-40) offered many suggestions for approaches to homework writing practice. He felt that it is very important for students to automatize shorthand characters as quickly as possible. They should be written by students as part of their homework practice in addition to being used as a class drill.

In addition to having students read entire lessons as a part of homework practice, Condon (1962, p. 149) said that it is especially important that they be required to write selected portions more than once. He wrote that "evidence suggests that there is a direct relationship between achievement and the amount of homework writing practice done." Leslie and Zoubek (1963, pp. 23 and 62) favored having students make one complete copy of all the connected matter in each assignment after having read the assignment aloud. They did not urge copying from word lists and believed that effective practice matter consisted of copying large amounts of connected material once. If large amounts of material were not available, smaller amounts copied repetitively was suggested as a second choice.

Condon (1962, pp. 140-1) believed that students should practice writing the theory word lists. He said that "the technique of writing several repetitions of two or three words successively is probably preferable to the practice of just repeating each word several times individually." Students should write three to five repetitions of a two- or three-word sequence. After such practice, students should

give themselves a self-test by writing the entire list once, using the key as a stimulus, and then checking their outlines with the plate and doing any necessary remedial practice.

Leslie (1953, p. 77) "strongly urges the teacher to have the learner copy only once the graded connected material for each lesson." Complete lessons may be assigned after the first two weeks. This homework should be checked early in the course by simply calling on students, at random, to read a sentence or a brief paragraph (Stahl, 1958, p. 35).

Lamb (1961, p. 57) suggested: "At least an hour should be spent each evening on homework. When students are absent, they should 'make up' their homework over a period of time that allows for distributed practice."

Russon (1968, p. 21) stated:

> Shorthand is a perceptual-motor skill. This means that practice is necessary if a student is to progress in building skill. The best way to make sure the student practices his lesson every day is to check the homework assignments each day. Under no circumstances should the homework be evaluated or graded. The teacher merely glances at each student's homework to see that it has been done correctly; places a small check mark in the homework section of the roll book for that day; and files the homework in the wastebasket. This procedure takes about five minutes for each class.

Russon (1968, pp. 22-3) reported that if the early-new-matter approach is followed, homework assignments in first-semester shorthand generally follow this pattern:

"1. No homework is assigned the first day. Whatever is presented on the first day is repeated the second day, and homework assignments begin on the second day.
"2. The first two assignments are spelled and read twice.
"3. The assignments from Lesson 3 through Lesson 20 are read twice and traced once.
"4. Every two lessons of brief forms are automatized with the folded paper technique.

"5. Beginning with Lesson 21, each new lesson is read once and either written or traced once. With this new lesson, a beginning lesson is reviewed.
"6. The review assignment proceeds as follows: With Lesson 21 the class reviews Lesson 1; with Lesson 22 the class reviews Lesson 2, and so on. Each review lesson consists of writing the words at the beginning of each lesson several times to develop fluency and to write the last full page of the lesson three times skipping the lines."

In second semester shorthand, the homework assignment is similar to the review assignment in the first semester except that a complete lesson is practiced. Russon reported that the class practices one lesson each day as follows:

"1. Theory words at the beginning of each lesson are automatized by writing from the key and checking with the shorthand plate. Words written incorrectly are practiced several times.
"2. Continued matter in the lesson is written three times skipping the lines.
"3. The fifth lesson in each group of five lessons may be read for speed and not written. Reading for speed is practiced by repeated readings against time.
"4. Students who take dictation rapidly but have difficulty with transcription may be given an alternate homework assignment. Instead of writing the continued matter three times, they might write the letters once in shorthand and then transcribe the homework lesson. Students electing the transcription homework assignment are asked to divide the time taken in transcribing into the total words transcribed and to attempt to improve their transcription rate each week."

In a study of the relevance of shorthand teaching practices to the development of shorthand-recording skill Busch (1974, p. 252) concluded:

"1. The development of fluent reading contributes significantly both to dictation-recording achievement and vocabulary achievement; the objective of developing reading fluency should be a primary homework goal during the second semester of shorthand instruction.
"2. Recorded dictation-recording practice material used for homework practice promotes dictation-recording speed and shorthand vocabulary development."

Busch (1974, p. 253) recommended that:

> Teachers should make every effort to provide students with some type of homework practice that involves writing from dictation. Ideally, dictation-recording practice material should be dictated according to a recognized speed-building plan; and students should be provided with a prepared preview to be used for reference to difficult outlines when writing the dictated practice material.

In his study of selected homework procedures on achievement in second-semester shorthand, Perry (1974) concluded:

> "1. The use of reading goals to encourage accurate, high-speed reading during the second semester of high school shorthand can serve as a legitimate substitute for the traditional homework assignment of reading and writing each lesson at least once.
> "2. Second-semester shorthand students who are expected to meet specific reading goals and who practice unfamiliar or difficult shorthand outlines attain significantly higher dictation speeds than students who meet reading goals only or students who follow the conventional practice of reading and writing the entire homework assignment at least once.
> "3. Second-semester students who are classified in the upper two-thirds of dictation ability at the beginning of the semester will make the most improvement in dictation if they are expected to meet reading goals as well as practice writing difficult outlines in each homework lesson. The type of homework assignment (reading goals only, reading goals as well as writing isolated outlines, or reading and writing the entire lesson at least once) will probably have little effect on the dictation improvement of students classified in the lower levels of dictation ability at the beginning of the second semester.
> "4. The ability of second-semester students to write theoretically correct outlines is not significantly affected by homework assignments which include reading goals only, assignments which include reading goals as well as writing difficult outlines, or assignments which include reading and writing the entire assignment at least once. However, students classified in the upper-third of the class according to level of theory mastery will make the most improvement if homework assignments include meeting reading goals only. The type of homework assignment given will probably have little influence on the theory mastery of other students enrolled in the class" (pp. 61-62).

Practices Employed in Testing Reading Progress

According to Angus (1961, p. 18), reading plays an important part in the acquisition of shorthand skill; therefore, students should be encouraged to read as much plate shorthand as possible. Through the reading of plate shorthand, students gain a wider knowledge of correct shorthand outlines. The more reading that is done, the less hesitation students will experience in applying rules. Students will gain a clear mental picture of shorthand forms for the words they hear, and they will develop automatism in writing. The development of this ability is an essential factor in the acquisition of legible shorthand which has a great bearing upon accuracy of transcription.

As to effective reading techniques, Lamb (1961, p. 133) had this to say:

> Because the ability to read in thought units is one of the techniques required for efficient transcription, students should be trained to read in thought units from the beginning of their training. If they acquire the habit of reading word by word without reference to the thought of the sentence, they will have to break their word-reading habits when they start their transcription training. They should read as rapidly as possible so that they keep the thought of what they are reading in mind and so that they do not get into the bad habit of dawdling over the reading of notes.

Danneman (1960, p. 26) stated: "Reading shorthand is the foundation for future ability in transcription. It should be taught and practiced from the beginning of the first semester of shorthand." Hayes (1958, p. 25) stated that "the process of learning shorthand necessitates learning to read it. This skill cannot be tested adequately unless reading is done orally." Leffingwell and Morrison (1956, p. 154) believed that students will only read their shorthand as fast as teachers demand

and no faster. They suggested setting goals of 125 words per minute for first semester and 150 words per minute for the second semester.

Pullis (1973, p. 49) stated that research showed that ability to write shorthand is fostered by fluency in reading shorthand, and that timing of reading rates encourages the study of shorthand. He believed that during the fourth week of instruction students should be able to read at a minimum of 40 words per minute, with an increase of 20 words for each grade level, when randomly called upon to read. He suggested that the minimum rate might be increased by 10 words every two weeks until a minimum of 160 words per minute is reached sometime during the second semester.

Crank (1962, p. 166) felt that "in learning shorthand, facility in reading outlines is an important consideration. Standards for note reading must be reasonable, realistic, and easily administered." She felt that one way to evaluate reading skill was to establish required reading rates. Students would be timed as they read in class. She said that top students could be expected to read at the rate of 120 words a minute by the end of the first semester.

In his study on teaching practices in second-semester shorthand, Busch (1974, p. 252) concluded:

> "1. Requiring students to demonstrate in class an unhalting, fluent reading ability contributes to both dictation-recording achievement and vocabulary achievement.
> "2. Spelling outlines is an effective second-semester shorthand technique for students having difficulty in reading, and the regular use of this practice does contribute to vocabulary development."

Busch (1974, p. 252) recommended that: "Shorthand teachers should establish reading goals for second-semester shorthand based on fluencey or

specific reading rates and that teachers require students to demonstrate in class that these goals have been achieved."

In his study of the relationship between reading ability and the ability to take dictation in second-semester shorthand, Beringson (1971) concluded:

"1. There is a significant relationship between the ability to read shorthand and to take shorthand dictation. The mean reading rate for the total population was 103.35 words per minute. The mean writing rate was 60.42 words per minute. The correlation tests revealed an r of .60.
"2. In analyzing the schools independently, it was apparent that there was a considerable difference between the approaches to teaching shorthand. The regression lines for each school were plotted and analyzed together. One school had an r of .90, revealing a high relationship between reading and writing rate. The smallest r was .38.
"3. Each reading plate was analyzed independently with the average writing rate. The correlation coefficients for Plates 1 to 4 did not vary significantly. It was concluded that a reading plate of a particular difficulty level is not any more closely associated to writing rate than a plate of another level of difficulty.
"4. To test the difference between oral shorthand reading rates and selected levels of difficulty, the analysis of variance test was utilized. The value of F was 33.03, indicating that there is a significant difference or variance between the plates. In comparing the mean reading rates, however, it was found that the plates did not progressively become more difficult.
"5. Prompting errors accounted for 66.8 per cent of the total errors. Substitution errors accounted for 28.4 per cent of the total errors. On the basis of reading error analysis, it was concluded that these are the two most frequently occurring errors" (pp. 79-80).

Practices Employed to Teach Writing from Dictation

The point at which practice-matter dictation is introduced depends primarily on whether teachers adopt the reading or writing approach to teaching first-year shorthand.

Leslie and Zoubek (1950, p. 22) recommended waiting until the completion of Lesson 19 if the reading approach is used. If the

writing approach is used, the point at which writing begins varies from day one to day six. Gregg, Leslie, and Zoubek (1963, p. 21) recommended that teachers wait until Lesson 6. Leslie and Zoubek believed that no more than ten minutes should be spent on writing when it is first introduced.

As to the point at which practice-matter dictation should be begun if teachers use the reading approach, Russon (1968, p. 13) stated: "Beginning with the fifth week the class is introduced to writing by asking the class to turn to an early lesson in the text (such as Lesson 4) and to copy from the shorthand plate as the teacher dictates."

Lamb (1961, p. 56) said that "regardless of method used, the shorthand period should be spent in reading and writing shorthand."

Leslie (1953, p. 68) said that "dictation should begin as soon as writing begins." Leslie (1953, p. 168) further discussed the introduction of practice-matter dictation when he stated:

> The first shorthand writing, and all shorthand writing done in the shorthand classroom, should be from dictation. The author's experience has made him a strong advocate of a reading approach of approximately twenty periods. At the end of that time writing is introduced, the writing being from the repetitive dictation graded, connected, practiced matter.

As to length of dictation, Leslie (1953, p. 169) stated:

> For the first few days the dictation may profitably be limited to 30-second reading. After a few days two 30-second readings may be combined into a 60-second reading. From that time on, in general, 60-second readings seem the optimum length, with an occasional 30-second reading to enable the learner to write at a higher rate than he can get on the 60-second readings and with an occasional reading of 2, 3, 4, or 5 minutes.

Leslie (1953, pp. 332-3) had this to say about the type of material to be used:

> The persistence of the use of the list of isolated words for teaching shorthand is a relic of former times, when the list of isolated words was the only means available to the teacher for giving the learner practice on the new principles as they were presented. The simplicity of Gregg Shorthand and the excellence of the textbooks in which the system was presented has made the undue use of the list of isolated words as unnecessary as it is undesirable.

In a study by Loughery (1960, p. 24) of current grading practices in first-year shorthand, she discussed dictation rates:

> The dictation speeds recorded on the questionnaire by teachers cover such a wide range and were so varied that it was impossible to reach a conclusion as to average speed or speeds used. The lowest dictation rate was 20 words a minute and the highest was 100 words a minute for the first semester. For the second semester the range was from 40 to 150 words a minute.

In a study by Busch (1974, p. 250), he made this recommendation:

> Teachers are strongly urged to determine the amount of class time devoted to dictation-recording practice and to attempt to devote regularly at least one half of the period to meaningful and speed-forcing dictation-recording practice.

Practices Employed to Teach Brief Forms and Phrases

Many teachers believe that mastery of brief forms is necessary for efficient dictation recording skill. Many, therefore, require a passing mark of 100 percent on brief form tests. Condon (1962, p. 134) stated:

> Brief forms are great time savers, but only if they are instantly recognized as brief forms. The correct outline response must be automatic. Therefore, sufficient drill must be given on the brief form lists to insure instant recognition and automatic response.

Leslie (1953, p. 12) stated that "if the learner writes correctly 70 percent to 90 percent of the brief form occurrences in connected matter from dictation, that should be a satisfactory record." Condon (1953, p. 362) further stated:

> Clearly, it now becomes obvious that it was never necessary to memorize and automatize all those 400 and more brief forms that have now been eliminated. It is now possible to take a more reasonable attitude toward the 184 brief forms left in the system. If the learners use most of them correctly and rapidly, there is no reason to press for final, 100 per cent automatization of the entire number.

Pullis (1973, pp. 50-1) had a different belief:

> The recommendation that a shorthand student need possess no more than a 70 per cent mastery of the brief forms is not consistent with the fact that a higher percentage of brief forms are inaccurately transcribed when not correctly written than are any other words. No doubt this is largely due to the fact that brief forms do not contain the component characters of the words they represent and are thereby more difficult to transcribe when not correctly written.
>
> Brief form and vocabulary tests may profitably be administered by the second month of shorthand instruction. . . . While the minimum acceptable standard on the vocabulary test might require the writing of 70 per cent of the outlines correctly, a minimum of 90 per cent of the brief forms should be correctly written.

In his study on the relevance of teaching practices in second-semester shorthand to the development of shorthand-recording skill, Busch (1974, p. 251) concluded:

> Continued efforts to have students automatize brief forms and brief-form derivatives during the second semester promotes higher speed levels of dictation-recording achievement and improved vocabulary achievement.
>
> Brief-form tests of isolated words contribute to dictation-recording achievement . . .

Sharpe (1956, p. 17) indicated that:

> The use of connected matter for testing of brief forms is good. The test should be mimeographed material loaded with brief forms, which are underscored so that the students will write the shorthand over them, and double or triple spaced to allow the student space in which to write the shorthand.

As to a philosophy of phrasing, Zoubek (1964, p. 6) had this to say:

> If the writer has automatized a phrase to the point that it comes trippingly off his pen when he hears it during

> dictation, that phrase has value. If, on the other hand, he must hesitate, even for the tiniest fraction of a second, in recalling the outline for that phrase, it becomes an anchor around his shorthand neck; and he would be much better off writing the parts of the phrase separately. It took the shorthand profession almost half a century to wake up to this fact.

Liles (1963, p. 54) wrote about hesitation caused by phrasing:

> It is true that if the student has to hesitate very much to recall a phrase he could write the words separately with equal speed or faster. But this is not the real argument against the importance of phrasing. It is merely a condemnation of half-baked knowledge of shorthand. Phrases can be learned by the student; and when they are automatized, they increase speed by reducing the number of times the pen is lifted from the paper. Phrases that are taught should be taught in a positive, systematic manner.

Perry (1975, p. 41) believed that:

> All phrases should be cycled on a planned basis throughout the lessons. We cannot expect a student to be introduced to a phrase, see it once in context, and have it automatized. In order to be learned, phrases must be purposely introduced and used over and over according to a planned cycle. While we don't know how many times a student must be exposed to a certain outline to really learn that outline, we do know that he must be exposed to and use the outline numerous times before it is automatized.

Stoddard (1971, p. 336) concluded: "A list of frequent phrases should be identified; these phrases should be approached in the same manner that brief forms are taught."

Practices Employed to Encourage the Writing of Theoretically Correct Shorthand Outlines

Two schools of thought exist in the teaching of shorthand penmanship. Most modern teachers are more concerned about the students' ability to transcribe what has been written than about perfectly written outlines. Leslie and Zoubek (1963, p. 55) suggested that with the functional approach, "at no time, in any way, for any reason, should

the learner be given any reason to suppose that shorthand rules exist." Others believed that teachers must emphasize penmanship. Carmichael (1959, p. 27) stated: "Skill in reading and transcribing shorthand can be developed much more rapidly if students can write shorthand notes that have the qualities of exactness, preciseness, and skill."

Ober (1973, p. 14) concluded that "extensive research has shown that theoretically correct shorthand outlines are transcribed many times more accurately than incorrectly written outlines."

Condon (1962, p. 134) took a slightly different view:

> Although memorization of rules is not suggested, there is evidence to suggest that the study of the principles of shorthand theory should receive greater emphasis. However, minor theory deviations, such as whether to write or omit the vowel sound, need not be emphasized. It has been found that students will do a better job of taking dictation, improvising shorthand outlines for unfamiliar words, and turning out acceptable transcripts when they have a thorough understanding of the basic principles of the system.

According to Leslie and Zoubek (1950, p. 241), it is only natural for a student to make errors when learning to write shorthand, for it is impossible for the learner to write theoretically perfect shorthand and also gain speed and fluency. Gregg pointed out that "an outline that can be correctly transcribed is a correct outline" and told his own students "when in doubt, write it out." Love (1955, p. 18) concurred when he said that "the shorthand characters in the text are not so sacred that students must duplicate them precisely."

As to ways of encouraging the writing of theoretically correct shorthand outlines, Leslie (1953, p. 194) suggested using a general blackboard drill to strengthen the students' grasp of particular points of shorthand theory. Guthrie (1958, p. 399) agreed when he said that

"students learn how to write correctly by watching the teacher write on the chalkboard." Lamb (1961, p. 56) concurred when she stated that the teacher should teach "chalk in hand."

Fothergill (1975, p. 107) suggested that another way to stress knowledge of theoretically correct shorthand is to introduce daily word tests in the beginning shorthand course.

In his study of second-semester shorthand, Busch (1974, pp. 251-2) concluded:

> Theory and vocabulary instruction significantly affects both dictation-recording achievement and vocabulary achievement and should receive greater emphasis in classroom activities than has been recommended by some authorities in the past.
>
> The use of drills requiring students to read, write, and spell words in the theory portion of each day's lesson promotes vocabulary achievement and recording achievement. During writing drills, the teacher should observe the writing habits of students and make suggestions for improved shorthand writing.
>
> During the second semester of shorthand instruction, a review of selected theory principles involving the writing of words illustrating particular theory principles contributes to vocabulary achievement.
>
> Vocabulary tests make the greatest contribution to dictation-recording achievement and vocabulary achievement when dictation is timed at a pace of at least one word every five or six seconds, when no word is repeated after the succeeding word has been dictated, when students are required to transcribe at the rate of one word each seven or eight seconds, and when the total testing time is limited to no more than five or six minutes.

Pullis (1973, p. 51) concluded:

> It is when shorthand students have a mastery of the shorthand vocabulary--and certainly this does not imply rote memorization or verbalization of rules--that high levels of achievement in dictation-transcription ability are attained.

Practices Employed in Testing New-Matter Dictation Speed Achievement

Leslie and Zoubek (1963, p. 29) believed that "no new-matter dictation should be attempted until the completion of the manual, which would mean the completion of the first semester of high school shorthand." No harm can possibly come from delaying the introduction of new-matter dictation, but great harm can come from introducing new-matter dictation too soon.

Lamb (1961, p. 172) concurred: "From the introduction of writing until the completion of the manual, the learner should not be allowed or compelled to write new-matter dictation at any time."

Condon (1962, p. 151) believed that if no graded new-matter dictation is given up to the time the theory is completed, the student is sure to experience difficulty when he first attempts to take new ungraded dictation. This difficulty may be minimized by introducing graded new-matter dictation relatively early in the course.

Pullis (1973, p. 52) stated that "new-matter dictation tests are usually administered beginning with the second semester of instruction." According to Leslie and Zoubek (1963, p. 67), the only proper test is the dictation of new matter for three to five minutes.

Pullis (1976, p. 156) stated:

> Although three-minute dictation tests are apparently the most popular, some teachers do prefer administering five-minute takes. And while this writer feels that three-minute takes are of reasonable duration to be a reliable indicator for this type of measurement, he hopes that consideration will be given to allowing at least five per cent shorthand transcription error on such tests.

Campbell (1975, p. 21) concurred when she stated that both three and five minute speed tests with an accuracy requirement of 95 percent

are most frequently reported. According to Pullis (1971, pp. 109-10), "shorthand error allowance has, surprisingly, been the subject of little research or study." He stated:

> Research in learning theory would indicate that the student who has experienced higher speeds of writing with an error allowance can more easily transcribe slower rates at a high degree of accuracy than can a student who has never experienced high speeds of writing increase his rates even if allowed more errors.

Leslie and Zoubek (1955, pp. 65-6) believed that:

> 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.

Regardless of the rate used, Rowe (1959, p. 15) suggested that:

> It is good practice to inform students of the dictation rate. Knowledge of objectives can be a powerful motivating factor in the acquisition of a skill. Students like to know what they are working for, and the successful shorthand teacher usually announces the dictation rate and the length of dictation in minutes immediately before dictating.

Practices Employed to Teach Typewriter Transcription

Leslie, Zoubek, and Strony (1963, p. 24) advocated introduction of written transcription in the first semester. They recommended that longhand transcripts be used as an indication of how rapidly students can read the shorthand plates and copy them.

Lamb (1964, p. 15) concurred:

> Since transcription is a complex skill made up of several basic skills in themselves complex, it is profitable in time and effort to have each of the component skills developed independently. If transcription is attempted when these individual skills are not yet developed--typewriting, shorthand recording and handwritten transcription, and skill in applying

> the rules of English composition--transcription practice is slowed down to a discouraging pace and correct techniques in the various skills are likely to be sacrificed in the attempt to get acceptable results.

Concerning introduction to typewritten transcription, most of the authors felt that it was best not to start it before the third semester of a four-semester course.

Russon (1968, p. 36) disagreed. She stated that: "Transcription skill does not grow by itself but must be taught. My philosophy is that this important skill is started in the first semester and developed consistently through the entire shorthand course."

Forkner (1964, p. 14) believed that in the process of transcribing well-written shorthand plates at a typewriter, the student discovers the principles used in writing the shorthand.

Holst (1958, p. 21) reported that:

> We found that teaching transcription in the shorthand class, beginning the first week, could have several advantages. Obvious ones were that (a) students would be more valuable on their jobs, (b) students could see an immediate application of their shorthand learning, and (c) problems arising in connection with the job dictation could be solved in class.

Reed (1962, pp. 156 and 163) stated that:

> To coordinate these components into a smooth, simultaneous activity, transcription skill must be developed, and it is best developed from the beginning of the shorthand learning activity in a way that combines initially those skills and knowledges inherent in the finished product. Thus, whenever possible, it is highly desirable that transcription be done on the typewriter.

Reed (1962, p. 163) suggested five minutes of machine transcription practice at the beginning of each class period.

Most authors who recommended delaying typewriter transcription until the third semester of a four-semester term advocated the use of

a double class period with the second class period devoted entirely to typewriter transcription.

Practices Employed in Using Shorthand Laboratories

Numerous research studies pertaining to the utilization of shorthand laboratories have indicated that where dictation laboratories are used, no major differences occur between achievement levels of groups taught by taped dictation and groups taught by teacher dictation (Pullis, 1973, p. 60).

Condon et al. (1969, p. 1) stated that:

> Good teaching was achieved by many teachers long before electronic equipment was available for shorthand instruction. Enthusiastic teachers motivated their students to achieve outstanding performance without such electro-mechanical aids. Today, however, the equipment is available which can aid the teacher in achieving the goals and objectives he has set for his students. Without a doubt, the use of the equipment can generate greater enthusiasm and motivation; and it can make learning more effective. The key factor, however, in the teaching-learning process is still the teacher, not the equipment. It is the teacher who utilizes the equipment properly and who uses it to the best advantage in order to achieve maximum learning.

As to a specific plan, they (p. 16) believed that:

> The use of tapes may begin as soon as writing begins. However, usually it would not be necessary to have taped materials available until you see evidence of individual abilities separating your class into various dictation levels.
>
> While dictation laboratories may be most often used for dictation speed development, the dictation lab is probably most effective when it is used to provide the stimulus for the daily practice work.
>
> Dr. Russell J. Hosler [1968, p. 6] agreed that a student who does his homework by writing shorthand from sound will be employing a more effective procedure for maximum shorthand skill growth than one who does his homework entirely by copying shorthand outlines from plate material. Using taped homework eliminates the possibility that students will do homework while watching television, listening to the radio, and the

like. With taped homework students may get early experience in taking dictation from different people. Dictation of homework for beginning students tends to help prevent students from drawing outlines.

The advantages of taped homework are the following:

"1. Students are forced to concentrate when writing homework from tapes. Listening to homework as the student writes assures better concentration.

"2. Students get the experience of taking dictation from a variety of dictators.

"3. Dictation can be taken at higher speeds from tape than when copying from the book.

"4. Students will be more apt to know the outlines if they are seeing, hearing, and writing. There will be less tendency to be copying word pictures. Caution must be given that the textbook should not become a crutch. At times, probably at the control rates, the student should be encouraged to write without reference to the plate outlines.

"5. Students will write more fluently when forced to write to faster dictation."

In a study by Calland (1964, p. 155), he reported that: "Tapes, records, and multiple listening units are recommended for variation in the class routine and for supplementary dictation practice by all of the writers. No research could be found relating to this subject."

In his study of second-semester shorthand, Busch (1974, p. 253) concluded:

> Use of audio aids to provide dictation-recording practice (a) for which prepared previews or textbook shorthand plate material are available for reference, (b) for which material is dictated at rates to meet the needs of individual students, and (c) for which material is dictated according to a recognized speed-building plan significantly affects the dictation-recording and vocabulary achievement of students.
>
> Observing students' writing techniques as they work from recorded dictation and offering individual help for writing improvement contributes to the transcription component of vocabulary achievement.

Time Spent on Various Class Activities

Skabo (1968) conducted a study of the amount of time devoted to selected classroom activities in first-semester shorthand. He analyzed

time spent on nineteen classroom activities as they pertained to achievement in knowledge of shorthand theory.

Conclusions based on his study were:

"1. First semester high school shorthand classes that spend more time in reading and writing activities generally achieve a superior knowledge of theory principles than do those classes whose time is utilized in other classroom activities.
"2. First semester high school shorthand classes that spend less time in independent study generally achieve a superior knowledge of shorthand theory than do those classes who spend more time in this particular activity.
"3. First semester high school shorthand classes that spend more time in concerted reading and spelling of chalkboard and textbook outlines reach a higher achievement level on two measures of shorthand theory knowledge (outline construction and outline transcription).
"4. First semester high school shorthand classes that spend more time exposed to chalkboard demonstration achieve higher on one measure of knowledge of shorthand theory (outline construction).
"5. First semester high school shorthand classes that spend less time in the combined activities of independent study and transcribing activities achieve higher on measures of shorthand theory knowledges.
"6. First semester high school shorthand classes that spend more time in the combined activities of concerted and individual reading and spelling of chalkboard and textbook outlines generally achieve higher on one measure of knowledge of shorthand theory (outline transcription).
"7. Near perfect prediction of achievement in construction and transcription of disconnected outlines is possible when knowledge of time utilization of classroom activities is available" (pp. 107-108).

Skabo listed the following recommendations for teaching methodology in first-semester shorthand:

"1. The time utilized for all reading and writing activities regardless of the individual activity should be maximized since there appears to be evidence that the classes employing the greater amount of time for these activities tend to achieve significantly higher results on measures of shorthand theory knowledge.
"2. The time utilized for independent study could better be spent in reading and writing activities since there is evidence that classes who employ this activity the least tend to reach higher theory achievement.

"3. The time utilized for concerted reading and spelling of chalkboard and textbook outlines should be maximized since there appears to be some evidence that the classes who spend more time in this activity tend to achieve higher results on measures of shorthand theory knowledge.

"4. Careful consideration should be given to the amount of time spent in reading shorthand from the textbook in view of the fact that it is the most used activity, and no significant relationship results when the time spent in this activity is compared to achievement in knowledge of shorthand theory.

"5. Careful consideration should be given to the amount of time employed in miscellaneous teacher activities since a large amount of time is taken by this activity and no relationship exists between it and achievement in shorthand theory" (pp. 108-110).

Summary

There is little agreement as to which teaching practices are the most effective in the teaching of first-year Gregg Shorthand. The one best method for all teachers will probably never be devised.

Educators, however, should be ever alert for new ideas and practices as the best teaching is not accomplished by following someone else's methods. Teachers should experiment using new techniques and new practices. Some will undoubtedly be discarded; others will be adopted. Educators should constantly examine and evaluate their teaching practices in an effort to improve them.

CHAPTER III

PROCEDURES

The problem of this study was to identify and analyze selected teaching practices used in first-year Gregg Shorthand in United States high schools. The procedures followed in conducting this study are discussed in five sections: (1) preliminary procedures, (2) questionnaire development, (3) population selection, (4) data collection and handling, and (5) statistical treatment.

Preliminary Procedures

This study was initiated at the University of North Dakota during the fall semester of 1977. A search of related shorthand literature was made pertaining to practices employed in assigning homework, practices employed in testing reading progress, practices employed to teach writing from dictation, practices employed to teach brief forms and phrases, practices employed to encourage the writing of theoretically correct shorthand outlines, practices employed in testing new-matter dictation speed achievement, practices employed to teach typewriter transcription, practices employed in using shorthand laboratories, and time spent on various class activities in United States high schools. The following sources were used to identify relevant literature: Educational Resource Information Center--ERIC, Dissertation Abstracts, American Doctoral Dissertations Index, Education Index, Index to Research in Business and

Office Education, Business Education Index, and Master's Theses in Education. A number of research studies were requested through the Inter-Library Loan Service at Chester Fritz Library, University of North Dakota. Research studies conducted at other universities gave the researcher an opportunity to review shorthand research designs and findings of studies that were completed over a period of years by researchers in other sections of the country.

A research proposal was prepared and presented to the researcher's major advisor for tentative approval. After much discussion, suggestions, and several revisions, the proposal was presented in January, 1978, to the graduate faculty and students in the Department of Business and Vocational Education at the University of North Dakota. Revisions to the proposal were made based upon their recommendations, and it was then presented to the researcher's advisory committee in February, 1978. Final approval of the proposal was received from the Dean of the Graduate School in February, 1978.

Questionnaire Development

A questionnaire from a similar study conducted by Hooper (1977) of methods used in the teaching of first-year Gregg Shorthand in North Dakota high schools was used as a basis for construction of the questionnaire.

The questionnaire was presented to the graduate faculty and students in the Department of Business and Vocational Education at the University of North Dakota in January, 1978. Suggestions for revisions were made at that time. A pilot test of the tentative questionnaire was then administered to graduate students from the Business and

Vocational Education Department. Revisions to the instrument were made on the basis of recommendations from pilot test responses from those graduate students. The proposal and questionnaire were presented to the faculty advisory committee in February, 1978. A second pilot test of the tentative questionnaire was then administered to six area high school teachers of first-year Gregg Shorthand. Revisions to the questionnaire were again made based on recommendations from pilot test responses from area teachers.

Population Selection

Teachers of first-year Gregg Shorthand in selected high schools were participants in this national research project. A total of 511 public high schools were identified randomly from all 50 states within the United States. The 511 schools were randomly selected from Patterson's American Education resource book (Patterson, 1977). A sample by state was obtained by selecting one school per page using a table of random numbers.

Data Collection and Handling

On March 10, 1978, 511 questionnaires were mailed to the public high schools selected as the population for this study. Envelopes were addressed to the Business Education Chairperson of each school. Each contained a questionnaire (see appendix A), a cover letter (see appendix B), and a stamped return envelope. Chairpersons were instructed to complete and return the enclosed questionnaire if they personally taught a first-year Gregg Shorthand class. Chairpersons who did not personally teach a first-year Gregg Shorthand class were asked to give the

questionnaire to a teacher of first-year shorthand and encourage that individual to complete and return the research instrument. Each response was coded by school number for follow-up and analysis purposes.

Total completed and returned questionnaires were tallied on March 31, 1978. Results of the tally revealed that 211, or 41.3 percent, were returned by that date.

A follow-up was mailed on April 10, 1978, to 300 chairpersons who had not responded to the original mailing. The follow-up included a second cover letter (see appendix C), another questionnaire, and a stamped return envelope. Total completed and returned questionnaires were tallied on May 1, 1978. Results of the tally revealed that an additional 73 responses were obtained by the follow-up. The researcher then had a total of 284 responses, or 55.6 percent. A minimum of one response was obtained from 49 of the 50 states.

Statistical Treatment

The data from 284 questionnaires returned was keypunched on 80 column IBM computer cards and verified for accuracy by personnel at the University of North Dakota Computer Center.

The Statistical Package for the Social Sciences (SPSS) subprogram FREQUENCIES was utilized to compute frequency of response from the 284 teachers who returned the questionnaire. Frequency of response for the 215 teachers that met the criteria for answering Section II of the questionnaire were then set into table format. This was done for the purpose of reporting use of the various teaching practices as reported by this population. The SPSS subprogram CONDESCRIPTIVE was used to

determine measures of central tendency. Means, medians, modes, and ranges were reported where applicable.

SPSS subprogram PEARSON CORR was used to determine correlations between (1) amount of time available for classroom instruction, and (2) size of shorthand classes and estimated new-matter dictation speed achievement. Null hypotheses were rejected when correlations were found at or beyond the 0.05 level of significance.

SPSS subprogram REGRESSION was used to determine if there was a significant relationship between (1) practices employed to encourage the writing of theoretically correct shorthand outlines and (2) time spent on various class activities and estimated new-matter dictation speed achievement. An F-value was computed with all variables entered to determine significance/non-significance at the 0.05 level. This comparison permitted a rejection or retention of null hypotheses under consideration. STEPWISE REGRESSION (forward) was used to compare independent variables with estimated new-matter dictation speed achievement. Through this technique, the variable that explains the greatest amount of variance in the dependent variable will enter first, the variable that explains the greatest amount of variance in conjunction with the first will enter second, and so on until all variables meeting the statistical criteria are entered. Multiple correlations were computed for each step in the regression. By working forward, differences in this computation were determined and the contribution of each variable in conjunction with others entered prior was calculated. An F-value for each step in the regression was calculated to determine significance/non-significance at the 0.05 level.

SPSS subprogram ONEWAY was used to test for significant differences between and within groups. Each independent variable (teaching practices), within the study was run to determine analysis of variance by the dependent variable, teachers' estimate of new-matter dictation speed achievement. Some null hypotheses were tested with two statistical procedures. In such cases, one-way analysis of variance was used to retain or reject the null hypothesis because of its sensitivity to differences between and within groups. Means for each category of response and F-ratios were computed. Null hypotheses were rejected when F-ratios were found at or beyond the 0.05 level of significance. The resultant means reflect the ranking of each response option for each independent variable.

CHAPTER IV

FINDINGS

The purpose of this chapter is to present data obtained from a national survey of practices used in teaching first-year Gregg Shorthand (see appendix A). Frequency of response from 215 teachers to various practices of teaching first-year Gregg Shorthand were tabulated, and measures of central tendency are presented where applicable. The data were analyzed statistically using the Statistical Package for the Social Sciences (SPSS) subprograms PEARSON CORR, REGRESSION, and ONEWAY.

Teachers reported an estimated speed achievement score for 3,999 students. This score represented the teachers' estimate of students' single, highest dictation speed achievement on unpreviewed new-matter dictation for three minutes with a 95 percent accuracy standard. The dependent variable, estimated new-matter dictation speed achievement, was computed using only the 3,842 students who passed at least one speed take of 40 words a minute or higher. The independent variables, teaching practices, were then tested with the dependent variable, estimated new-matter dictation speed achievement.

The findings are presented under twelve headings: (1) demographic data; (2) time available for classroom instruction; (3) size of class; (4) practices employed in assigning homework; (5) practices employed in testing reading progress; (6) practices employed to teach writing from dictation; (7) practices employed to teach brief forms

and phrases; (8) practices employed to encourage the writing of theoretically correct shorthand outlines; (9) practices employed in testing new-matter dictation speed achievement; (10) practices employed to teach typewriter transcription; (11) practices employed in using shorthand laboratories; and (12) time spent on various class activities.

Demographic Data

Analysis of Responses

The survey produced 284 responses, or 55.6 percent, of the 511 questionnaires that were mailed to high schools throughout the United States. An analysis of the responses is given in table 1. Fifty-one of the schools surveyed did not offer first-year Gregg Shorthand during the 1976-1977 school year. An additional 18 schools did not have a teacher who had taught first-year shorthand during that period of time. Total usable responses, therefore, were 215.

TABLE 1

ANALYSIS OF RESPONSES

Classification	Number of Schools Responding	Percentage
Schools that met criteria for answering the questionnaire	215	75.7
Schools that did not offer first-year Gregg Shorthand	51	18.0
Schools that did not have a teacher who taught first-year shorthand during 1976-1977 school year	18	6.3
Total	284	100.0

Size of school

Size of school was analyzed to determine the number of responses from each classification. Schools having an enrollment in grades 10, 11, and 12 of 500 students or less were considered small; 501 through 1,000 students, medium; and 1,001 students or more, large. An analysis of total student enrollment of schools participating in this study is given in table 2. Of 215 teachers responding, 88, or 40.9 percent, indicated that their school had an enrollment of 1,001 students or more in grades 10, 11, and 12. Eighty-three, or 38.6 percent, said that their school had an enrollment of 500 or fewer students. Only 44, or 20.5 percent, indicated that their school had an enrollment of 501 through 1,000 students in grades 10, 11, and 12.

TABLE 2

TOTAL STUDENT ENROLLMENT IN SCHOOLS PARTICIPATING IN THE STUDY (N=215)

Classification	Frequency	Percentage
500 students or less	83	38.6
501 - 1,000 students	44	20.5
1,001 students or more	88	40.9
Total	215	100.0

Length of Class Period

An analysis of number of minutes available for each shorthand class period is given in table 3, page 42. Of 214 teachers responding to this question, 97, or 45.3 percent, stated that their class period

was from 51 to 55 minutes in length. Of that total, 80, or 37.4 percent of all respondents, indicated that they had 55 minutes available for instruction. Fifty-one, or 23.8 percent, said that their class period was from 46 to 50 minutes in length. Of that total, 43, or 20.1 percent of all respondents, indicated that they had 50 minutes available for instruction. A majority, 165, or 77.0 percent of all teachers responding to this question, indicated that their school had 46 or more minutes available for each class period in first-year shorthand.

TABLE 3

NUMBER OF MINUTES AVAILABLE FOR EACH SHORTHAND CLASS PERIOD

Classification	Frequency	Percentage
36 - 40 minutes	12	5.6
41 - 45 minutes	37	17.3
46 - 50 minutes	51	23.8
51 - 55 minutes	97	45.3
56 - 60 minutes	14	6.5
61 minutes or more	3	1.4
Total	214	99.9[a]
Missing Cases	1	---
Mean	51.150	
Median	52.214	
Mode	55.000	
Range	36 - 80	

[a]Rounding error prevents percentage column from totaling 100 percent.

A summary of mean speed achievement for various lengths of the shorthand class period as determined by one-way analysis of variance is given in table 4. The highest estimated speed achievement was obtained in class periods of 46 to 50 minutes in length. The mean speed achievement for class periods of more than 51 minutes dropped slightly. The means for class periods of 45 minutes or less were approximately nine words per minute less than the mean for the 46 to 50 minute classification.

TABLE 4

COMPARISON OF MEAN SPEED ACHIEVEMENT WITH NUMBER OF MINUTES AVAILABLE FOR EACH SHORTHAND CLASS PERIOD

Classification	Number of Teachers	Mean Speed by Group	Standard Deviation
36 - 40 minutes	10	67.11	8.06
41 - 45 minutes	28	67.29	11.19
46 - 50 minutes	33	76.60	16.83
51 - 55 minutes	68	73.72	12.24
56 - 60 minutes	7	73.42	8.76
61 minutes or more	3	69.66	19.65
Total	149		

Number of Class Periods Per Week

A breakdown of responses as to number of class periods available for shorthand instruction per week is given in table 5, page 44. A majority, 188, or 89.1 percent, of 211 teachers responding, said that they had from 5 to 10 class periods per week for shorthand instruction.

Of the 188 schools that fell into this interval, 178, or 84.4 percent, indicated that they had the traditional five class periods per week available for shorthand instruction.

TABLE 5

NUMBER OF SHORTHAND CLASS PERIODS AVAILABLE PER WEEK

Classification	Frequency	Percentage
1 - 4 periods	13	6.2
5 - 10 periods	188	89.1
11 periods or more	10	4.7
Total	211	100.0
Missing Cases	4	---
Mean	5.744	
Median	5.020	
Mode	5.000	
Range	1 - 25	

Mean speed by classification was determined by using one-way analysis of variance. The mean speed achievement of 73.45 words a minute for 5 to 10 class periods per week was higher than the means for the other classifications (see table 6, page 45).

TABLE 6

COMPARISON OF MEAN SPEED ACHIEVEMENT WITH NUMBER OF SHORTHAND CLASS PERIODS AVAILABLE PER WEEK

Classification	Number of Teachers	Mean Speed by Group	Standard Deviation
1 - 4 periods	8	66.75	13.49
5 - 10 periods	132	73.45	13.10
11 periods or more	7	67.68	15.94
Total	147		

Number of Weeks Per Year

Responses of 206 teachers as to how many weeks were available for shorthand instruction at their school is presented in table 7, page 46. A majority, 162, or 78.6 percent, indicated that their school year consisted of from 32 to 37 weeks. Of the schools that fell into this interval, 138, or 67.0 percent of all respondents, stated that their school year consisted of 36 weeks. Three teachers indicated that their school offered first-year shorthand for 18 weeks only. That would indicate that those schools offer beginning shorthand for one semester only. Thirty-five, or 17.0 percent of all respondents, said that their school year consisted of 38 weeks or more. This figure may be misleading because one or more of the teachers may have misinterpreted number six on the questionnaire (see appendix A).

TABLE 7

NUMBER OF WEEKS THAT WERE AVAILABLE FOR INSTRUCTION DURING THE SCHOOL YEAR

Classification	Frequency	Percentage
18 - 24 weeks	4	1.9
25 - 31 weeks	5	2.4
32 - 37 weeks	162	78.6
38 weeks or more	35	17.0
Total	206	99.9[a]
Missing Cases	9	---
Mean	36.015	
Median	36.080	
Mode	36.000	
Range	18 - 45	

[a]Rounding error prevents percentage column from totaling 100 percent.

A summary of mean speed achievement for number of weeks available for classroom instruction as determined by one-way analysis of variance is given in table 8, page 47. The mean speed achievement for schools having a school term of 32 to 37 weeks was 73.95 words a minute. That was approximately six words a minute higher than the mean speed achievement from schools reporting a school term of 38 weeks or more.

TABLE 8

COMPARISON OF MEAN SPEED ACHIEVEMENT WITH NUMBER OF WEEKS AVAILABLE FOR INSTRUCTION DURING THE SCHOOL YEAR

Classification	Number of Teachers	Mean Speed by Group	Standard Deviation
18 - 24 weeks	2	58.00	11.31
25 - 31 weeks	2	66.50	19.09
32 - 37 weeks	117	73.95	13.58
38 weeks or more	22	67.38	9.71
Total	143		

Time Available for Classroom Instruction

Hypothesis No. 1

There is no significant relationship between amount of time available for classroom instruction in first-year Gregg Shorthand and estimated new-matter dictation speed achievement.

A new variable, time, was created by multiplying questions 4, 5, and 6 (see appendix A). Multiplication of number of minutes available for each shorthand class period by number of shorthand class periods per week by number of weeks of instruction per year equaled the total number of minutes available for shorthand instruction at each school (see table 9, page 48).

Total time available for classroom instruction varied widely from school to school. Of 202 teachers responding to these questions, 52, or 25.7 percent, indicated that the school schedule allowed for 9,900 minutes of classroom instruction per year for first-year

TABLE 9

TOTAL TIME AVAILABLE FOR CLASSROOM INSTRUCTION (N=215)

Classification	Frequency	Percentage
2,000 minutes or less	1	0.5
2,001 - 4,000 minutes	0	---
4,001 - 6,000 minutes	7	3.5
6,001 - 8,000 minutes	29	14.4
8,001 - 10,000 minutes	117	57.9
10,001 - 12,000 minutes	28	13.9
12,001 - 14,000 minutes	2	1.0
14,001 - 16,000 minutes	1	0.5
16,001 - 18,000 minutes	4	2.0
18,001 - 20,000 minutes	3	1.5
20,001 minutes or more	10	5.0
Total	202	100.2[a]
Missing Cases	13	---
Mean	10,471.230	
Median	9,885.000	
Mode	9,900.000	
Range	1,870 - 43,200	

[a]Rounding error prevents percentage column from totaling 100 percent.

shorthand. Most of the teachers, 186, or 92.1 percent, indicated that they had at least 7,200 minutes available for instruction during the school year. The 7,200 minutes would be the equivalent of a 40-minute class period meeting five times per week for a term of 36 weeks. The mean for all respondents was 10,471.230; the median 9,885.000; and the mode 9,990.000. The least amount of time available was 1,870 minutes which was the situation at one school. At the other extreme, one school had 43,200 minutes available for instruction in first-year shorthand. The range, therefore, was 41,330.

A Pearson Correlation Coefficient was computed to determine the relationship between total amount of time available for classroom instruction in first-year shorthand and teachers' estimate of new-matter dictation speed achievement. A negative correlation coefficient of 0.081 was not significant at the 0.05 level. Null hypothesis 1 was retained for amount of time available for classroom instruction.

Size of Class

Hypothesis No. 2

There is no significant relationship between size of shorthand classes and estimated new-matter dictation speed achievement.

An analysis of average student enrollment in first-year shorthand classes of reporting schools is given in table 10, page 50.

Most teachers, 204, or 95.3 percent, indicated that their average class enrollment in first-year shorthand was 30 students or less. One hundred, or 46.7 percent of 214 respondents, indicated that their average class enrollment fell into the 11 to 20 student interval. Ten teachers indicated that their average class enrollment was 31 or more.

TABLE 10

AVERAGE STUDENT ENROLLMENT IN FIRST-YEAR SHORTHAND CLASSES

Classification	Frequency	Percentage
1 - 10 students	35	16.4
11 - 20 students	100	46.7
21 - 30 students	69	32.2
31 students or more	10	4.7
Total	214	100.0
Missing Cases	1	---
Mean	19.168	
Median	19.817	
Mode	20.000	
Range	2 - 75	

This figure may be misleading as the researcher felt that one or more of the teachers may have reported a total number of students if they taught more than one section of beginning shorthand. The mean for all respondents was 19.168.

A Pearson Correlation Coefficient was computed to determine the relationship between size of the first-year shorthand class and teachers' estimate of new-matter dictation speed achievement. The negative correlation coefficient of 0.188 was significant beyond the 0.05 level. Null hypothesis 2 was rejected for size of shorthand classes.

Mean speed achievement by classification was determined using one-way analysis of variance. The mean speed achievement of 76.38 for classes consisting of from 1 to 10 students was considerably higher than that for other classifications. A definite trend was indicated. As class size increased, mean speed achievement declined (see table 11).

TABLE 11

COMPARISON OF MEAN SPEED ACHIEVEMENT WITH AVERAGE STUDENT ENROLLMENT IN FIRST-YEAR SHORTHAND CLASSES

Classification	Number of Teachers	Mean Speed by Group	Standard Deviation
1 - 10 students	28	77.47	11.32
11 - 20 students	71	72.90	10.93
21 - 30 students	45	70.94	16.13
31 students or more	5	62.30	13.50
Total	149		

Practices Employed in Assigning Homework

Hypothesis No. 3

There is no significant difference between practices employed in assigning homework in Book I or Book II of first-year Gregg Shorthand and estimated new-matter dictation speed achievement.

Homework Goals

The responses of teachers of first-year Gregg Shorthand as to whether they gave their students specific reading and writing goals is shown in table 12, page 52.

TABLE 12

USE OF READING AND WRITING GOALS FOR OUT-OF-CLASS HOMEWORK PREPARATION

Classification	Book I f	Book I %[a]	Book II f	Book II %[a]
Reading and writing goals	136	64.8	139	69.2
No specific goals	40	19.0	36	17.9
Reading goals only	24	11.4	6	3.0
Writing goals only	7	3.3	17	8.5
No homework required	3	1.4	3	1.5
Total	210	99.9[b]	201	99.9[b]
Missing Cases	5		14	

[a] f denotes frequency, and % indicates percentage.

[b] Rounding error prevents percentage column from totaling 100 percent.

In Book I of first-year shorthand, 207, or 98.6 percent of 210 respondents, required homework; and 167, or 79.5 percent, used specific goals for out-of-class homework preparation. A majority of teachers, 136, or 64.8 percent, indicated that they gave both reading and writing goals for out-of-class homework preparation. The procedure of not setting any specific goals had a response of 40, or 19.0 percent. Setting reading goals only had a response of 24, or 11.4 percent; and setting of writing goals only had a response of 7, or 3.3 percent.

In Book II of first-year shorthand, 198, or 98.5 percent of 201 respondents, required homework; and 162, or 80.7 percent, used specific

goals for out-of-class homework preparation. A majority of teachers, 139, or 69.2 percent, indicated that they gave both reading and writing goals for out-of-class homework preparation. The practice of not setting any specific goals had a response of 36, or 17.9 percent. Setting writing goals only had a response of 17, or 8.5 percent; and setting of reading goals only had a response of 6, or 3.0 percent (see Table 12, page 52).

A summary shown as tables 13 and 14 indicates that there was no significant difference between various practices of requiring goals

TABLE 13

ONE-WAY ANALYSIS OF VARIANCE FOR USE OF READING AND WRITING GOALS FOR OUT-OF-CLASS HOMEWORK PREPARATION IN BOOK I

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Square	F Ratio
Between Groups	4	283.63	70.91	0.411[a]
Within Groups	142	24,491.16	172.47	
Total	146	24,774.78		

[a]Not significant at the 0.05 level.

TABLE 14

ONE-WAY ANALYSIS OF VARIANCE FOR USE OF READING AND WRITING GOALS FOR OUT-OF-CLASS HOMEWORK PREPARATION IN BOOK II

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Square	F Ratio
Between Groups	4	427.68	106.92	0.619[a]
Within Groups	137	23,651.64	172.64	
Total	141	24,079.32		

[a]Not significant at the 0.05 level.

for out-of-class homework preparation and teachers' estimate of new-matter dictation speed achievement. Null hypothesis 3 was retained for homework goals in Book I and Book II.

Mean speed achievement by classification for Book I and Book II is summarized in Tables 15 and 16.

TABLE 15

COMPARISON OF MEAN SPEED ACHIEVEMENT WITH USE OF READING AND WRITING GOALS FOR OUT-OF-CLASS HOMEWORK PREPARATION IN BOOK I

Classification	Number of Teachers	Mean Speed by Group	Standard Deviation
No homework required	2	78.83	10.14
No specific goals	27	71.06	12.26
Reading goals only	16	72.79	10.62
Writing goals only	4	68.85	6.55
Reading and writing goals	98	73.67	13.87
Total	147		

TABLE 16

COMPARISON OF MEAN SPEED ACHIEVEMENT WITH USE OF READING AND WRITING GOALS FOR OUT-OF-CLASS HOMEWORK PREPARATION IN BOOK II

Classification	Number of Teachers	Mean Speed by Group	Standard Deviation
No homework required	2	78.83	10.14
No specific goals	26	72.72	13.05
Reading goals only	6	70.25	9.40
Writing goals only	11	68.40	10.29
Reading and writing goals	97	73.94	13.61
Total	142		

Homework Reading

The responses of teachers as to number of times they required their students to read the entire homework lesson is shown in table 17.

TABLE 17

NUMBER OF TIMES STUDENTS WERE REQUIRED TO READ HOMEWORK LESSONS

Classification	Book I f	Book I %	Book II f	Book II %[a]
As many times as necessary to meet reading goal	85	40.7	67	34.2
One time	60	28.7	69	35.2
Partial lesson required	35	16.7	33	16.8
Two times	25	12.0	21	10.7
Not required	4	1.9	6	3.1
Total	209	100.0	196	100.0
Missing Cases	6		19	

[a]f denotes frequency, and % indicates percentage.

In Book I of first-year shorthand, 205, or 98.1 percent of 209 respondents, required their students to read at least a portion of the homework lesson. A majority of the teachers, 170, or 81.4 percent, indicated that they had their students read the homework lesson at least once. More teachers, 85, or 40.7 percent, required their students to read the homework lesson as many times as necessary to meet an established reading goal than those using other practices of assigning homework reading.

In Book II of first-year shorthand, 190, or 96.9 percent of 196 respondents, required their students to read at least a portion of the homework lesson. As was the case in Book I, a majority of teachers, 157, or 80.1 percent, indicated that they had their students read the homework lesson at least once. Most teachers, 136, or 69.4 percent, stated that they either had their students read the homework once or as many times as necessary to meet an established goal.

Tables 18 and 19 indicate that there was no significant difference between the number of times students were to read the homework

TABLE 18

ONE-WAY ANALYSIS OF VARIANCE FOR NUMBER OF TIMES STUDENTS WERE REQUIRED TO READ HOMEWORK LESSONS IN BOOK I

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Square	F Ratio
Between Groups	4	203.10	50.78	0.283[a]
Within Groups	142	25,471.18	179.37	
Total	146	25,674.28		

[a]Not significant at the 0.05 level.

TABLE 19

ONE-WAY ANALYSIS OF VARIANCE FOR NUMBER OF TIMES STUDENTS WERE REQUIRED TO READ HOMEWORK LESSONS IN BOOK II

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Square	F Ratio
Between Groups	4	461.18	115.30	0.647[a]
Within Groups	133	23,691.88	178.13	
Total	137	24,153.07		

[a]Not significant at the 0.05 level.

lesson and teachers' estimate of new-matter dictation speed achievement. Null hypothesis 3 was retained for number of times students were to read the entire homework lesson in Book I and Book II.

Mean speeds by classification for Book I and Book II are given in tables 20 and 21.

TABLE 20

COMPARISON OF MEAN SPEED ACHIEVEMENT WITH NUMBER OF TIMES STUDENTS WERE REQUIRED TO READ HOMEWORK LESSONS IN BOOK I

Classification	Number of Teachers	Mean Speed by Group	Standard Deviation
Not required	3	73.43	13.89
Partial lesson required	20	72.61	19.33
One time	42	70.87	12.77
Two times	20	73.04	12.70
As many times as necessary to meet reading goal	62	73.68	11.61
Total	147		

TABLE 21

COMPARISON OF MEAN SPEED ACHIEVEMENT WITH NUMBER OF TIMES STUDENTS WERE REQUIRED TO READ HOMEWORK LESSONS IN BOOK II

Classification	Number of Teachers	Mean Speed by Group	Standard Deviation
Not required	5	69.66	11.88
Partial lesson required	19	74.85	18.50
One time	52	70.97	12.88
Two times	14	74.72	12.37
As many times as necessary to meet reading goal	48	74.32	11.78
Total	138		

Homework Writing

Responses of teachers as to number of times they required their students to write the entire homework lesson is shown in table 22.

TABLE 22

NUMBER OF TIMES STUDENTS WERE REQUIRED TO WRITE HOMEWORK LESSONS

Classification	Book I f	Book I %	Book II f	Book II %[a]
One time	96	48.0	102	54.0
Partial lesson required	46	23.0	37	19.6
Two times	31	15.5	29	15.3
As many times as necessary to meet writing goal	27	13.5	20	10.6
Not required	0	---	1	0.5
Total	200	100.0	189	100.0
Missing cases	15		26	

[a]f denotes frequency, and % indicates percentage.

In Book I of first-year shorthand, 200, or 100.0 percent of the respondents, required their students to write at least a portion of the homework lesson. Of the 200 respondents, 96, or 48.0 percent, indicated that they had their students write the homework lesson once. Other responses were 46, or 23.0 percent, for requiring a part of each lesson only; and 31, or 15.5 percent, for requiring the lesson to be written as many times as necessary to meet an established writing goal.

In Book II of first-year shorthand, only one teacher, or 0.5 percent, indicated not requiring at least a portion of the homework lesson to be written. A majority of teachers, 102, or 54.0 percent, stated that they had their students write the homework lesson once. Other responses were 37, or 19.6 percent, for requiring a part of each lesson only; 29, or 15.3 percent, for requiring the lesson to be written two times; and 20, or 10.6 percent, for requiring the lesson to be written as many times as necessary to meet an established writing goal.

A summary showing one-way analysis of variance for number of times students were asked to write the homework lesson is shown in tables 23 and 24. There was no significant difference. Null hypothesis 3 was retained for number of times students were asked to write the entire homework lesson in Book I and Book II.

TABLE 23

ONE-WAY ANALYSIS OF VARIANCE FOR NUMBER OF TIMES STUDENTS WERE REQUIRED TO WRITE HOMEWORK LESSONS IN BOOK I

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Square	F Ratio
Between Groups	3	351.13	117.04	0.651[a]
Within Groups	136	24,447.83	179.76	
Total	139	24,798.96		

[a]Not significant at the 0.05 level.

TABLE 24

ONE-WAY ANALYSIS OF VARIANCE FOR NUMBER OF TIMES STUDENTS WERE REQUIRED TO WRITE HOMEWORK LESSONS IN BOOK II

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Square	F Ratio
Between Groups	3	559.46	186.49	1.053[a]
Within Groups	130	23,025.28	177.12	
Total	133	23,584.74		

[a]Not significant at the 0.05 level.

Mean speed achievement by classification as determined by one-way analysis of variance is presented in table 25 and table 26, page 61.

TABLE 25

COMPARISON OF MEAN SPEED ACHIEVEMENT WITH NUMBER OF TIMES STUDENTS WERE REQUIRED TO WRITE HOMEWORK LESSONS IN BOOK I

Classification	Number of Teachers	Mean Speed by Group	Standard Deviation
Not required	0	0.00	---
Partial lesson required	28	75.45	17.47
One time	66	71.66	12.31
Two times	26	73.88	10.79
As many times as necessary to meet writing goal	20	71.41	13.46
Total	140		

TABLE 26

COMPARISON OF MEAN SPEED ACHIEVEMENT WITH NUMBER OF TIMES STUDENTS WERE REQUIRED TO WRITE HOMEWORK LESSONS IN BOOK II

Classification	Number of Teachers	Mean Speed by Group	Standard Deviation
Not required	0	0.00	---
Partial lesson required	25	76.94	18.08
One time	74	71.68	11.90
Two times	21	73.70	10.77
As many times as necessary to meet writing goal	14	71.45	13.95
Total	134		

Introduction of Homework Writing

An analysis of teachers' responses as to day of instruction and lesson number at which they required their students to write the entire homework lesson as an out-of-class assignment is presented in table 27.

TABLE 27

DAY AND LESSON WHEN STUDENTS BEGAN WRITING ENTIRE HOMEWORK LESSONS

Classification	Mean	Median	Mode	Range Low	Range High
		Book I			
Day	10.452	8.429	10.000	1	91[a]
Lesson	8.503	6.381	1.000	1	49[b]
		Book II			
Day	38.667	15.000	2.000	2	99[c]
Lesson	3.500	1.250	1.000	1	15[d]

[a]Valid cases were 157.

[b]Valid cases were 189.

[c]Valid cases were 3.

[d]Valid cases were 6.

In Book I, 142, or 90.5 percent of 157 teachers responding, indicated that they required the entire homework lesson to be written by the twentieth day of instruction. A majority, 108, or 68.8 percent of all respondents, indicated that they initiated the practice by the tenth day of instruction. Only 15, or 9.6 percent, delayed introduction of that practice beyond the twentieth day of instruction. The mean for all respondents was 10.452 (see table 27).

Lesson 1 was the most frequent response as to lesson at which homework writing began. Most teachers, 175, or 92.6 percent, indicated that they began this practice at or prior to Lesson 20. A majority of teachers, 141, or 74.6 percent, began the practice at or prior to Lesson 10. Very few, 14, or 7.4 percent, delayed introduction of this practice until after Lesson 20. The mean for all respondents was 8.503 (see table 27). An analysis of group means for day of instruction and lesson number at which teachers began requiring an entire homework lesson to be written may indicate that they might not cover a lesson per day in early stages of beginning shorthand instruction. Perhaps they utilize the reading approach for the first 20 days and then at that point return to Lesson 1 for the homework writing assignment.

Only three teachers delayed introduction of writing the entire homework lesson until Book II of first-year shorthand. The mean day and lesson for Book II is given in table 27.

Pearson Correlation Coefficients were computed to determine the relationship between day of instruction and lesson number at which writing the entire homework lesson was begun and teachers' estimate of new-matter dictation speed achievement. Correlation coefficients of -0.105

for day and 0.037 for lesson in Book I were not significant at the 0.05 level. Correlation coefficients of 0.000 for day and -0.930 for lesson in Book II were not significant at the 0.05 level. With only two valid cases the correlation coefficient for day could not be computed.

A summary showing one-way analysis of variance for day and lesson at which writing an entire homework lesson was started is shown in tables 28, 29, 30, and 31. There was no significant difference. Null hypothesis 3 was retained for day and lesson when writing an entire homework lesson was begun in Book I and Book II.

TABLE 28

ONE-WAY ANALYSIS OF VARIANCE FOR DAY WHEN STUDENTS BEGAN WRITING ENTIRE HOMEWORK LESSONS IN BOOK I

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Square	F Ratio
Between Groups	2	538.09	269.04	1.817[a]
Within Groups	108	15,995.64	148.11	
Total	110	16,533.72		

[a]Not significant at the 0.05 level.

TABLE 29

ONE-WAY ANALYSIS OF VARIANCE FOR LESSON WHEN STUDENTS BEGAN WRITING ENTIRE HOMEWORK LESSONS IN BOOK I

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Square	F Ratio
Between Groups	2	85.86	42.93	0.290[a]
Within Groups	130	19,268.20	148.22	
Total	132	19,354.06		

[a]Not significant at the 0.05 level.

TABLE 30

ONE-WAY ANALYSIS OF VARIANCE FOR DAY WHEN STUDENTS BEGAN WRITING ENTIRE HOMEWORK LESSONS IN BOOK II

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Square	F Ratio
Between Groups	1	23.39	23.39	---[a]
Within Groups	0	0.00	0.00	
Total	1	23.39		

[a]Insufficient number of responses to allow computation of F-ratio.

TABLE 31

ONE-WAY ANALYSIS OF VARIANCE FOR LESSON WHEN STUDENTS BEGAN WRITING ENTIRE HOMEWORK LESSONS IN BOOK II

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Square	F Ratio
Between Groups	1	52.41	52.41	6.381[a]
Within Groups	1	8.21	8.21	
Total	2	60.62		

[a]Not significant at the 0.05 level.

Mean speeds by classification for day and lesson at which homework writing was initiated is given in tables 32, 33, 34, page 65, and table 35, page 66.

TABLE 32

COMPARISON OF MEAN SPEED ACHIEVEMENT WITH DAY WHEN STUDENTS BEGAN WRITING ENTIRE HOMEWORK LESSONS IN BOOK I

Classification	Number of Teachers	Mean Speed by Group	Standard Deviation
Day 1 - 10	74	72.20	12.11
Day 11 - 20	27	74.80	10.05
Day 21 or more	10	66.23	17.18
Total	111		

TABLE 33

COMPARISON OF MEAN SPEED ACHIEVEMENT WITH LESSON WHEN STUDENTS BEGAN WRITING ENTIRE HOMEWORK LESSONS IN BOOK I

Classification	Number of Teachers	Mean Speed by Group	Standard Deviation
Lesson 1 - 10	98	72.51	12.26
Lesson 11 - 20	27	70.73	12.22
Lesson 21 or more	8	73.71	10.69
Total	133		

TABLE 34

COMPARISON OF MEAN SPEED ACHIEVEMENT WITH DAY WHEN STUDENTS BEGAN WRITING ENTIRE HOMEWORK LESSONS IN BOOK II

Classification	Number of Teachers	Mean Speed by Group	Standard Deviation
Day 1 - 10	0	0.00	---
Day 11 - 20	1	62.86	---
Day 21 or more	1	69.70	---
Total	2		

TABLE 35

COMPARISON OF MEAN SPEED ACHIEVEMENT WITH LESSON WHEN STUDENTS BEGAN WRITING ENTIRE HOMEWORK LESSONS IN BOOK II

Classification	Number of Teachers	Mean Speed by Group	Standard Deviation
Lesson 1 - 10	2	71.72	2.86
Lesson 11 - 20	1	62.86	---
Lesson 21 or more	0	0.00	---
Total	3		

Checking Homework Preparation

Responses from teachers of first-year Gregg Shorthand as to their method of checking homework preparation of their students is shown in table 36.

TABLE 36

PRACTICES OF CHECKING HOMEWORK PREPARATION

Classification	Book I f	Book I %	Book II f	Book II %[a]
Collected and checked daily	123	59.7	89	46.6
Collected and checked occasionally	48	23.3	47	24.6
In-class reading from homework notes	15	7.3	28	14.7
Collected and checked completed shorthand notebooks	11	5.3	16	8.4
Collected but not checked	8	3.9	11	5.8
Homework not required	1	0.5	0	---
Total	206	100.0	191	100.1[b]
Missing Cases	9		24	

[a]f denotes frequency, and % indicates percentage.

[b]Rounding error prevents percentage column from totaling 100 percent.

In Book I of first-year shorthand, only 1, or 0.5 percent of all teachers, did not require homework. Of 206 respondents, 197, or 95.6 percent, indicated that they checked their students' homework preparation in some manner. A majority of respondents, 171, or 83.0 percent, stated that they used the practice of collecting and checking shorthand notes either daily or occasionally. Only 8, or 3.9 percent, collected the shorthand notes without checking them.

In Book II of first-year shorthand, 191, or 100.0 percent of all respondents, required homework for their students. As in Book I, a majority, 136, or 71.2 percent, stated that they collected and checked shorthand notes either on a daily basis or at least occasionally. Only 11, or 5.7 percent, collected the shorthand notes without checking them.

One-way analysis of variance was used to determine differences in various practices of checking homework preparation and estimated new-matter dictation speed achievement. Table 37 and table 38, page 68, indicate that there was no significant difference between practices employed to check homework preparation and estimated new-matter dictation speed achievement. Null hypothesis 3 was retained for both Book I and Book II.

TABLE 37

ONE-WAY ANALYSIS OF VARIANCE FOR PRACTICES OF CHECKING HOMEWORK PREPARATION IN BOOK I

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Square	F Ratio
Between Groups	5	69.36	13.87	0.075[a]
Within Groups	137	25,230.77	184.17	
Total	142	25,300.12		

[a]Not significant at the 0.05 level.

TABLE 38

ONE-WAY ANALYSIS OF VARIANCE FOR PRACTICES OF CHECKING HOMEWORK PREPARATION IN BOOK II

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Square	F Ratio
Between Groups	4	272.63	68.16	0.372[a]
Within Groups	128	23,426.97	183.02	
Total	132	23,699.59		

[a]Not significant at the 0.05 level.

A summary of mean speed achievement for various practices used to check homework preparation by classification is presented in table 39 and table 40, page 69.

TABLE 39

COMPARISON OF MEAN SPEED ACHIEVEMENT WITH PRACTICES OF CHECKING HOMEWORK PREPARATION IN BOOK I

Classification	Number of Teachers	Mean Speed by Group	Standard Deviation
Homework not required	1	76.25	---
Collected but not checked	6	72.85	9.71
Collected and checked daily	87	72.27	13.79
Collected and checked occasionally	36	73.11	13.69
Collected and checked completed shorthand notebooks	7	71.52	12.37
In-class reading from homework notes	6	70.23	13.57
Total	143		

TABLE 40

COMPARISON OF MEAN SPEED ACHIEVEMENT WITH PRACTICES OF CHECKING HOMEWORK PREPARATION IN BOOK II

Classification	Number of Teachers	Mean Speed by Group	Standard Deviation
Homework not required	0	0.00	---
Collected but not checked	10	72.92	8.18
Collected and checked daily	66	71.33	14.42
Collected and checked occasionally	35	74.73	13.16
Collected and checked completed shorthand notebooks	7	73.42	17.26
In-class reading from homework notes	15	72.38	10.77
Total	133		

Practices Employed in Testing Reading Progress

Hypothesis No. 4

There is no significant difference between practices employed to test reading progress in Book I or Book II of first-year Gregg Shorthand and estimated new-matter dictation speed achievement.

A breakdown of various practices that teachers used to check reading progress is given in table 41, page 70.

In Book I of first-year shorthand, 80, or 39.0 percent, said that they checked reading progress by assigning a grade based upon daily reading of homework notes. An additional 33.7 percent, or 69 teachers, stated that they assigned their reading grades based upon established

TABLE 41

PRACTICES OF CHECKING READING PROGRESS

Classification	Book I f	Book I %	Book II f	Book II %[a]
Assigned grades from daily reading of homework	80	39.0	58	31.5
Assigned grades based on established reading goals	69	33.7	53	28.8
Reading grade not assigned	38	18.5	54	29.3
Assigned grade at end of marking period	18	8.8	19	10.3
Total	205	100.0	184	99.9[b]
Missing Cases	10		31	

[a]f denotes frequency, and % indicates percentage.

[b]Rounding error prevents percentage column from totaling 100 percent.

goals. Eighteen, or 8.8 percent, indicated that they arbitrarily assigned a reading grade at the end of a marking period. Reading grades were not assigned by 38, or 18.5 percent of the teachers.

In Book II of first-year shorthand, 54, or 29.3 percent of all teachers, did not assign a reading grade which is a 10.8 percent increase from what was reported for Book I. As in Book I, the practice of assigning a grade to daily reading of homework notes was the most popular response. Fifty-eight, or 31.5 percent, used that method of checking their students' reading progress. Assigning a reading grade based upon an established goal had a response of 53, or 28.8 percent. Nineteen,

or 10.3 percent, indicated that they arbitrarily assigned a reading grade at the end of a marking period (see table 41).

Tables 42 and 43 show that there was no significant difference between mean speeds for various practices of testing reading progress in Book I and Book II and estimated new-matter dictation speed achievement. Since neither F-value was significant at the 0.05 level, null hypothesis 4 was retained.

TABLE 42

ONE-WAY ANALYSIS OF VARIANCE FOR PRACTICES OF CHECKING READING PROGRESS IN BOOK I

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Square	F Ratio
Between Groups	3	993.17	331.06	1.941[a]
Within Groups	140	23,876.54	170.55	
Total	143	24,869.71		

[a]Not significant at the 0.05 level.

TABLE 43

ONE-WAY ANALYSIS OF VARIANCE FOR PRACTICES OF CHECKING READING PROGRESS IN BOOK II

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Square	F Ratio
Between Groups	3	431.69	143.90	0.803[a]
Within Groups	124	22,212.18	179.13	
Total	127	22,643.88		

[a]Not significant at the 0.05 level.

Differences in mean speed achievement for each classification as determined by one-way analysis of variance is shown in tables 44 and 45.

TABLE 44

COMPARISON OF MEAN SPEED ACHIEVEMENT WITH PRACTICES OF CHECKING READING PROGRESS IN BOOK I

Classification	Number of Teachers	Mean Speed by Group	Standard Deviation
Reading grade not assigned	20	68.66	13.81
Assigned grades based on established reading goals	48	74.73	11.42
Assigned grades from daily reading of homework	60	72.62	14.40
Assigned grades at end of marking period	16	67.04	11.21
Total	144		

TABLE 45

COMPARISON OF MEAN SPEED ACHIEVEMENT WITH PRACTICES OF CHECKING READING PROGRESS IN BOOK II

Classification	Number of Teachers	Mean Speed by Group	Standard Deviation
Reading grade not assigned	36	71.15	14.60
Assigned grades based on established reading goals	34	75.57	10.92
Assigned grades from daily reading of homework	44	73.07	14.60
Assigned grades at end of marking period	14	70.55	11.26
Total	128		

Practices Employed to Teach Writing from Dictation

Hypothesis No. 5

There is no significant difference between practices employed to teach writing from dictation in Book I or Book II of first-year Gregg Shorthand and estimated new-matter dictation speed achievement.

Introduction of Practice-Matter Dictation

Teachers were asked to indicate day of instruction and lesson number at which they introduced practice-matter dictation in Book I of first-year shorthand.

Of 138 teachers responding as to day when they introduced practice-matter dictation, 101, or 73.2 percent, indicated that they started giving dictation by the twentieth day of instruction. Of that total, 69, or 44.9 percent of all teachers responding, indicated that they started their dictation by the tenth day of instruction. The mean for all respondents was 17.993 (see table 46).

TABLE 46

DAY AND LESSON WHEN STUDENTS BEGAN WRITING PRACTICE-MATTER DICTATION FROM MATERIAL IN BOOK I

Classification	Mean	Median	Mode	Range
Day[a]	17.993	12.000	10.0	1 - 75
Lesson[b]	15.679	10.188	1.0	1 - 60

[a]Missing cases were 77.

[b]Missing cases were 28.

Of 187 teachers responding as to lesson number at which they introduced practice-matter dictation, 139, or 74.3 percent, indicated that their dictation began by Lesson 20. Of that total, 96, or 51.3 percent of all teachers responding, indicated that they started their dictation by Lesson 10. The mean for all respondents was 15.679 (see table 46).

Pearson Correlation Coefficients were computed to determine the relationship between the point at which practice-matter dictation was introduced and teachers' estimate of new-matter dictation speed achievement. Correlation coefficients of 0.030 for day of instruction and 0.038 for lesson number were not significant at the 0.05 level.

A summary showing one-way analysis of variance for day and lesson at which practice-matter dictation was introduced is presented in table 47 and table 48, page 75. There was no significant difference. Null hypothesis 5 was retained for day and lesson when practice-matter dictation was begun.

TABLE 47

ONE-WAY ANALYSIS OF VARIANCE FOR DAY WHEN STUDENTS BEGAN WRITING FROM DICTATION

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Square	F Ratio
Between Groups	2	74.42	37.21	0.236[a]
Within Groups	95	15,006.89	157.97	
Total	97	15,081.31		

[a]Not significant at the 0.05 level.

TABLE 48

ONE-WAY ANALYSIS OF VARIANCE FOR LESSON WHEN STUDENTS BEGAN WRITING FROM DICTATION

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Square	F Ratio
Between Groups	2	359.70	179.85	1.185[a]
Within Groups	125	18,976.88	151.82	
Total	127	19,336.58		

[a]Not significant at the 0.05 level.

A summary of mean differences for day and lesson at which practice-matter dictation was introduced as determined by one-way analysis of variance is shown in tables 49 and 50.

TABLE 49

COMPARISON OF MEAN SPEED ACHIEVEMENT WITH DAY WHEN STUDENTS BEGAN WRITING FROM DICTATION

Classification	Number of Teachers	Mean Speed by Group	Standard Deviation
Day 1 - 10	41	72.25	13.76
Day 11 - 20	30	74.29	12.11
Day 21 or more	27	73.47	11.06
Total	98		

TABLE 50

COMPARISON OF MEAN SPEED ACHIEVEMENT WITH LESSON WHEN STUDENTS BEGAN WRITING FROM DICTATION

Classification	Number of Teachers	Mean Speed by Group	Standard Deviation
Lesson 1 - 10	64	71.59	13.09
Lesson 11 - 20	33	74.62	10.69
Lesson 21 or more	31	70.01	12.29
Total	128		

Introductory Dictation Speed

An analysis of dictation speed for introducing practice-matter dictation in Book I of first-year shorthand is given in table 51.

TABLE 51

DICTATION SPEED FOR INTRODUCING PRACTICE-MATTER DICTATION IN BOOK I

Classification	Frequency	Percentage
20 WPM	11	5.2
25 WPM	3	1.4
30 WPM	11	5.2
35 WPM	1	0.5
40 WPM	85	40.3
50 WPM	13	6.2
60 WPM	6	2.8
70 WPM	2	0.9
Untimed	79	37.4
Total	211	99.9[a]
Missing Cases	4	---
Mean	39.470[b]	
Median	39.853[b]	
Mode	40.000[b]	
Range	20 - 70	

[a]Rounding error prevents percentage column from totaling 100 percent.

[b]Figure is for 132 cases that reported using a fixed rate of dictation.

Of 211 teachers responding, 85, or 40.3 percent, indicated that their introductory rate of dictation was 40 words per minute. A majority, 132, or 62.6 percent, used a fixed rate of dictation. A large percentage, 37.4, or 79 respondents, stated that they used untimed dictation.

Pearson Correlation Coefficients were computed to determine the relationship between dictation speed for introducing practice-matter dictation in Book I and teachers' estimate of new-matter dictation speed achievement. The correlation coefficients of 0.139 for timed dictation and -0.095 for untimed dictation was not significant at the 0.05 level.

One-way analysis of variance was used to determine if there was a significant difference between various introductory rates of practice-matter dictation and estimated new-matter dictation speed achievement. Table 52 shows no significant difference. Null hypothesis 5 was retained.

TABLE 52

ONE-WAY ANALYSIS OF VARIANCE FOR DICTATION SPEED FOR INTRODUCING PRACTICE-MATTER DICTATION IN BOOK I

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Square	F Ratio
Between Groups	5	937.05	187.41	1.053[a]
Within Groups	141	25,104.19	178.04	
Total	146	26,041.24		

[a]Not significant at the 0.05 level.

Mean speed achievement by classification as shown by one-way analysis of variance is presented in table 53, page 78.

TABLE 53

COMPARISON OF MEAN SPEED ACHIEVEMENT WITH DICTATION SPEED FOR INTRODUCING PRACTICE-MATTER DICTATION IN BOOK I

Classification	Number of Teachers	Mean Speed by Group	Standard Deviation
29 WPM or less	8	69.01	15.31
30 - 39 WPM	7	76.86	10.95
40 - 49 WPM	62	73.17	13.92
50 - 59 WPM	8	73.66	10.10
60 - 69 WPM	4	84.21	12.89
70 WPM or more	0	0.00	---
Untimed dictation	58	71.05	13.06
Total	147		

Introductory Dictation Material

Teachers were asked to indicate the type of material they used to initially introduce students to writing from practice-matter dictation. An analysis of their responses is given in table 54.

TABLE 54

TYPE OF MATERIAL USED TO INITIALLY INTRODUCE PRACTICE-MATTER DICTATION

Classification	Frequency	Percentage
Sentences	91	42.7
Partial sentences	50	23.5
Short letters	46	21.6
Paragraphs	26	12.2
Total	213	100.0
Missing Cases	2	---

A majority of teachers, 141, or 66.2 percent, said that they used either sentences or partial sentences to introduce their students to practice-matter dictation. Of that total, 91, or 42.7 percent of all respondents, stated that they used sentences. Twenty-six, or 12.2 percent, said that they used paragraphs. A large percentage, however, indicated that they used short letters to introduce their students to writing from dictation. Of 213 teachers responding, a total of 167, or 78.4 percent, break a letter down into smaller parts for introducing practice-matter dictation.

Table 55 shows one-way analysis of variance for type of material used to initially introduce practice-matter dictation. The F-ratio of 2.448 was not significant at the 0.05 level. Null hypothesis 5 was retained for type of material used to initially introduce practice-matter dictation.

TABLE 55

ONE-WAY ANALYSIS OF VARIANCE FOR TYPE OF MATERIAL USED TO INITIALLY INTRODUCE PRACTICE-MATTER DICTATION

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Square	F Ratio
Between Groups	3	1,259.20	419.73	2.448[a]
Within Groups	144	24,688.26	171.45	
Total	147	25,947.46		

[a]Not significant at the 0.05 level.

A summary of mean speeds by classification as determined by one-way analysis of variance is given in table 56, page 80.

TABLE 56

COMPARISON OF MEAN SPEED ACHIEVEMENT WITH TYPE OF MATERIAL USED TO INITIALLY INTRODUCE PRACTICE-MATTER DICTATION

Classification	Number of Teachers	Mean Speed by Group	Standard Deviation
Partial sentences	33	77.01	16.47
Sentences	66	70.18	11.11
Paragraphs	17	70.25	13.45
Short letters	32	74.67	12.81
Total	148		

Practices Employed to Teach Brief Forms and Phrases

Hypothesis No. 6

There is no significant difference between practices employed to teach brief forms and phrases in Book I or Book II of first-year Gregg Shorthand and estimated new-matter dictation speed achievement.

Brief Form Testing

Teachers' responses to various practices of testing for end-of-year brief form performance is given in table 57, page 81.

In Book I of first-year shorthand, a majority, 121, or 60.8 percent, stated that they used dictated tests to test their students for brief form performance. Fifty-nine, or 29.6 percent, stated that they used duplicated tests as their means for testing for terminal brief form performance. Of 199 teachers responding to this question, 187, or 94.0 percent, tested their students for end-of-year brief form performance. Only 12, or 6.0 percent, did not test for brief form mastery.

TABLE 57

PRACTICES OF TESTING FOR BRIEF FORM PERFORMANCE

Classification	Book I f	Book I %	Book II f	Book II %[a]
Dictated tests	121	60.8	116	62.0
Duplicated tests	59	29.6	38	20.3
Did not test	12	6.0	28	15.0
Timed reading of brief form chart	7	3.5	5	2.7
Total	199	99.9[b]	187	100.0
Missing Cases	16		28	

[a]f denotes frequency, and % indicates percentage.

[b]Rounding error prevents percentage column from totaling 100 percent.

In Book II of first-year shorthand, the most popular response was again for using dictated tests. Of 187 teachers responding, 116, or 62.0 percent, indicated that this was the way that they preferred to test their students for brief form performance. The second most popular response, duplicated tests, had a tally of 38, or 20.3 percent. Twenty-eight teachers, or 15.0 percent, did not test for brief form performance in Book II, or second semester shorthand. This was an increase of 16 teachers from Book I, or first-semester shorthand.

Mean difference by group as determined by one-way analysis of variance indicated that there was a significant difference in Book I for practices employed to test brief form performance (see table 58, page 82). The F-ratio was significant beyond the 0.01 level. Null

hypothesis 6 was rejected for Book I. In Book II, the F-ratio of 0.479 was not significant at the 0.05 level (see table 59). Null hypothesis 6 was retained for Book II.

TABLE 58

ONE-WAY ANALYSIS OF VARIANCE FOR PRACTICES OF TESTING FOR BRIEF FORM PERFORMANCE IN BOOK I

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Square	F Ratio
Between Groups	3	2,386.70	795.57	4.718[a]
Within Groups	134	22,596.84	168.63	
Total	137	24,983.54		

[a]Significant beyond 0.01 level.

TABLE 59

ONE-WAY ANALYSIS OF VARIANCE FOR PRACTICES OF TESTING FOR BRIEF FORM PERFORMANCE IN BOOK II

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Square	F Ratio
Between Groups	3	216.53	72.18	0.479[a]
Within Groups	128	19,295.30	150.74	
Total	131	19,511.83		

[a]Not significant at the 0.05 level.

Table 60, page 83, shows differences in group means for Book I as determined by one-way analysis of variance. Teachers reporting use of duplicated tests had an estimated new-matter dictation speed achievement of approximately 75 words a minute. This mean speed was more than 20 words a minute higher than the mean speed score for teachers who did

not test brief form performance. Mean speed score for dictated tests had the second highest score at 72.21 words a minute. Timed reading of the brief form chart was only about 6 words a minute higher than the score determined for those who did not test. Mean speed achievement for Book II is presented in table 61.

TABLE 60

COMPARISON OF MEAN SPEED ACHIEVEMENT WITH PRACTICES OF TESTING FOR BRIEF FORM PERFORMANCE IN BOOK I

Classification	Number of Teachers	Mean Speed by Group	Standard Deviation
Did not test	5	55.49	9.33
Timed reading of brief form chart	4	61.60	3.99
Dictated tests	85	72.21	10.86
Duplicated tests	44	75.72	16.91
Total	138		

TABLE 61

COMPARISON OF MEAN SPEED ACHIEVEMENT WITH PRACTICES OF TESTING FOR BRIEF FORM PERFORMANCE IN BOOK II

Classification	Number of Teachers	Mean Speed by Group	Standard Deviation
Did not test	17	69.60	12.76
Timed reading of brief form chart	3	69.74	14.22
Dictated tests	83	72.63	11.87
Duplicated tests	29	70.29	13.01
Total	132		

Brief Form Accuracy

Of 209 teachers responding as to their minimum end-of-year accuracy requirement for brief form performance, 194, or 92.8 percent, reported that they tested for brief form performance; and 144, or 68.9 percent of all respondents, indicated that they used a specific accuracy requirement (see table 62, page 85).

Of 144 teachers reporting a specific accuracy requirement on brief form performance, 115, or 79.9 percent, had an accuracy requirement of 90 percent or greater. Forty-eight, or 33.3 percent, had an accuracy requirement of 95 percent which was the most popular response. Thirty, or 20.8 percent, stated that they required 100 percent accuracy on terminal brief form performance. The mean for those teachers using a specific accuracy requirement was 92.104. A large number, 50, or 23.9 percent, said that they tested for brief form performance but stated that they did not set a specific end-of-year accuracy requirement.

Pearson Correlation Coefficients were computed to determine the relationship between the practice of setting a specific accuracy requirement for terminal brief form performance and teachers' estimate of new-matter dictation speed achievement. A negative correlation coefficient of 0.198 for not testing for brief form performance was significant beyond the 0.01 level. The correlation coefficient of 0.129 for setting a specific accuracy requirement for end-of-year brief form performance was not significant at the 0.05 level. A correlation coefficient of -0.148 for no specific accuracy requirement was significant beyond the 0.05 level.

TABLE 62

MINIMUM END-OF-YEAR ACCURACY REQUIREMENT FOR BRIEF FORM PERFORMANCE

Classification	Frequency	Percentage
60%	1	0.5
70%	8	3.8
75%	5	2.4
76%	1	0.5
80%	10	4.8
85%	3	1.4
88%	1	0.5
90%	15	7.2
93%	1	0.5
95%	48	23.0
96%	4	1.9
97%	6	2.9
98%	9	4.3
99%	2	1.0
100%	30	14.4
No specific requirement	50	23.9
Did not test	15	7.2
Total	209	100.2[a]
Missing Cases	6	---
Mean		92.104[b]
Median		95.063[b]
Mode		95.000[b]
Range		60 - 100

[a]Rounding error prevents percentage column from totaling 100 percent.

[b]Figure is based upon 144 respondents who indicated using a specific accuracy requirement.

The practice of setting a minimum end-of-year accuracy requirement for brief form performance was tested for differences in group means by using one-way analysis of variance. An F-ratio of 3.200 was significant beyond the 0.01 level (see table 63). Null hypothesis 6 was rejected for accuracy requirement for end-of-year brief form performance.

TABLE 63

ONE-WAY ANALYSIS OF VARIANCE FOR MINIMUM END-OF-YEAR ACCURACY REQUIREMENT FOR BRIEF FORM PERFORMANCE

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Square	F Ratio
Between Groups	5	2,655.58	531.12	3.200[a]
Within Groups	140	23,237.27	165.98	
Total	145	25,892.85		

[a]Significant beyond the 0.01 level.

A summary of mean speeds by classification as determined by one-way analysis of variance is shown in table 64, page 87. A 95 percent or higher accuracy requirement had an estimated mean speed score of approximately 10 words a minute higher than the mean score for an accuracy requirement of 94 percent or less.

Testing of Commonly Used Phrases

Teachers' responses to various practices of testing for end-of-year performance on commonly used phrases is given in table 65, page 87.

TABLE 64

COMPARISON OF MEAN SPEED ACHIEVEMENT WITH MINIMUM END-OF-YEAR ACCURACY REQUIREMENT FOR BRIEF FORM PERFORMANCE

Classification	Number of Teachers	Mean Speed by Group	Standard Deviation
89% or less	20	72.66	10.84
90 - 94%	11	67.69	11.89
95 - 99%	48	76.16	10.85
100%	23	76.77	19.12
No specific accuracy	37	69.24	11.92
Did not test	7	60.86	12.27
Total	146		

TABLE 65

PRACTICES OF TESTING FOR PERFORMANCE ON COMMONLY USED PHRASES

Classification	Book I f	Book I %	Book II f	Book II %[a]
Did not test	112	54.9	117	58.8
Dictated tests	46	22.5	52	26.1
Duplicated tests	40	19.6	25	12.6
Timed reading of phrase chart	6	2.9	5	2.5
Total	204	99.9[b]	199	100.0
Missing Cases	11		16	

[a]f denotes frequency, and % indicates percentage.

[b]Rounding error prevents percentage column from totaling 100 percent.

In Book I of first-year shorthand, a majority, 112, or 54.9 percent of 204 respondents, did not test for performance on commonly used phrases. Of the 92 respondents that tested for performance, 46, or 50.0 percent, used dictated tests; and 40, or 43.5 percent, used duplicated tests. Only 6, or 6.5 percent, used a timed reading of the phrase chart for testing performance on commonly used phrases.

In Book II of first-year shorthand, 117, or 58.8 percent of 199 respondents, did not test for performance on commonly used phrases. This was an increase of five respondents over what was reported in Book I. Of the 82 respondents that tested for performance, 52, or 63.4 percent, used dictated tests; and 25, or 30.5 percent, used duplicated tests. Only 5, or 6.1 percent, used a timed reading of the phrase chart for testing performance on commonly used phrases.

A summary of one-way analysis of variance shown as table 66 and table 67, page 89, indicates that there was no significance in group

TABLE 66

ONE-WAY ANALYSIS OF VARIANCE FOR PRACTICES OF TESTING FOR PERFORMANCE ON COMMONLY USED PHRASES IN BOOK I

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Square	F Ratio
Between Groups	3	304.77	101.59	0.567[a]
Within Groups	139	24,904.58	179.17	
Total	142	25,209.35		

[a]Not significant at the 0.05 level.

TABLE 67

ONE-WAY ANALYSIS OF VARIANCE FOR PRACTICES OF TESTING FOR PERFORMANCE ON COMMONLY USED PHRASES IN BOOK II

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Square	F Ratio
Between Groups	3	312.62	104.21	0.585[a]
Within Groups	136	24,206.69	177.99	
Total	139	24,519.31		

[a]Not significant at the 0.05 level.

means for practices employed to test for performance on commonly used phrases. Null hypothesis 6 was retained for practices employed to test for performance on commonly used phrases in Book I and Book II.

Differences in mean speed achievement by classification is presented in table 68 and table 69, page 90.

TABLE 68

COMPARISON OF MEAN SPEED ACHIEVEMENT WITH PRACTICES OF TESTING FOR PERFORMANCE ON COMMONLY USED PHRASES IN BOOK I

Classification	Number of Teachers	Mean Speed by Group	Standard Deviation
Did not test	79	71.37	13.73
Timed reading of phrase chart	2	75.68	5.55
Dictated tests	33	71.51	12.91
Duplicated tests	29	74.90	13.13
Total	143		

TABLE 69

COMPARISON OF MEAN SPEED ACHIEVEMENT WITH PRACTICES OF TESTING FOR PERFORMANCE ON COMMONLY USED PHRASES IN BOOK II

Classification	Number of Teachers	Mean Speed by Group	Standard Deviation
Did not test	86	71.71	14.08
Timed reading of phrase chart	2	78.86	1.04
Dictated tests	34	74.43	11.69
Duplicated tests	18	70.77	12.96
Total	140		

Accuracy on Commonly Used Phrases

Of 211 teachers responding as to their minimum end-of-year accuracy requirement for performance on commonly used phrases, 109, or 51.7 percent, reported that they did not test their students for mastery of commonly used phrases. Another 47 respondents, or 22.3 percent, stated that they tested for performance but did not indicate a specific accuracy requirement (see table 70, page 91).

Of 55 teachers reporting use of a specific accuracy requirement, 45, or 81.8 percent, indicated an accuracy requirement of 80 percent or higher. Three teachers required 100 percent accuracy for performance on commonly used phrases. The most popular response, 95 percent, was used by 16, or 29.1 percent of the teachers indicating use of a specific accuracy requirement. The mean for those teachers was 86.618.

TABLE 70

MINIMUM END-OF-YEAR ACCURACY REQUIREMENT FOR PERFORMANCE ON COMMONLY USED PHRASES

Classification	Frequency	Percentage
60%	2	0.9
70%	6	2.8
75%	2	0.9
80%	10	4.7
85%	3	1.4
90%	9	4.3
95%	16	7.6
97%	3	1.4
98%	1	0.5
100%	3	1.4
Did not test	109	51.7
No specific requirement	47	22.3
Total	211	99.9[a]
Missing Cases	4	---
Mean		86.618[b]
Median		90.000[b]
Mode		95.000[b]
Range		60 - 100

[a]Rounding error prevents percentage column from totaling 100 percent.

[b]Figure is based upon 55 respondents who indicated using a specific accuracy requirement.

Pearson Correlation Coefficients were computed to determine the relationship between the practice of setting a specific accuracy requirement for terminal performance on commonly used phrases with teachers'

estimate of new-matter dictation speed achievement. The correlation coefficient of 0.024 for setting a specific accuracy requirement was not significant at the 0.05 level. Correlation coefficients of -0.028 for no specific accuracy requirement and -0.106 for not testing were not significant at the 0.05 level.

An F-ratio of 0.775 as determined by one-way analysis of variance for minimum end-of-year accuracy requirement for performance on commonly used phrases was not significant at the 0.05 level (see table 71). Null hypothesis 6 was retained for minimum end-of-year accuracy requirement for performance on commonly used phrases.

TABLE 71

ONE-WAY ANALYSIS OF VARIANCE FOR MINIMUM END-OF-YEAR ACCURACY REQUIREMENT FOR PERFORMANCE ON COMMONLY USED PHRASES

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Square	F Ratio
Between Groups	5	691.60	138.32	0.775[a]
Within Groups	142	25,337.16	178.43	
Total	147	26,028.76		

[a]Not significant at the 0.05 level.

Table 72, page 93, shows mean speed achievement by classification for minimum end-of-year accuracy requirement on phrases as determined by one-way analysis of variance.

TABLE 72

COMPARISON OF MEAN SPEED ACHIEVEMENT WITH MINIMUM END-OF-YEAR ACCURACY REQUIREMENT FOR PERFORMANCE ON COMMONLY USED PHRASES

Classification	Number of Teachers	Mean Speed by Group	Standard Deviation
89% or less	16	75.79	10.87
90 - 94%	5	74.85	18.10
95 - 99%	17	74.74	12.43
100%	2	84.33	5.20
No specific accuracy	31	71.91	13.12
Did not test	77	71.27	13.85
Total	148		

Practices Employed to Encourage the Writing of Theoretically Correct Shorthand Outlines

Hypothesis No. 7

There is no significant relationship between practices employed to encourage the writing of theoretically correct shorthand outlines and estimated new-matter dictation speed achievement.

Responses as to teachers practices employed to encourage the writing of theoretically correct shorthand outlines are shown in table 73, page 94.

In Book I of first-year shorthand, 139, or 64.7 percent, of 215 teachers responding, said that they used a daily chalkboard review as a means of encouraging their students to write theoretically correct shorthand outlines. Short theory tests were used by 126, or 58.6 percent; daily spelling of outlines was used by 109, or 50.7 percent; and

TABLE 73

PRACTICES EMPLOYED TO ENCOURAGE THE WRITING OF THEORETICALLY CORRECT SHORTHAND OUTLINES AFTER THEORY WAS INITIALLY PRESENTED (N=215)

Classification	Book I f	Book I %	Book II f	Book II %[a]
Daily chalkboard review	139	64.7	64	29.8[b]
Periodic chalkboard review	43	20.0	91	42.3
Daily spelling of outlines	109	50.7	43	20.0
Short theory quizzes	126	58.6	91	42.3
Chapter theory tests	103	47.9	58	27.0
Long theory tests	19	8.8	29	13.5
Memorization of rules for outline construction	13	6.0	6	2.8
Checking of shorthand outlines in dictation notes	64	29.8	55	25.6

[a] f denotes frequency, and % indicates percentage.

[b] Rounded off to the nearest tenth of one percent.

chapter theory tests were used by 103, or 47.9 percent, of 215 teachers responding. Very few, 19, or 8.8 percent, indicated using long theory tests as a means of encouraging the writing of theoretically correct shorthand outlines. A large number of respondents, 43, or 20.0 percent, said that they used a periodic chalkboard review. Only 13, or 6.0 percent, said that they encouraged the memorization of rules for outline construction. Sixty-four, or 29.8 percent, however, said that they checked shorthand outlines in students' dictation notes.

In Book II, 75 of the teachers discontinued use of the daily chalkboard review. A large number, 64, or 29.8 percent, continued to use this practice as a means of encouraging their students to write theoretically correct shorthand outlines. Use of short theory quizzes decreased slightly from what was reported in Book I. Daily spelling of outlines decreased dramatically. This practice, however, was still used by 43, or 20.0 percent. Chapter theory tests were used by 58, or 27.0 percent; checking of outlines in students' dictation notes was used by 55, or 25.6 percent. Use of the long theory test increased over what was reported in Book I. Twenty-nine, or 13.5 percent, indicated that they used this practice for encouraging the writing of theoretically correct shorthand. Use of the periodic chalkboard review increased greatly over use in Book I. Ninety-one, or 42.3 percent, used this practice in Book II. Requiring the memorization of rules for outline construction decreased to six teachers, however.

SPSS subprogram REGRESSION was used to determine if there was a significant relationship between various practices employed to encourage the writing of theoretically correct shorthand outlines and estimated new-matter dictation speed achievement. With all variables entered, computed F-ratios of 1.77471 with 8 and 137 degrees of freedom for Book I and 1.43651 with 8 and 125 degrees of freedom for Book II were not significant at the 0.05 level. Null hypothesis 7 was retained for both Book I and Book II.

STEPWISE REGRESSION (forward) was run to compare the eight independent variables to estimated new-matter dictation speed achievement. Through this technique, the variable that explains the greatest amount

of variance will enter first, the variable that explains the greatest amount of variance in conjunction with the first will enter second, and so on until all variables meeting the statistical criteria are entered (see table 74, page 97).

In Book I, none of the correlation coefficients shown for individual variables (simple correlation) were significant at the 0.05 level. The variable, long theory tests, had an F-ratio too small to permit it to enter the stepwise regression. Total contribution of the other seven variables entered (multiple correlation squared) was found to be 0.09387. This 9 percent represents the variance in estimated new-matter dictation speed achievement accounted for by the combined effect of the seven variables entered. Daily chalkboard review, the first variable entered, accounted for approximately 31 percent of the total variance reported. Memorization of rules for outline construction in conjunction with daily chalkboard review accounted for more than 60 percent of the total. F-ratios at each step in the regression were not significant at the 0.05 level.

In Book II, none of the correlation coefficients for individual variables (simple correlation) were significant at the 0.05 level (see table 75, page 98). All variables were entered in the stepwise regression. Total contribution of the eight variables entered (multiple correlation squared) was found to be 0.08420. This 8 percent represents the variance in estimated new-matter dictation speed achievement accounted for by the combined effect of the eight variables entered. Memorization of rules for outline construction, the first variable entered, accounted for approximately 35 percent of the total variance

TABLE 74

STEPWISE REGRESSION FOR PRACTICES EMPLOYED TO ENCOURAGE THE WRITING OF THEORETICALLY CORRECT SHORTHAND OUTLINES IN BOOK I

Classification	Multiple Correlation	Correlation Square	Correlation Square Change	Simple Correlation
Daily chalkboard review	0.16944	0.02871	0.02871	0.16944[a]
Memorization of rules for outline construction	0.23613	0.05576	0.02705	-0.15898[a]
Short theory quizzes	0.26562	0.07055	0.01480	0.11884[a]
Daily spelling of outlines from book	0.28250	0.07981	0.00926	-0.07969[a]
Periodic chalkboard review	0.29443	0.08669	0.00688	-0.03595[a]
Chapter theory tests	0.30332	0.09200	0.00531	-0.03484[a]
Checking of shorthand outlines in students' dictation notes	0.30639	0.09387	0.00187	-0.01809[a]

[a]Not significant at the 0.05 level.

TABLE 75

STEPWISE REGRESSION FOR PRACTICES EMPLOYED TO ENCOURAGE THE WRITING OF THEORETICALLY CORRECT SHORTHAND OUTLINES IN BOOK II

Classification	Multiple Correlation	Correlation Square	Correlation Square Change	Simple Correlation
Memorization of rules for outline construction	0.17043	0.02905	0.02905	-0.17043[a]
Daily spelling of outlines from book	0.23151	0.05360	0.02455	-0.16763[a]
Long theory tests	0.25293	0.06398	0.01038	0.09013[a]
Daily chalkboard review	0.27249	0.07425	0.01027	0.06338[a]
Period chalkboard review	0.27827	0.07743	0.00318	0.01139[a]
Chapter theory tests	0.28465	0.08103	0.00360	-0.07553[a]
Short theory tests	0.28764	0.08274	0.00171	0.03654[a]
Checking of shorthand outlines in students' dictation notes	0.29017	0.08420	0.00146	0.02227[a]

[a]Not significant at the 0.05 level.

reported. Daily spelling of outlines in conjunction with memorization of rules for outline construction accounted for more than 60 percent of the total. F-ratios at each step in the regression were not significant at the 0.05 level.

Practices Employed in Testing New-Matter Dictation Speed Achievement

Hypothesis No. 8

There is no significant difference between practices employed to test new-matter dictation speed achievement and estimated new-matter dictation speed achievement.

Introduction of New-Matter Dictation

An analysis of teachers' responses as to the lesson number at which they introduced new-matter dictation is given in table 76.

TABLE 76

LESSON WHEN NEW-MATTER DICTATION WAS INTRODUCED

	Mean	Median	Mode	Range Low	Range High
Book I	40.188	47.000	50.000	1	70
Book II	10.874	1.489	1.000	1	60

In Book I, a majority, 53, or 55.2 percent of 96 respondents, indicated that they introduced new-matter dictation prior to Lesson 49. Twenty-six percent, or 25 teachers, said that they introduced new-matter dictation in either Lesson 49 or Lesson 50. Presentation of

theory is completed in Lesson 48. The mean for all respondents was 40.188 (see table 76).

In Book II, 44, or 50.6 percent of 87 respondents, stated that they introduced new-matter dictation in Lesson 1. The mean for all respondents was 10.874 (see table 76). Eight teachers reported that they did not introduce new-matter dictation in first-year shorthand.

Pearson Correlation Coefficients were computed to determine the relationship between lesson at which new-matter dictation was begun and estimated new-matter dictation speed achievement. The negative correlation coefficient of 0.2278 for lesson in Book I was significant at the 0.05 level. A correlation coefficient of 0.0095 for lesson in Book II was not significant at the 0.05 level.

Table 77 and table 78, page 101, show one-way analysis of variance for lesson number at which new-matter dictation was introduced. There was no significant difference. Null hypothesis 8 was retained for lesson number at which new-matter dictation was introduced in Book I and Book II.

TABLE 77

ONE-WAY ANALYSIS OF VARIANCE FOR LESSON WHEN NEW-MATTER DICTATION WAS INTRODUCED IN BOOK I

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Square	F Ratio
Between Groups	1	176.30	176.30	0.782[a]
Within Groups	66	14,881.45	225.48	
Total	67	15,057.75		

[a]Not significant at the 0.05 level.

TABLE 78

ONE-WAY ANALYSIS OF VARIANCE FOR LESSON WHEN NEW-MATTER DICTATION WAS INTRODUCED IN BOOK II

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Square	F Ratio
Between Groups	1	20.04	20.04	0.156[a]
Within Groups	65	8,333.62	128.21	
Total	66	8,353.66		

[a]Not significant at the 0.05 level.

Although there were no significant differences in group means, the group introducing new-matter dictation prior to Lesson 49 in Book I achieved a mean speed score of approximately 76 words a minute. That was approximately six words a minute higher than group mean speed achievement in Book II (see table 79 and table 80, page 102).

TABLE 79

COMPARISON OF MEAN SPEED ACHIEVEMENT WITH LESSON WHEN NEW-MATTER DICTATION WAS INTRODUCED IN BOOK I

Classification	Number of Teachers	Mean Speed by Group	Standard Deviation
Lesson 1 - 48	39	75.75	16.69
Lesson 49 or more	29	72.50	12.39
Total	68		

TABLE 80

COMPARISON OF MEAN SPEED ACHIEVEMENT WITH LESSON WHEN NEW-MATTER DICTATION WAS INTRODUCED IN BOOK II

Classification	Number of Teachers	Mean Speed by Group	Standard Deviation
Lesson 1 - 10	48	71.43	11.91
Lesson 11 or more	19	70.21	9.61
Total	67		

Length of Tests

A majority of teachers, 109, or 55.3 percent, said that they did not test students' ability to write new-matter dictation in Book I (see table 81, page 103). Of the 88 teachers that did test, 84, or 95.5 percent, indicated that they used a test of three minutes or less. Thirty-six, or 40.9 percent of the 88 teachers that tested ability to write new-matter dictation, used a test of three minutes in length. Thirty-one, or 35.2 percent, used a one-minute test. Just 17, or 19.3 percent, reported using a two-minute test. Only two teachers reported using a five-minute test, and two teachers reported using a test of six minutes or more in length. The mean length of test for the 88 teachers that tested students' ability to write new-matter dictation in Book I was 2.42.

In Book II, all but 9, or 4.5 percent of the teachers, reported that they tested their students' ability to write new-matter dictation. A large majority, 118, or 59.6 percent, said that they used a three-minute test. Thirty-six, or 18.2 percent, used a two-minute test.

TABLE 81

LENGTH OF TESTS FOR EVALUATING STUDENTS' ABILITY TO WRITE NEW-MATTER DICTATION

Classification	Book I f	Book I %	Book II f	Book II %[a]
1 minute	31	15.7	13	6.6
2 minutes	17	8.6	36	18.2
3 minutes	36	18.3	118	59.6
4 minutes	0	---	1	0.5
5 minutes	2	1.0	14	7.1
6 minutes or more	2	1.0	7	3.5
Did not test	109	55.3	9	4.5
Total	197	99.9[b]	198	100.0
Missing Cases	18		17	
Mean	2.420		3.561	
Median	2.265		2.886	
Mode	3.000		3.000	
Range	1 - 20		1 - 60	

[a] f denotes frequency, and % indicates percentage.

[b] Rounding error prevents percentage column from totaling 100 percent.

Very few, 13, or 6.6 percent, used a one-minute test. Of the 22 teachers using a test of more than three minutes, 14, or 63.6 percent, stated that they used a five-minute test. The mean length of test for the 189

teachers that tested students' ability to write new-matter dictation in Book II was 3.561.

Pearson Correlation Coefficients were computed to determine the relationship between the length of new-matter tests and teachers' estimate of new-matter dictation speed achievement. The correlation coefficient of 0.121 for length of tests in Book I was not significant at the 0.05 level. The negative correlation coefficient of 0.136 for not testing in Book I was significant beyond the 0.05 level. In Book II, the correlation coefficients of -0.046 for length of test and 0.092 for not testing were not significant at the 0.05 level.

A summary shown as table 82 and table 83, page 105, indicates that there was no significant difference in group means for length of test to determine students' ability to write new-matter dictation and teachers' estimate of new-matter dictation speed achievement. Null hypothesis 8 for length of test was retained for both Book I and Book II.

TABLE 82

ONE-WAY ANALYSIS OF VARIANCE FOR LENGTH OF TESTS FOR EVALUATING STUDENTS' ABILITY TO WRITE NEW-MATTER DICTATION IN BOOK I

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Square	F Ratio
Between Groups	4	1,183.50	295.87	1.648[a]
Within Groups	133	23,873.11	179.50	
Total	137	25,056.61		

[a]Not significant at the 0.05 level.

TABLE 83

ONE-WAY ANALYSIS OF VARIANCE FOR LENGTH OF TESTS FOR EVALUATING STUDENTS' ABILITY TO WRITE NEW-MATTER DICTATION IN BOOK II

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Square	F Ratio
Between Groups	5	1,230.86	246.17	1.421[a]
Within Groups	134	23,210.39	173.21	
Total	139	24,441.25		

[a]Not significant at the 0.05 level.

Mean speeds by classification for both Book I and Book II are presented in table 84 and table 85, page 106.

TABLE 84

COMPARISON OF MEAN SPEED ACHIEVEMENT WITH LENGTH OF TESTS FOR EVALUATING STUDENTS' ABILITY TO WRITE NEW-MATTER DICTATION IN BOOK I

Classification	Number of Teachers	Mean Speed by Group	Standard Deviation
1 minute	21	73.46	20.34
2 minutes	10	74.08	12.06
3 minutes	29	75.01	12.60
5 minutes	1	100.00	---
6 minutes or more	0	0.00	---
Did not test	77	70.88	11.38
Total	138		

TABLE 85

COMPARISON OF MEAN SPEED ACHIEVEMENT WITH LENGTH OF TESTS FOR EVALUATING STUDENTS' ABILITY TO WRITE NEW-MATTER DICTATION IN BOOK II

Classification	Number of Teachers	Mean Speed by Group	Standard Deviation
1 minute	5	67.39	11.20
2 minutes	25	70.33	12.77
3 minutes	93	74.54	13.17
4 - 5 minutes	11	66.96	15.35
6 minutes or more	4	68.62	12.28
Did not test	2	83.00	4.24
Total	140		

Accuracy Requirements on Tests

A majority of the teachers, 110, or 57.9 percent, said that they did not test students' ability to write new-matter dictation in Book I (see table 86, page 107). Of the 80 teachers that responded to testing for new-matter dictation speed achievement, 60, or 75.0 percent, reported using an accuracy requirement of 95 percent. An accuracy requirement of 90 percent or more was used by 75, or 93.8 percent of the 80 teachers. Only one teacher reported requiring 100 percent on students' new-matter test transcripts. The mean accuracy requirement for the 80 teachers who tested was 93.275.

In Book II, all but 10, or 5.3 percent, reported testing for students' ability to write new-matter dictation. Of the 180 teachers

TABLE 86

ACCURACY REQUIREMENT ON TEST TRANSCRIPTS FOR EVALUATING ABILITY TO WRITE NEW-MATTER DICTATION

Classification	Book I f	Book I %	Book II f	Book II %[a]
60%	1	0.5	1	0.5
70%	2	1.1	4	2.1
75%	0	---	1	0.5
80%	2	1.1	4	2.1
85%	0	---	2	1.1
90%	7	3.7	9	4.7
94%	2	1.1	2	1.1
95%	60	31.6	146	76.8
96%	2	1.1	2	1.1
97%	1	0.5	4	2.1
98%	2	1.1	4	2.1
100%	1	0.5	1	0.5
Did not test	110	57.9	10	5.3
Total	190	100.2[b]	190	100.0
Missing Cases	25		25	
Mean	93.275		93.578	
Median	94.933		94.959	
Mode	95.000		95.000	
Range	60 - 100		60 - 100	

[a] f denotes frequency, and % indicates percentage.

[b] Rounding error prevents percentage column from totaling 100 percent.

who tested, 146, or 81.1 percent, stated that they required students' new-matter dictation transcripts to be 95 percent accurate. Only one teacher required a 100 percent accuracy requirement. The mean accuracy requirement for the 180 teachers who tested was 93.578.

Pearson Correlation Coefficients were computed to determine the relationship between accuracy requirement on new-matter dictation tests and teachers' estimate of new-matter dictation speed achievement. Correlation coefficients of -0.016 for accuracy requirement on tests and -0.132 for not testing in Book I were not significant at the 0.05 level. In Book II, the correlation coefficients of 0.038 for accuracy requirement and 0.048 for not testing were not significant at the 0.05 level.

A summary of one-way analysis of variance is shown in table 87 and table 88, page 109. There was no significant difference in group mean speed scores for various accuracy requirements on new-matter dictation tests and estimated new-matter dictation speed achievement. Null hypothesis 8 was retained for accuracy requirement on new-matter dictation tests for both Book I and Book II.

TABLE 87

ONE-WAY ANALYSIS OF VARIANCE FOR ACCURACY REQUIREMENT ON TEST TRANSCRIPTS FOR EVALUATING ABILITY TO WRITE NEW-MATTER DICTATION IN BOOK I

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Square	F Ratio
Between Groups	4	1,414.24	353.56	1.994[a]
Within Groups	130	23,055.29	177.35	
Total	134	24,469.53		

[a]Not significant at the 0.05 level.

TABLE 88

ONE-WAY ANALYSIS OF VARIANCE FOR ACCURACY REQUIREMENT ON TEST TRANSCRIPTS FOR EVALUATING ABILITY TO WRITE NEW-MATTER DICTATION IN BOOK II

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Square	F Ratio
Between Groups	4	1,544.61	386.15	2.241[a]
Within Groups	134	23,087.23	172.29	
Total	138	24,631.84		

[a]Not significant at the 0.05 level.

Table 89 and table 90, page 110, summarize the mean speed achievement by group for various accuracy requirements on new-matter dictation test transcripts.

TABLE 89

COMPARISON OF MEAN SPEED ACHIEVEMENT WITH ACCURACY REQUIREMENT ON TEST TRANSCRIPTS FOR EVALUATING ABILITY TO WRITE NEW-MATTER DICTATION IN BOOK I

Classification	Number of Teachers	Mean Speed by Group	Standard Deviation
89% or less	3	76.97	16.18
90 - 94%	6	80.07	31.31
95%	48	74.93	12.94
96 - 100%	2	89.80	14.42
Did not test	76	70.92	11.28
Total	135		

TABLE 90

COMPARISON OF MEAN SPEED ACHIEVEMENT WITH ACCURACY REQUIREMENT ON TEST TRANSCRIPTS FOR EVALUATING ABILITY TO WRITE NEW-MATTER DICTATION IN BOOK II

Classification	Number of Teachers	Mean Speed by Group	Standard Deviation
89% or less	7	72.15	14.49
90 - 94%	7	63.25	14.55
95%	119	73.36	13.12
96 - 100%	4	87.29	8.95
Did not test	2	78.10	2.69
Total	139		

Frequency of Tests

An analysis of teachers' responses as to the number of tests they gave for evaluating students' ability to write new-matter dictation is shown in table 91.

TABLE 91

NUMBER OF TESTS FOR EVALUATING ABILITY TO WRITE NEW-MATTER DICTATION

Classification	Book I f	Book I %	Book II f	Book II %[a]
Did not test	114	57.9	10	5.0
Once a week	39	19.8	83	41.5
Twice a week	21	10.7	48	24.0
Once every two weeks	19	9.6	36	18.0
Three times a week	4	2.0	23	11.5
Total	197	100.0	200	100.0
Missing Cases	18		15	

[a] f denotes frequency, and % indicates percentage.

In Book I, a majority, 114, or 57.9 percent, did not give new-matter dictation tests. Of the 83 teachers who did give tests, 39, or 47.0 percent, said that they gave tests once a week. Twenty-one, or 25.3 percent, tested twice a week; and 19, or 22.9 percent, tested once every two weeks. Only 4, or 4.8 percent, tested three times a week.

In Book II, only 10, or 5.0 percent, did not give new-matter dictation tests to evaluate students' ability to write new-matter dictation. Of the 190 teachers who did give tests, 83, or 43.7 percent, stated that they gave the tests once a week. Forty-eight, or 25.3 percent, indicated giving tests twice a week; and 36, or 18.9 percent, stated that they tested once every two weeks. Few, 23, or 12.1 percent, tested three times a week.

A summary showing one-way analysis of variance for frequency of new-matter dictation tests and new-matter dictation speed achievement is shown in table 92 and table 93, page 112. F-ratios of 4.745 for Book I and 4.609 for Book II were significant beyond the 0.01 level. Null hypothesis 8 was rejected for frequency of tests in both Book I and Book II.

TABLE 92

ONE-WAY ANALYSIS OF VARIANCE FOR NUMBER OF TESTS FOR EVALUATING ABILITY TO WRITE NEW-MATTER DICTATION IN BOOK I

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Square	F Ratio
Between Groups	4	3,124.78	781.19	4.745[a]
Within Groups	133	21,896.81	164.64	
Total	137	25,021.59		

[a]Significant beyond the 0.01 level.

TABLE 93

ONE-WAY ANALYSIS OF VARIANCE FOR NUMBER OF TESTS FOR EVALUATING ABILITY TO WRITE NEW-MATTER DICTATION IN BOOK II

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Square	F Ratio
Between Groups	4	2,903.25	725.81	4.609[a]
Within Groups	137	21,576.53	157.49	
Total	141	24,479.77		

[a]Significant beyond the 0.01 level.

Mean speeds by classification for frequency of new-matter dictation tests is presented in table 94 and table 95, page 113. As frequency of new-matter dictation tests per week increased, new-matter dictation speed achievement also increased. The only exception to this trend was giving tests twice a week in Book I.

TABLE 94

COMPARISON OF MEAN SPEED ACHIEVEMENT WITH NUMBER OF TESTS FOR EVALUATING ABILITY TO WRITE NEW-MATTER DICTATION IN BOOK I

Classification	Number of Teachers	Mean Speed by Group	Standard Deviation
Did not test	79	70.72	11.22
Once every two weeks	13	69.87	9.19
Once a week	28	76.13	13.16
Twice a week	15	74.78	16.96
Three times a week	3	100.49	34.27
Total	138		

TABLE 95

COMPARISON OF MEAN SPEED ACHIEVEMENT WITH NUMBER OF TESTS FOR EVALUATING ABILITY TO WRITE NEW-MATTER DICTATION IN BOOK II

Classification	Number of Teachers	Mean Speed by Group	Standard Deviation
Did not test	2	78.10	2.69
Once every two weeks	29	68.34	8.83
Once a week	59	71.83	12.57
Twice a week	33	72.74	11.87
Three times a week	19	83.61	17.81
Total	142		

Estimated Student Speed Achievement

Teachers reported an estimated speed achievement score for 3,999 students. This score represented the teachers' estimate of students' single, highest dictation speed achievement on unpreviewed new-matter dictation for three minutes with a 95 percent accuracy standard (see table 96, page 114).

A majority of the students, 2,445, or 61.1 percent, achieved between the speeds of 60 to 80 words per minute. Teachers estimated that 755, or 18.9 percent of the students, achieved a new-matter dictation recording skill of 90 words per minute or more. Only 2.2 percent, or 82 students, achieved 120 words per minute or more. Teachers reported that 157, or 3.9 percent, did not pass a speed take of at least 40 words per minute. Mean speed achievement for the 3,842 students who passed at least one speed take at 40 words per minute or higher was 71.69.

TABLE 96

ESTIMATED STUDENT SPEED ACHIEVEMENT ON UNPREVIEWED NEW-MATTER DICTATION FOR THREE MINUTES REQUIRING A 95 PERCENT ACCURACY STANDARD

Classification	Frequency	Percentage
140 WPM	26	0.7
130 WPM	10	0.3
120 WPM	46	1.2
110 WPM	64	1.6
100 WPM	273	6.8
90 WPM	336	8.4
80 WPM	853	21.3
70 WPM	643	16.1
60 WPM	949	23.7
50 WPM	453	11.3
40 WPM	189	4.7
Did not pass a speed take	157	3.9
Total	3,999	100.0

Mean	71.691827[a]
Median	65.513[a]
Mode	60.000[a]
Range	40 - 140

[a]Figure is for 3,842 students who passed speed takes at 40 words per minute or more.

Practices Employed to Teach Typewriter Transcription

Hypothesis No. 9

There is no significant difference between practices employed to teach typewriter transcription in Book I or Book II of first-year Gregg Shorthand and estimated new-matter dictation speed achievement.

Introduction of Typewriter Transcription

Teachers were asked to indicate the lesson number at which they introduced typewriter transcription in first-year shorthand. In Book I, responses as to lesson number at which typewriter transcription was introduced were so varied that reporting frequency of response in table format was not attempted. Of 157 teachers responding, 99, or 63.0 percent, said that they introduced typewriter transcription in Book I. Of the 58 teachers that delayed introduction until Book II, a majority, 37, or 63.8 percent, introduced typewriter transcription prior to Lesson 11. Measures of central tendency are presented in table 97.

TABLE 97

LESSON WHEN TRANSCRIBING OF SHORTHAND NOTES ON THE TYPEWRITER WAS INTRODUCED

	Mean	Median	Mode	Range Low	Range High
Book I	33.788	35.375	60.000	3	65
Book II	14.517	6.500	1.000	1	60

Pearson Correlation Coefficients were computed to determine the relationship between lesson number at which typewriter transcription was begun and estimated new-matter dictation speed achievement. Negative correlation coefficients of 0.174 for Book I and 0.140 for Book II were not significant at the 0.05 level. The negative correlation coefficient of 0.384 for not requiring typewriter transcription in first-year shorthand was significant beyond the 0.01 level.

One-way analysis of variance, as summarized in tables 98 and 99, indicates that there was no significant difference in group means for

TABLE 98

ONE-WAY ANALYSIS OF VARIANCE FOR LESSON WHEN TRANSCRIBING OF SHORTHAND NOTES ON THE TYPEWRITER WAS INTRODUCED IN BOOK I

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Square	F Ratio
Between Groups	2	506.05	253.03	1.314[a]
Within Groups	66	12,705.37	192.50	
Total	68	13,211.42		

[a]Not significant at the 0.05 level.

TABLE 99

ONE-WAY ANALYSIS OF VARIANCE FOR LESSON WHEN TRANSCRIBING OF SHORTHAND NOTES ON THE TYPEWRITER WAS INTRODUCED IN BOOK II

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Square	F Ratio
Between Groups	1	386.62	386.62	2.962[a]
Within Groups	41	5,351.07	130.51	
Total	42	5,737.68		

[a]Not significant at the 0.05 level.

lesson number at which typewriter transcription was begun and estimated new-matter dictation speed achievement. Null hypothesis 9 was retained for both Book I and Book II.

Mean speed achievement by classification for lesson number at which typewriter transcription was begun is presented in tables 100 and 101.

TABLE 100

COMPARISON OF MEAN SPEED ACHIEVEMENT WITH LESSON WHEN TRANSCRIBING OF SHORTHAND NOTES ON THE TYPEWRITER WAS INTRODUCED IN BOOK I

Classification	Number of Teachers	Mean Speed by Group	Standard Deviation
Lesson 1 - 24	23	79.05	17.19
Lesson 25 - 48	22	72.48	11.72
Lesson 49 or more	24	74.68	12.01
Total	69		

TABLE 101

COMPARISON OF MEAN SPEED ACHIEVEMENT WITH LESSON WHEN TRANSCRIBING OF SHORTHAND NOTES ON THE TYPEWRITER WAS INTRODUCED IN BOOK II

Classification	Number of Teachers	Mean Speed by Group	Standard Deviation
Lesson 1 - 10	28	76.60	12.76
Lesson 11 or more	15	70.31	8.26
Total	43		

Time Devoted to Typewriter Transcription

A majority, 94, or 50.3 percent of 187 teachers responding, said that they did not require typewriter transcription in Book I, or first-semester shorthand. Of the 93 teachers who did require typewriter transcription, 76, or 81.7 percent, devoted less than an hour per week to this activity. Only 17, or 18.3 percent, indicated that they devoted 61 minutes or more per week to typewriter transcription. The mean score for the 93 teachers responding as to amount of time devoted to typewriter transcription was 52.86 (see table 102, page 119).

In Book II, 38, or 19.0 percent of 200 teachers responding, did not require typewriter transcription. An hour or less per week was devoted to this activity by 105, or 52.5 percent of the teachers. Time devoted to typewriter transcription increased from that in Book I; as 57 teachers, or 28.5 percent of the 200 respondents indicated that they devoted 61 minutes or more per week to this activity. A mean of 64.63 minutes per week was determined for those 162 teachers responding as to amount of time devoted to typewriter transcription in Book II (see table 102, page 119).

Pearson Correlation Coefficients were computed to determine the relationship between amount of time devoted to typewriter transcription in first-year shorthand and teachers' estimate of new-matter dictation speed achievement. Correlation coefficients of 0.340 in Book I and 0.290 in Book II were both significant beyond the 0.01 level. Negative correlation coefficients of 0.295 in Book I and 0.367 in Book II for not requiring typewriter transcription were both significant beyond the 0.01 level.

TABLE 102

AMOUNT OF CLASS TIME PER WEEK THAT WAS DEVOTED TO TYPEWRITER TRANSCRIPTION

Classification	Book I f	Book I %	Book II f	Book II %[a]
30 minutes or less	34	18.2	41	20.5
31-60 minutes	42	22.5	64	32.0
61-90 minutes	6	3.2	21	10.5
91 minutes or more	11	5.9	36	18.0
Did not require	94	50.3	38	19.0
Total	187	100.1[b]	200	100.0
Missing Cases	28		15	
Mean	52.860		64.630	
Median	49.375		59.643	
Mode	60.000		60.000	
Range	3 - 180		3 - 180	

[a]f denotes frequency, and % indicates percentage.

[b]Rounding error prevents percentage column from totaling 100 percent.

One-way analysis of variance showed that there was a significant difference in amount of time devoted to typewriter transcription (see tables 103 and 104, page 120). F-ratios of 5.949 for Book I and 8.324 for Book II were both significant beyond the 0.01 level. Null hypothesis 9 was rejected for amount of class time devoted to typewriter transcription in both Book I and Book II of first-year shorthand.

TABLE 103

ONE-WAY ANALYSIS OF VARIANCE FOR AMOUNT OF CLASS TIME PER WEEK THAT WAS DEVOTED TO TYPEWRITER TRANSCRIPTION IN BOOK I

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Square	F Ratio
Between Groups	4	3,650.48	912.62	5.949[a]
Within Groups	129	19,789.79	153.41	
Total	133	23,440.27		

[a]Significant beyond the 0.01 level.

TABLE 104

ONE-WAY ANALYSIS OF VARIANCE FOR AMOUNT OF CLASS TIME PER WEEK THAT WAS DEVOTED TO TYPEWRITER TRANSCRIPTION IN BOOK II

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Square	F Ratio
Between Groups	4	4,788.40	1,197.10	8.324[a]
Within Groups	137	19,703.24	143.82	
Total	141	24,491.64		

[a]Significant beyond the 0.01 level.

Mean speed by classification for amount of class time devoted to typewriter transcription is presented in tables 105 and 106, page 121. Mean speed achievement was considerably higher for those teachers who devoted 61 minutes or more of class time per week to typewriter transcription. Differences in group means were greater in Book I than they were in Book II.

TABLE 105

COMPARISON OF MEAN SPEED ACHIEVEMENT WITH AMOUNT OF CLASS TIME PER WEEK THAT WAS DEVOTED TO TYPEWRITER TRANSCRIPTION IN BOOK I

Classification	Number of Teachers	Mean Speed by Group	Standard Deviation
30 minutes or less	25	74.14	8.24
31 - 60 minutes	23	73.79	12.74
61 - 90 minutes	4	80.86	19.42
91 minutes or more	9	88.08	21.51
Did not require	73	68.63	11.64
Total	134		

TABLE 106

COMPARISON OF MEAN SPEED ACHIEVEMENT WITH AMOUNT OF CLASS TIME PER WEEK THAT WAS DEVOTED TO TYPEWRITER TRANSCRIPTION IN BOOK II

Classification	Number of Teachers	Mean Speed by Group	Standard Deviation
30 minutes or less	28	73.89	10.46
31 - 60 minutes	47	73.46	11.57
61 - 90 minutes	13	75.35	10.15
91 minutes or more	25	81.09	17.17
Did not require	29	62.74	9.01
Total	142		

Practices Employed in Using Shorthand Laboratories

Hypothesis No. 10

There is no significant difference between practices employed in using shorthand laboratories in first-year Gregg Shorthand and estimated new-matter dictation speed achievement.

Utilization of Shorthand Laboratories

Teachers were asked to indicate how they utilized shorthand laboratories for student practice. An analysis of their responses is presented in table 107.

TABLE 107

USE OF SHORTHAND LABORATORIES

Classification	Frequency	Percentage
Not available	91	42.7
In-class practice only	60	28.2
In- and out-of-class practice	55	25.8
Available but not used	5	2.3
Out-of-class practice only	2	0.9
Total	213	99.9[a]
Missing Cases	2	---

[a]Rounding error prevents percentage column from totaling 100 percent.

A large number of the 213 respondents, 91, or 42.7 percent, indicated that they did not have a shorthand laboratory available for student practice. A majority, 115, or 54.0 percent, stated that they used the laboratory for some in-class practice. Very few, 5, or 2.3 percent, had a shorthand laboratory available but did not use it. Only 2, or 0.9 percent, utilized the laboratory for out-of-class practice only.

One-way analysis of variance indicated that there were no significant differences in group means for various ways of utilizing a shorthand laboratory for student practice (see table 108). Null hypothesis 10 was retained.

TABLE 108

ONE-WAY ANALYSIS OF VARIANCE FOR USE OF SHORTHAND LABORATORIES

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Square	F Ratio
Between Groups	4	641.98	160.50	0.910[a]
Within Groups	144	25,407.94	176.44	
Total	148	26,049.92		

[a]Not significant at the 0.05 level.

Mean speed by classification for use of shorthand laboratories is shown in table 109, page 124.

Time Devoted to Laboratory Practice

A large number, 85, or 49.4 percent of the 172 teachers responding, indicated that they did not have laboratory facilities available in Book I of first-year shorthand (see table 110, page 124). Another

TABLE 109

COMPARISON OF MEAN SPEED ACHIEVEMENT WITH USE OF SHORTHAND LABORATORIES

Classification	Number of Teachers	Mean Speed by Group	Standard Deviation
Not available	62	71.25	12.45
Available but not used	5	74.55	6.95
In-class practice only	44	71.53	13.00
Out-of-class practice only	1	82.00	---
In- and out-of-class practice	37	75.77	15.36
Total	149		

TABLE 110

AMOUNT OF TIME PER WEEK STUDENTS USED SHORTHAND LABORATORIES

Classification	Book I f	Book I %	Book II f	Book II %[a]
30 minutes or less	8	4.7	20	10.4
31-60 minutes	19	11.0	44	22.9
61-90 minutes	6	3.5	6	3.1
91 minutes or more	7	4.1	18	9.4
Did not require	47	27.3	25	13.0
Facilities not available	85	49.4	79	41.1
Total	172	100.0	192	99.9[b]
Missing Cases	43		23	
Mean	65.000		63.409	
Median	58.125		54.167	
Mode	60.000		60.000	
Range	10 - 120		5 - 120	

[a]f denotes frequency, and % indicates percentage.

[b]Rounding error prevents percentage column from totaling 100 percent.

47, or 27.3 percent, stated that they did not require their students to use the laboratory. Only 40, or 23.3 percent, reported laboratory use by their students.

In Book II, a majority, 104, or 54.1 percent, either did not require laboratory use or did not have one available. Use of the shorthand laboratory did increase over what was reported for Book I, however. Sixty-four, or 33.3 percent of those reporting use, stated that students used the laboratory 60 minutes per week or less. Only 24, or 12.5 percent, indicated use for 61 minutes or more per week.

Pearson Correlation Coefficients were computed to determine the relationship between amount of time devoted to laboratory practice and estimated new-matter dictation speed achievement. Correlation coefficients of 0.164 for Book I and 0.050 for Book II for amount of time devoted to laboratory practice were not significant at the 0.05 level. Correlation coefficients of 0.026 and 0.041 for not requiring laboratory use in Book I and Book II of first-year shorthand were not significant at the 0.05 level. No laboratory facilities available had negative correlation coefficients of 0.128 and 0.097 which were not significant at the 0.05 level.

One-way analysis of variance, shown in summary form in tables 111 and 112, page 126, indicates that there were no significant differences in group means for amount of time devoted to laboratory practice in first-year shorthand. F-ratios of 1.582 for Book I and 0.383 for Book II were not significant at the 0.05 level of confidence. Null hypothesis 10 was retained for amount of time devoted to laboratory practice in Book I and Book II.

TABLE 111

ONE-WAY ANALYSIS OF VARIANCE FOR AMOUNT OF TIME PER WEEK STUDENTS USED SHORTHAND LABORATORIES IN BOOK I

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Square	F Ratio
Between Groups	5	1,218.47	243.69	1.303[a]
Within Groups	119	22,263.15	187.08	
Total	124	23,481.62		

[a]Not significant at the 0.05 level.

TABLE 112

ONE-WAY ANALYSIS OF VARIANCE FOR AMOUNT OF TIME PER WEEK STUDENTS USED SHORTHAND LABORATORIES IN BOOK II

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Square	F Ratio
Between Groups	5	353.51	70.70	0.387[a]
Within Groups	131	23,921.46	182.61	
Total	136	24,274.97		

[a]Not significant at the 0.05 level.

Mean speeds by classification as determined by one-way analysis of variance is presented in tables 113 and 114, page 127.

Time Spent on Various Class Activities

Hypothesis No. 11

There is no significant relationship between time spent on various class activities in Book I or Book II of first-year Gregg Shorthand and estimated new-matter dictation speed achievement.

TABLE 113

COMPARISON OF MEAN SPEED ACHIEVEMENT WITH AMOUNT OF TIME PER WEEK STUDENTS USED SHORTHAND LABORATORIES IN BOOK I

Classification	Number of Teachers	Mean Speed by Group	Standard Deviation
30 minutes or less	6	78.10	13.79
31 - 60 minutes	16	73.72	12.31
61 - 90 minutes	3	73.18	1.02
91 minutes or more	5	84.88	17.12
Did not require	35	73.26	15.83
Laboratory not available	60	70.56	12.58
Total	125		

TABLE 114

COMPARISON OF MEAN SPEED ACHIEVEMENT WITH AMOUNT OF TIME PER WEEK STUDENTS USED SHORTHAND LABORATORIES IN BOOK II

Classification	Number of Teachers	Mean Speed by Group	Standard Deviation
30 minutes or less	15	73.69	8.70
31 - 60 minutes	30	73.38	14.22
61 - 90 minutes	4	78.10	8.30
91 minutes or more	12	74.19	12.63
Did not require	20	74.00	18.50
Laboratory not available	56	71.07	12.45
Total	137		

Responses of teachers as to percentage of class time devoted to various class activities varied greatly. Presentation of frequency of response in table format was not attempted. Measures of central tendency are presented for percentage of class time devoted to various class activities in Book I and Book II of first-year shorthand. Tables 115 through 126, pages 129-132, show change in emphasis from Book I to Book II for each class activity. Class activity, testing, was coded through the "other" response option. If the researcher had entered this variable, testing may have added to the significance level of hypothesis 11.

SPSS subprogram REGRESSION was used to determine if there was a significant relationship between time spent on various class activities and estimated new-matter dictation speed achievement. With all variables entered, computed F-ratios of 1.21940 with 11 and 116 degrees of freedom for Book I and 2.21668 with 11 and 114 degrees of freedom for Book II were not significant at the 0.05 level of confidence. Null hypothesis 11 was retained for both Book I and Book II.

STEPWISE REGRESSION (forward) was run to compare the twelve independent variables with estimated new-matter dictation speed achievement. Through this technique, the variable that explains the greatest amount of variance will enter first, the variable that explains the greatest amount of variance in conjunction with the first will enter second, and so on until all variables meeting the statistical criteria are entered (see table 127, page 133).

In Book I, none of the correlation coefficients shown for individual variables (simple correlation) were significant at the

TABLE 115

PERCENTAGE OF CLASS TIME DEVOTED TO READING SHORTHAND HOMEWORK

	Mean	Median	Mode	Range Low	Range High
Book I	20.550	19.703	10.000	1	80
Book II	10.133	9.611	5.000	1	50

TABLE 116

PERCENTAGE OF CLASS TIME DEVOTED TO THEORY PRESENTATION AND REVIEW

	Mean	Median	Mode	Range Low	Range High
Book I	23.296	20.042	10.000	2	60
Book II	7.810	5.275	5.000	1	30

TABLE 117

PERCENTAGE OF CLASS TIME DEVOTED TO BRIEF-FORM PRESENTATION AND REVIEW

	Mean	Median	Mode	Range Low	Range High
Book I	10.611	9.957	10.000	1	50
Book II	5.660	5.000	5.000	1	20

TABLE 118

PERCENTAGE OF CLASS TIME DEVOTED TO IN-CLASS HOMEWORK PREPARATION

	Mean	Median	Mode	Range Low	Range High
Book I	7.062	5.111	5.000	1	25
Book II	7.116	5.108	5.000	1	25

TABLE 119

PERCENTAGE OF CLASS TIME DEVOTED TO PRACTICE-MATTER DICTATION

	Mean	Median	Mode	Range Low	Range High
Book I	16.211	14.625	10.000	1	60
Book II	21.480	19.974	20.000	2	50

TABLE 120

PERCENTAGE OF CLASS TIME DEVOTED TO TYPEWRITER TRANSCRIPTION

	Mean	Median	Mode	Range Low	Range High
Book I	8.157	5.414	5.000	1	40
Book II	17.106	15.154	10.000	1	55

TABLE 121

PERCENTAGE OF CLASS TIME DEVOTED TO ENGLISH REVIEW (PUNCTUATION, SPELLING, ETC.)

	Mean	Median	Mode	Range Low	Range High
Book I	6.979	5.177	5.000	1	50
Book II	8.272	6.000	5.000	1	25

TABLE 122

PERCENTAGE OF CLASS TIME DEVOTED TO SHORTHAND PENMANSHIP DRILLS

	Mean	Median	Mode	Range Low	Range High
Book I	6.183	4.969	5.000	1	50
Book II	4.817	4.814	5.000	1	33

TABLE 123

PERCENTAGE OF CLASS TIME DEVOTED TO PREVIEWING

	Mean	Median	Mode	Range Low	Range High
Book I	6.819	5.060	5.000	1	50
Book II	5.519	4.964	5.000	1	20

TABLE 124

PERCENTAGE OF CLASS TIME DEVOTED TO NEW-MATTER DICTATION PRACTICE

	Mean	Median	Mode	Range Low	Range High
Book I	9.670	9.625	5.000	1	50
Book II	24.562	20.414	20.000	2	75

TABLE 125

PERCENTAGE OF CLASS TIME DEVOTED TO PHRASE PRESENTATION AND REVIEW

	Mean	Median	Mode	Range Low	Range High
Book I	6.575	5.082	5.000	1	50
Book II	5.315	4.955	5.000	1	15

TABLE 126

PERCENTAGE OF CLASS TIME DEVOTED TO TESTING

	Mean	Median	Mode	Range Low	Range High
Book I	9.571	9.250	5.000	2	20
Book II	11.750	9.667	10.000	2	30

TABLE 127

STEPWISE REGRESSION FOR PERCENTAGE OF TIME SPENT ON VARIOUS CLASS ACTIVITIES IN BOOK I

Classification	Multiple Correlation	Correlation Square	Correlation Square Change	Simple Correlation
Typewriter transcription	0.20842	0.04344	0.04344	0.20842[a]
Practice-matter dictation	0.25646	0.06577	0.02233	0.13992[a]
Previewing	0.29315	0.08594	0.02017	0.12651[a]
Shorthand Penmanship Drills	0.30626	0.09379	0.00785	-0.07025[a]
Reading shorthand homework	0.31116	0.09682	0.00303	-0.11668[a]
New-matter dictation practice	0.31471	0.09904	0.00222	0.03450[a]
In-class homework preparation	0.31731	0.10068	0.00164	-0.05062[a]
Theory presentation and review	0.32029	0.10259	0.00190	-0.14202[a]
Brief-form presentation and review	0.32145	0.10333	0.00074	0.01624[a]
English review (punctuation, spelling, etc.)	0.32194	0.10365	0.00032	-0.05381[a]

[a]Not significant at the 0.05 level.

0.05 level. The variables, phrase presentation and review and testing had F-ratios too small to permit them to enter the stepwise regression. Total contribution of the other ten variables entered (multiple correlation squared) was found to be 0.10365. This 10 percent represents the variance in estimated new-matter dictation speed achievement accounted for by the combined effect of the ten variables entered. Typewriter transcription, the first variable entered, accounted for approximately 41.9 percent of the total variance reported. Practice matter dictation in conjunction with typewriter transcription accounted for more than 63.4 percent of the total variance reported. F-ratios at each step in the regression were not significant at the 0.05 level.

In Book II, none of the correlation coefficients for individual variables (simple correlation) were significant at the 0.05 level (see table 128, page 135). As in Book I, phrase presentation and review and testing had F-ratios too small to enter the stepwise regression. Total contribution of the ten variables entered (multiple correlation squared) was found to be 0.17620. This 17 percent represents the variance in estimated new-matter dictation speed achievement accounted for by the combined effect of the ten variables entered. Typewriter transcription, the first variable entered, accounted for approximately 63.0 percent of the total variance reported. Shorthand penmanship drills and practice-matter dictation in conjunction with typewriter transcription accounted for more than 87.6 percent of the total. F-ratios at each step in the regression were not significant at the 0.05 level.

TABLE 128

STEPWISE REGRESSION FOR PERCENTAGE OF TIME SPENT ON VARIOUS CLASS ACTIVITIES IN BOOK II

Classification	Multiple Correlation	Correlation Square	Correlation Square Change	Simple Correlation
Typewriter transcription	0.33321	0.11103	0.11103	0.33321[a]
Shorthand penmanship drills	0.36224	0.13122	0.02019	0.06618[a]
Practice-matter dictation	0.39296	0.15442	0.02320	0.01927[a]
Theory presentation and review	0.39927	0.15942	0.00500	-0.14748[a]
Brief-form presentation and review	0.40971	0.16786	0.00845	-0.05271[a]
Reading shorthand homework	0.41367	0.17112	0.00326	-0.20830[a]
English review (punctuation, spelling, etc.)	0.41652	0.17349	0.00237	-0.07032[a]
Previewing	0.41822	0.17491	0.00142	-0.08415[a]
New-matter dictation practice	0.41926	0.17578	0.00087	-0.01556[a]
In-class homework preparation	0.41976	0.17620	0.00042	-0.04179[a]

[a]Not significant at the 0.05 level.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

The problem of this study was to identify and analyze selected teaching practices in teaching first-year Gregg Shorthand in United States high schools.

The purpose of this study was to determine (1) the teaching practices used in teaching first-year Gregg Shorthand; (2) differences between teaching practices used and estimated new-matter dictation speed achievement; (3) the relationship between amount of time available for instruction and estimated new-matter dictation speed achievement; (4) the relationship between size of shorthand classes and estimated new-matter dictation speed achievement; and (5) the relationship between time spent on various class activities and estimated new-matter dictation speed achievement.

A questionnaire was developed and used to survey high school teachers of first-year Gregg Shorthand. The population for this study was systematically selected from Patteron's American Education resource book (Patterson, 1977). A sample by state was obtained by selecting one school per page using a table of random numbers. A total of 511 questionnaires were mailed; 284 were returned. A minimum of one response was obtained from 49 of the 50 states. Teachers' responses

were analyzed statistically using subprograms of Statistical Package for the Social Sciences (SPSS). ONEWAY, REGRESSION, PEARSON CORR, FREQUENCIES, and CONDESCRIPTIVE were utilized to treat the data.

Demographic Data

Analysis of Responses

The survey produced 284 responses which was 55.6 percent of the 511 questionnaires mailed to high schools throughout the United States. Fifty-one, or 18.0 percent, did not offer first-year shorthand. There were 215 usable responses.

Size of School

Of the 215 teachers responding, 83, or 38.6 percent, classified their school as small, or having less than 500 students. Forty-four, or 20.5 percent, classified their school as being medium, or having between 501 and 1,000 students. A large number, 88, or 40.9 percent, indicated that their school had 1,001 students or more which was classified as large.

Length of Class Period

A large majority, 86.4 percent, or 185 of the 214 respondents, reported having a shorthand class period consisting of between 41 and 55 minutes. The mean length for all respondents was 51.15 minutes.

Highest estimated speed achievement was obtained in a class period of 46 to 50 minutes in length. Mean speed achievement for class periods of 45 minutes or less was approximately nine words per minute less than the mean speed achievement for the 46 to 50 minute classification.

Number of Class Periods Per Week

A large majority, 178, or 84.4 percent of 211 teachers responding, reported having the traditional five class periods available for shorthand instruction. A mean of 5.74 class periods was computed for all respondents.

An estimated speed achievement of 73.45 words a minute for this group was about six words a minute higher than mean speed achievement for the other groups.

Number of Weeks Per Year

Most of the teachers, 162, or 78.6 percent, indicated that their school had between 32 and 37 weeks available for shorthand instruction. A mean of 36.02 weeks was determined for all respondents.

The mean speed achievement for the 32 to 37 week group was approximately seven words a minute higher than the mean speed achievement for groups having less than 32 weeks available for classroom instruction.

Time Available for Classroom Instruction

Total time available for classroom instruction varied widely from school to school. Most of the teachers, 186, or 92.1 percent, indicated that they had at least 7,200 minutes available for instruction during the school year. The 7,200 minutes would be the equivalent of a 40-minute class period meeting five times per week for a term of 36 weeks. The mean number of minutes for all respondents was 10,471.23.

A Pearson Correlation Coefficient indicated that there was no significant relationship between amount of time available for classroom

instruction in first-year shorthand and estimated new-matter dictation speed achievement.

Size of Class

Most teachers, 204, or 95.3 percent, indicated that their average class enrollment in first-year shorthand was 30 students or less. One-hundred, or 46.7 percent, reported that their average class enrollment fell into the 11 to 20 student interval. The mean for all respondents was 19.16 students.

The mean speed achievement of 76.38 words a minute for classes consisting of from 1 to 10 students was considerably higher than that for other classifications. A definite trend was determined. As class size increased, mean speed achievement declined.

A Pearson Correlation Coefficient indicated that there was a significant relationship between size of class in first-year shorthand and estimated new-matter dictation speed achievement.

Practices Employed in Assigning Homework

Homework Goals

In Book I of first-semester shorthand, nearly all, 207, or 98.6 percent of 210 respondents, required homework; and 167, or 79.5 percent, used specific goals for out-of-class homework preparation. A majority of teachers, 136, or 64.8 percent, indicated that they set both reading and writing goals.

In Book II of first-year shorthand, nearly all, 198, or 98.5 percent of 201 respondents, required homework; and 162, or 80.7 percent, used specific goals for out-of-class homework preparation. A majority,

139, or 69.2 percent, indicated that they gave both reading and writing goals.

Mean speed achievement for teachers that set both reading and writing goals was slightly higher than mean speed achievement for all groups except the group that did not require homework. Only two teachers reported not requiring homework, however.

One-way analysis of variance indicated that there was no significant difference between various practices of requiring goals for out-of-class homework preparation in Book I or Book II of first-year shorthand and estimated new-matter dictation speed achievement.

Homework Reading

More teachers, 85, or 40.7 percent, required their students to read the homework lesson as many times as necessary to meet an established reading goal than those using other practices of assigning homework reading in Book I, or first-semester shorthand. Nearly all, 205, or 98.1 percent of 209 respondents, required their students to read at least a portion of the homework lesson.

In Book II of first-year shorthand, a majority, 136, or 69.4 percent, stated that they either had their students read the homework lesson once or as many times as necessary to meet an established reading goal. As in Book I, nearly all, 190, or 96.9 percent, required their students to read at least a portion of the homework lesson.

The mean speed achievement for all groups was very close. The mean speed achievement for teachers that required students to read homework lessons as many times as necessary to meet an established reading goal was slightly higher than the mean speed achievement

for other groups.

One-way analysis of variance indicated that there was no significant difference between number of times students were required to read homework lessons in Book I or Book II of first-year shorthand and estimated new-matter dictation speed achievement.

Homework Writing

In Book I of first-year shorthand, 200, or 100.0 percent of the respondents, reported that they had their students write at least a portion of the homework lesson. Of the 200 respondents, 96, or 48.0 percent, indicated that they had their students write the homework lesson once.

In Book II, only 1 teacher, or 0.5 percent, indicated not requiring at least a portion of the homework lesson to be written. A majority of teachers, 102, or 54.0 percent, stated that they had their students write the homework lesson once.

Mean speed achievement by classification varied slightly but differences were consistent in both Book I and Book II. An estimated mean speed achievement of approximately 76 words a minute for requiring a partial lesson to be written was about two words a minute higher than the mean score determined for teachers who required the homework lesson to be written two times. The group mean speed score for requiring the homework lesson to be written once was about 71.5 words a minute.

One-way analysis of variance indicated that there was no significant difference between number of times students were required to write homework lessons in Book I or Book II of first-year shorthand and estimated new-matter dictation speed achievement.

Introduction of Homework Writing

In Book I, 142, or 90.5 percent of 157 teachers responding, indicated that they required entire homework lessons to be written by the twentieth day of instruction. A majority, 108, or 68.8 percent, indicated that they initiated this practice by the tenth day of instruction. The mean for all respondents was day 10.45.

Lesson 1 was the most frequent response as to lesson number at which homework writing began. This may indicate that a large number of teachers returned to Lesson 1 for their homework assignment during the tenth day of instruction. Most teachers, 175, or 92.6 percent, indicated that they began requiring the writing of entire homework lessons at or prior to Lesson 20. A majority, 141, or 74.6 percent, began the practice at or prior to Lesson 10. Less than 20 teachers delayed introduction of writing entire homework lessons until after Lesson 20 of Book I. The mean for all respondents in Book I was Lesson 8.5.

One-way analysis of variance indicated that there was no significant difference for day and lesson when writing entire homework lessons was begun in Book I or Book II of first-year shorthand and estimated new-matter dictation speed achievement.

Checking Homework Preparation

In Book I of first-year shorthand, a majority, 171, or 83.0 percent, stated that they used the practice of collecting and checking shorthand notes either daily or occasionally. Only 8, or 3.9 percent, collected shorthand notes without checking them.

In Book II, a majority, 136, or 71.2 percent, stated that they collected and checked shorthand notes either on a daily basis or at

least occasionally. Only 11, or 5.7 percent, collected shorthand notes without checking them.

Mean speed achievement by group varied slightly. There was less than four words a minute difference in all group speed scores except for no homework required. Only one teacher reported not requiring homework, however.

One-way analysis of variance indicated that there was no significant difference between practices employed to check homework preparation in Book I or Book II of first-year shorthand and estimated new-matter dictation speed achievement.

Practices Employed in Testing Reading Progress

In Book I, the most popular response was for checking reading progress by subjectively assigning a grade based upon daily reading of homework notes. This practice was used by 80, or 39.0 percent of the teachers. An additional 33.7 percent, or 69 teachers, stated that they assigned their reading grades based upon established goals. Reading grades were not assigned by 38, or 18.5 percent of the teachers.

In Book II of first-year shorthand, 54, or 29.3 percent, did not assign a reading grade. That is a 10.8 percent increase from what was reported for Book I. As in Book I, the practice of subjectively assigning a grade to daily reading of homework notes was the most popular response. Fifty-eight, or 31.5 percent, used that method of checking their students' reading progress.

A mean speed achievement of approximately 75 words a minute for the group that assigned grades based upon an established reading goal

was about two words a minute higher than the mean speed score for the group that subjectively assigned grades from daily reading of homework notes.

One-way analysis of variance indicated that there was no significant difference between practices employed to test reading progress in Book I or Book II of first-year shorthand and estimated new-matter dictation speed achievement.

Practices Employed to Teach Writing from Dictation

Introduction of Practice-Matter Dictation

Of 138 teachers responding as to day when they introduced practice-matter dictation, 101, or 73.2 percent, indicated that they started giving dictation by the twentieth day of instruction. Of that total, 69, or 44.9 percent of all teachers responding, indicated that they started their dictation by the tenth day of instruction. The mean for all respondents was day 17.99.

Of 187 teachers responding as to lesson number at which they introduced practice-matter dictation, 139, or 74.3 percent, indicated that their dictation began by Lesson 20. Of that total, 96, or 51.3 percent of all teachers responding, indicated that they started their dictation by Lesson 10. The mean lesson for all respondents was 15.68.

The mean speed achievement for the group that introduced writing from dictation between day 11 and day 20 was only one to two words a minute higher than the mean speed score for the other groups. The mean speed achievement for the group that introduced writing from dictation between Lesson 11 and Lesson 20 was about three words a minute

higher than the mean speed scores for the other groups.

One-way analysis of variance showed no significant differences between day and lesson when practice-matter dictation was begun in Book I of first-year shorthand and estimated new-matter dictation speed achievement.

Introductory Dictation Speed

Of 211 teachers responding, 85, or 40.3 percent, indicated that their introductory rate of dictation was 40 words per minute. A majority, 132, or 62.6 percent, used a fixed rate of dictation. A large percentage, however, 37.4, or 79 respondents, stated that they used untimed dictation.

A mean speed achievement score of 84.21 words a minute for the 60 to 69 word-per-minute group was higher than the 73.17 mean score for the group that used an introductory rate of 40 to 49 words a minute. Only four teachers reported using the faster dictation rate. Untimed dictation had a mean speed score of 71.05.

One-way analysis of variance indicated that there was no significant difference between introductory rates of practice-matter dictation in Book I of first-year shorthand and estimated new-matter dictation speed achievement.

Introductory Dictation Material

A majority of teachers, 141, or 66.2 percent, said that they used either sentences or partial sentences to introduce their students to practice-matter dictation. Of that total 91, or 42.7 percent of all respondents, stated that they used sentences. Of 213 teachers responding,

a total of 167, or 78.4 percent, broke a letter down into smaller parts for introducing practice-matter dictation.

A mean speed achievement score of 77.01 words a minute for using partial sentences was higher than the mean score for the other groups.

One-way analysis of variance showed that there was no significant difference between type of material used to initially introduce new-matter dictation in Book I of first-year shorthand and estimated new-matter dictation speed achievement.

Practices Employed to Teach Brief Forms and Phrases

Brief Form Testing

Nearly all, 187, or 94.0 percent, tested their students for end-of-year brief form performance. In Book I, a majority, 121, or 60.8 percent, stated that they used dictated tests to test their students for brief form performance. Fifty-nine, or 29.6 percent, stated that they used duplicated tests as their means of testing for terminal brief form performance.

In Book II, the most popular response was again for using dictated tests. Of 187 teachers responding, 116, or 62.0 percent, indicated that this was the way that they preferred to test their students for brief form performance.

The mean speed achievement scores for both duplicated tests and dictated tests were considerably higher than the mean scores for the other groups. The mean speed scores for the groups were 75.72 words a minute for duplicated tests, 72.21 words per minute for dictated tests, and 55.49 words a minute for not testing.

One-way analysis of variance showed a significant difference in practices employed to test brief form performance in Book I of first-year shorthand. No significant difference was found for Book II, however.

Brief Form Accuracy

Of 209 teachers responding as to their minimum end-of-year accuracy requirement for brief form performance, 144, or 68.9 percent, indicated using a specific accuracy requirement. Forty-eight, or 33.3 percent, had an accuracy requirement of 95 percent, which was the most popular response. Thirty, or 20.8 percent, stated that they required 100 percent accuracy on terminal brief form performance. The mean percentage for those teachers using a specific accuracy requirement was 92.10.

The mean speed achievement score of approximately 76 words per minute for groups that required brief forms to be written with 95 to 100 percent accuracy was considerably higher than the mean scores for the other groups. The mean speed score for the group using no specific accuracy was 69.24 words a minute; the group using 90 to 94 percent accuracy was 67.69; and the group not testing was 60.68 words a minute.

One-way analysis of variance indicated that there was a significant difference in accuracy requirement for end-of-year brief form performance.

Testing of Commonly Used Phrases

In Book I, a majority, 112, or 54.9 percent, did not test for performance on commonly used phrases. Of the 92 respondents who

tested for performance, 46, or 50.0 percent, used dictated tests; and 40, or 43.5 percent, used duplicated tests.

In Book II, 117, or 58.8 percent of 199 respondents, did not test for performance on commonly used phrases. Of the 82 respondents who tested for performance, 52, or 63.4 percent, used dictated tests; and 25, or 30.5 percent, used duplicated tests.

The mean speed achievement score for timed reading of the phrase chart was slightly higher than the mean speed score determined for the groups using duplicated and dictated tests. Only two teachers reported using timed reading of the phrase chart, however.

One-way analysis of variance showed no significant difference for practices employed to test for performance on commonly used phrases in Book I or Book II of first-year shorthand and estimated new-matter dictation speed achievement.

Accuracy on Commonly Used Phrases

Of 211 teachers responding as to their minimum end-of-year accuracy requirement for performance on commonly used phrases, 109, or 51.7 percent, reported that they did not test their students for mastery. Another 47 respondents, or 22.3 percent, stated that they tested for performance but did not indicate a specific accuracy requirement. Of 55 teachers reporting use of a specific accuracy requirement, 45, or 81.8 percent, set an accuracy requirement of 80 percent or higher. The most popular response, 95 percent, was used by 16, or 29.1 percent.

Mean speed achievement was slightly higher for groups requiring a specific accuracy requirement than for the group that did not test or the group that tested but did not require a specific accuracy

requirement. A mean speed score of 84.33 words a minute for 100 percent accuracy was about 10 words a minute higher than that determined for the other groups. Only two teachers reported using a 100 percent accuracy requirement, however.

One-way analysis of variance indicated that there was no significant difference in accuracy requirement for end-of-year performance on commonly used phrases.

Practices Employed to Encourage the Writing of Theoretically Correct Shorthand Outlines

In Book I of first-year shorthand, 139, or 64.7 percent of 215 teachers responding, indicated that they used a daily chalkboard review as a means of encouraging their students to write theoretically correct shorthand outlines. Short theory tests were used by 126, or 58.6 percent; daily spelling of outlines was used by 109, or 50.7 percent; and chapter theory tests were used by 103, or 47.9 percent.

In Book II, a large number, 64, or 29.8 percent, continued to use the daily chalkboard review as a means of encouraging their students to write theoretically correct shorthand outlines. Use of the periodic chalkboard review increased greatly over use in Book I. Ninety-one, or 42.3 percent, used this practice in Book II.

SPSS subprogram REGRESSION indicated that there was no significant relationship between practices employed to encourage the writing of theoretically correct shorthand outlines and estimated new-matter dictation speed achievement.

STEPWISE REGRESSION (forward) determined that there were no significant correlation coefficients for the eight independent variables

entered in either Book I or Book II. In Book I, daily chalkboard review, the first variable entered, accounted for approximately 31 percent of the total variance accounted for by the combined effect of the seven variables entered. Memorization of rules for outline construction in conjunction with daily chalkboard review accounted for more than 60 percent of the total. In Book II, memorization of rules for outline construction, the first variable entered, accounted for approximately 35 percent of the total variance reported. Daily spelling of outlines in conjunction with memorization of rules for outline construction accounted for more than 60 percent of the total.

Practices Employed in Testing New-Matter Dictation Speed Achievement

Introduction of New-Matter Dictation

In Book I, or first-semester shorthand, a majority, 53, or 55.2 percent of 96 respondents, indicated that they introduced new-matter dictation prior to Lesson 49. Twenty-six percent, or 25 teachers, said that they introduced new-matter dictation in either Lesson 49 or Lesson 50. The mean for all respondents was lesson 40.18.

In Book II, or second-semester shorthand, 44, or 50.6 percent of 87 respondents, stated that they introduced new-matter dictation in Lesson 1. The mean for all respondents was lesson 10.87. Eight teachers reported that they did not introduce new-matter dictation in first-year shorthand.

Mean speed achievement was slightly higher for the group that introduced new-matter dictation prior to Lesson 49 in Book I. In Book II, the mean speed achievement for the group that introduced new-matter

dictation between Lesson 1 and Lesson 10 was about one word per minute higher than the group that delayed introduction of new-matter dictation until Lesson 11 or later.

One-way analysis of variance indicated that there was no significant difference for lesson at which new-matter dictation was introduced in Book I or Book II of first-year shorthand and estimated new-matter dictation speed achievement.

Length of Tests

A majority of teachers, 109, or 55.3 percent, said that they did not test students' ability to write new-matter dictation in Book I. Of the 88 teachers who did test, 84, or 95.5 percent, indicated that they used a test of three minutes or less. Thirty-six, or 40.9 percent of the 88 teachers who did test, used a test of three minutes in length. The mean was 2.42 minutes.

In Book II, all but 9, or 4.5 percent of the teachers, reported that they tested their students' ability to write new-matter dictation. A large majority, 118, or 59.6 percent, said that they used a three-minute test. Mean length of test for the 189 teachers who tested students' ability to write new-matter dictation in Book II was 3.56 minutes.

Mean speed achievement for groups using one, two, or three-minute tests varied only slightly between 73 and 75 words per minute. The mean speed achievement for the group using a five-minute test was 100 words a minute. Only one teacher reported using a five-minute test, however. In Book II, the highest mean speed score was obtained by the group that used the three-minute test.

One-way analysis of variance indicated that there was no significant difference for length of tests for evaluating students' ability to write new-matter dictation and estimated new-matter dictation speed achievement.

Accuracy Requirement on Tests

Of the 80 teachers who responded to testing for new-matter dictation speed achievement in Book I, 60, or 75.0 percent, reported using an accuracy requirement of 95 percent. Mean accuracy requirement for the 80 teachers who tested was 93.28 percent.

In Book II, 146, or 81.1 percent of 180 teachers responding, stated that they required students' new-matter dictation transcripts to be 95 percent accurate. The mean accuracy requirement for the 180 teachers who tested was 93.58 percent.

Mean speed achievement for the group that required from 96 to 100 percent accuracy on new-matter dictation test transcripts was higher than the mean speed for the 95 percent group in both Book I and Book II. Very few teachers used the higher accuracy requirement, however.

One-way analysis of variance indicated that there was no significant difference for accuracy requirement on test transcripts for evaluating ability to write new-matter dictation and estimated new-matter dictation speed achievement.

Frequency of Tests

Of the 83 teachers who did give new-matter dictation tests in Book I, 39, or 47.0 percent, said that they gave tests once a week.

Twenty-one, or 25.3 percent, tested twice a week; and 19, or 22.9 percent, tested once every two weeks. Only 4, or 4.8 percent, tested three times a week.

In Book II, 83, or 43.7 percent of the 190 teachers who tested, stated that they gave tests once a week. Forty-eight, or 25.3 percent, indicated giving tests twice a week; and 36, or 18.9 percent, stated that they tested once every two weeks. Few, 23, or 12.1 percent, tested three times a week.

A mean speed score of 76.13 words a minute for the group that tested once a week in Book I was surpassed only by the 100.49 words a minute for the group that tested three times a week. Only three teachers reported testing three times a week, however. In Book II, the highest mean speed achievement was obtained by the group that tested three times a week.

One-way analysis of variance indicated that there was a significant difference in frequency of new-matter dictation tests in both Book I and Book II of first-year shorthand and estimated new-matter dictation speed achievement.

Estimated Student Speed Achievement

Teachers reported an estimated speed achievement score for 3,999 students. A majority of the students, 2,445, or 61.1 percent, achieved between the speeds of 60 to 80 words per minute. Teachers estimated that 755, or 18.9 percent of the students, achieved a new-matter dictation recording skill of 90 words per minute or more. Only 2.2 percent, or 82 students, achieved 120 words per minute or more. Teachers reported

that 157, or 3.9 percent, did not pass a speed take of at least 40 words per minute. Mean speed achievement for the 3,842 students who passed at least one speed take at 40 words per minute or higher was 71.69 words a minute.

Practices Employed to Teach Typewriter Transcription

Introduction of Typewriter Transcription

Of 157 teachers responding, 99, or 63.0 percent, said that they introduced typewriter transcription in Book I. Of the 58 teachers who delayed introduction until Book II, a majority, 37, or 63.8 percent, introduced typewriter transcription prior to Lesson 11. The mean for Book I was lesson 33.78. In Book II, the mean was lesson 14.52.

In Book I, the mean speed achievement score of 79.05 for the group that introduced typewriter transcription prior to Lesson 25 was about five words a minute higher than the speed score for the group that introduced transcription after Lesson 48. In Book II, the mean speed score for the group that introduced typewriter transcription prior to Lesson 11 was 76.60 words a minute. The mean speed score for the group that delayed introduction until after Lesson 10 was 70.31 words a minute.

One-way analysis of variance indicated that there was no significant difference for lesson at which typewriter transcription was introduced in Book I or Book II of first-year shorthand and estimated new-matter dictation speed achievement.

Time Devoted to Typewriter Transcription

A majority, 94, or 50.3 percent of 187 teachers responding, said that they did not require typewriter transcription in Book I, or first-semester shorthand. Of the 93 teachers who did require typewriter transcription, 76, or 81.7 percent, devoted less than an hour per week to this activity. Only 17, or 18.3 percent, indicated that they devoted 61 minutes or more per week to typewriter transcription. The mean was 52.86 minutes per week.

In Book II, 38, or 19.0 percent of 200 teachers responding, did not require typewriter transcription. An hour or less per week was devoted to this activity by 105, or 52.5 percent of the teachers. Time devoted to typewriter transcription increased from that in Book I; however, as 57 teachers, or 28.5 percent, indicated that they devoted 61 minutes or more per week to this activity. The mean was 64.63 minutes per week.

Mean speed achievement for groups that devoted 61 minutes or more of class time per week to typewriter transcription was considerably higher than the mean scores for the teachers who devoted 60 minutes or less per week to this activity. Differences in group means were greater in Book I than they were in Book II.

One-way analysis of variance indicated that there was a significant difference in amount of time devoted to typewriter transcription in Book I and Book II of first-year shorthand and estimated new-matter dictation speed achievement.

Practices Employed in Using Shorthand Laboratories

Utilization of Shorthand Laboratories

A large number of the 213 respondents, 91, or 42.7 percent, indicated that they did not have a shorthand laboratory available for student practice. A majority, 115, or 54.0 percent, stated that they used the laboratory for some in-class practice. Very few, 5, or 2.3 percent, had a shorthand laboratory available but did not use it. Only 2, or 0.9 percent, utilized the laboratory for out-of-class practice only.

One-way analysis of variance indicated that there was no significant difference for various ways of utilizing shorthand laboratories for student practice in first-year shorthand and estimated new-matter dictation speed achievement.

Time Devoted to Laboratory Practice

A large number, 85, or 49.4 percent of the 172 teachers responding, indicated that they did not have laboratory facilities available in Book I of first-year shorthand. Another 47, or 27.3 percent, stated that they did not require their students to use the laboratory. Only 40, or 23.3 percent, reported laboratory use by their students.

In Book II, a majority, 104, or 54.1 percent, either did not require laboratory use or did not have one available. Use of the shorthand laboratory did increase over what was reported for Book I, however. Sixty-four, or 33.3 percent of those reporting use, stated that students used the laboratory 60 minutes per week or less. Only 24, or 12.5 percent, indicated use for 61 minutes or more per week.

Mean speed achievement for the group reporting use of 61 to 90 minutes per week was slightly higher than the mean scores determined for the other groups. Very few teachers reported use of the shorthand laboratory for this amount of time, however.

One-way analysis of variance indicated that there was no significant difference for amount of time devoted to laboratory practice in Book I or Book II of first-year shorthand and estimated new-matter dictation speed achievement.

Time Spent on Various Class Activities

SPSS subprogram REGRESSION indicated that there was no significant relationship between time spent on various class activities in Book I or Book II of first-year shorthand and estimated new-matter dictation speed achievement.

In Book I, none of the correlation coefficients determined for the individual variables, class activities, were significant. Typewriter transcription, the first-variable entered in the stepwise regression (forward) accounted for approximately 41.9 percent of the total variance in estimated new-matter dictation speed achievement determined for the combined effect of the 12 class activities entered in the regression. Practice-matter dictation in conjunction with typewriter transcription accounted for more than 63.4 percent of the total variance reported.

In Book II, none of the correlation coefficients determined for the individual variables, class activities, were significant. Typewriter transcription, the first-variable entered in the stepwise regression (forward), accounted for approximately 63.0 percent of the

total variance in estimated new-matter dictation speed achievement determined for the combined effect of the 12 class activities entered in the regression. Shorthand penmanship drill and practice-matter dictation in conjunction with typewriter transcription accounted for more than 87.6 percent of the total.

Conclusions

Recognizing the limitations of this study, the researcher drew the following conclusions based on the findings obtained from this research study:

1. Total time available for classroom instruction in first-year shorthand did not substantially affect estimated new-matter dictation speed achievement.

2. Size of class had a substantial influence on estimated new-matter dictation speed achievement. The mean speed achievement of 76.38 words a minute for classes consisting of from one to ten students was considerably higher than that for other classifications. A definite trend was indicated. As class size increased, mean speed achievement declined.

3. No substantial differences were determined in estimated new-matter dictation speed achievement for various practices used to assign homework in Book I or Book II of first-year shorthand.

4. No substantial differences were determined in estimated new-matter dictation speed achievement for various practices used to test reading progress in Book I or Book II of first-year shorthand.

5. No substantial differences were determined in estimated new-matter dictation speed achievement for various practices used to teach

writing from dictation in Book I or Book II of first-year shorthand.

6. Substantial differences in estimated new-matter dictation speed achievement were determined for various practices used to teach brief forms in Book I of first-year shorthand. The mean speed achievements of 75.72 words a minute for teachers using duplicated tests and 72.21 words a minute for teachers using dictated tests were considerably higher than that for other classifications. A substantial difference was determined for various minimum end-of-year accuracy requirements for brief form performance in first-year shorthand. The mean speed achievement for groups requiring from 95 to 100 percent accuracy on brief form performance was considerably higher than that for other classifications. No substantial differences in estimated new-matter dictation speed achievement were determined for various practices used to teach brief forms in Book II or for various practices used to teach commonly used phrases in Book I or Book II of first-year shorthand.

7. Various practices used to encourage the writing of theoretically correct shorthand outlines in Book I and Book II of first-year shorthand did not substantially affect estimated new-matter dictation speed achievement.

8. Substantial differences in estimated new-matter dictation speed achievement were determined for number of tests for evaluating students' ability to write new-matter dictation in Book I and Book II of first-year shorthand. The mean speed achievement for teachers who gave new-matter dictation tests three times a week was considerably higher than that for other classifications. No substantial differences

in estimated new-matter dictation speed achievement were determined for the day or lesson when new-matter dictation was introduced, length of new-matter dictation tests, or accuracy requirement on new-matter dictation tests in either Book I or Book II of first-year shorthand.

9. Substantial differences in estimated new-matter dictation speed achievement were determined for amount of time devoted to typewriter transcription in Book I and Book II of first-year shorthand. The mean speed achievement for teachers who devoted 61 minutes or more of class time per week to typewriter transcription was considerably higher than that for other classifications. Differences were greater in Book I than in Book II. No substantial differences in estimated new-matter dictation speed achievement were determined for when typewriter transcription was introduced in either Book I or Book II of first-year shorthand.

10. No substantial differences were determined in estimated new-matter dictation speed achievement for various practices employed in using shorthand laboratories in Book I or Book II of first-year shorthand.

11. Time spent on various class activities in Book I and Book II of first-year shorthand did not substantially affect estimated new-matter dictation speed achievement.

Recommendations

The following recommendations are made by the researcher based upon the conclusions drawn from this research study:

1. Size of the first-year shorthand class should not exceed 30 students.

2. Teachers of first-year shorthand should continue to emphasize the importance of learning brief forms in Book I, or first-semester shorthand. Duplicated or dictated tests with a 95 percent or higher accuracy requirement may produce the best results.

3. Teachers of first-year shorthand should consider increasing the number of new-matter dictation tests for evaluating students' ability to write new-matter dictation in both Book I and Book II of first-year shorthand.

4. Teachers should consider increasing the amount of class time devoted to typewriter transcription in both Book I and Book II of first-year shorthand.

5. Teachers and teacher educators should continue to seek new practices and methods of teaching first-year shorthand.

The following suggestions for further research are based upon the conclusions drawn from the findings of this study:

1. An experimental study should be conducted during the first semester of beginning shorthand at the secondary level in which various practices used to teach brief forms would be investigated.

2. An experimental study should be conducted during the first semester of beginning shorthand at the secondary level in which various practices used to teach typewriter transcription would be investigated.

3. A study should be conducted during first-year shorthand at the secondary level in which teaching practices not included in this study would be investigated.

4. A study should be conducted to determine actual new-matter dictation speed achievement of first-year shorthand students at the secondary level.

APPENDIX A

COVER LETTER

UNIVERSITY OF NORTH DAKOTA
DEPARTMENT OF BUSINESS AND VOCATIONAL EDUCATION
GRAND FORKS, NORTH DAKOTA 58202

Dear Chairperson:

SUBJECT: A Survey of Methods Used in Teaching First-Year Gregg Shorthand

Course content and teaching methodology in shorthand are a concern to all of us as practicing professionals. We are writing to ask your assistance in a national research project being conducted to provide insight into important questions concerning the teaching of first-year Gregg Shorthand.

If you personally taught a first-year shorthand course last year, please complete the questionnaire. If you did not teach this course, give the questionnaire to a teacher who taught first-year shorthand last year and encourage that individual to complete and return the questionnaire. The person answering the questionnaire has to be a teacher who taught first-year Gregg Shorthand at your school during the 1976-1977 school year. Cooperation in completing and returning the enclosed questionnaire by March 31 would be appreciated. Completion of this questionnaire will take approximately 20 minutes, and all responses will be held confidential.

The success of this study depends upon the response by dedicated educators. An addressed, postage-paid envelope is enclosed for convenience in returning the questionnaire.

Sincerely yours,

Richard L. Wedell
Graduate Teaching Assistant

John C. Peterson
Department Chairman

APPENDIX B

QUESTIONNAIRE

QUESTIONNAIRE

SECTION I

INSTRUCTIONS: Mark the appropriate response by placing a check mark in the space provided.

1. My school offered Gregg Shorthand during the 1976-1977 school year.

   ____ yes

   ____ no

2. I taught first-year Gregg Shorthand by traditional methods at this school during the 1976-1977 school year. (Methods other than individualized instruction).

   ____ yes

   ____ no

INSTRUCTIONS: If your answers to questions 1 and 2 were yes, please complete the remainder of the questionnaire. If your response(s) was no, return the questionnaire without completing Section II.

SECTION II

INSTRUCTIONS: Indicate your most appropriate response to the following statements. For the purpose of this questionnaire, Book I is used for approximately the first one-half year of instruction. Book II is used for approximately the second one-half year of instruction.

3. State the approximate student enrollment at your school. (Grades 10, 11, and 12 only).

   ____ 500 students or less

   ____ 501-1000 students

   ____ 1001 students or more

4. Specify the number of minutes available for each shorthand class period during the 1976-1977 school year.

   ____ minutes

5. Specify the number of shorthand class periods per week during the 1976-1977 school year.

   ____ class periods

6. Specify the total number of weeks that were available for shorthand instruction during the 1976-1977 school year.

   ____ weeks available

7. State the approximate student enrollment in a typical first-year Gregg Shorthand class during the 1976-1977 school year. (If you taught more than one section, give an average number).

   ____ students

8. Indicate whether your students were usually given specific reading and writing goals (time limits) to meet for out-of-class homework preparation last year. (One response for each column).

Book I	Book II	
		no required homework
		no specific goals
		yes, reading goals only
		yes, writing goals only
		yes, both reading and writing goals

9. Indicate how many times your students were usually asked to read the entire homework lesson as an out-of-class assignment last year. (One response for each column).

Book I	Book II	
		not required to read it outside of class
		required part of each lesson only
		one time
		two times
		as many times as necessary to meet established reading goals.
		other (please specify)_____

10. Indicate how many times your students were usually asked to write the entire homework lesson as an out-of-class assignment last year. (One response for each column).

Book I	Book II	
		not required to write it outside of class
		required part of each lesson only
		one time
		two times
		as many times as necessary to meet established writing goals
		other (please specify)_____

11. Specify at which lesson your students began writing the entire homework lesson as an out-of-class assignment last year. (Give day, lesson number, and book number).

    day _____ lesson _____ of Book _____

    ____ was not required

12. Indicate your most common method of checking out-of-class homework preparation last year. (One response for each column).

Book I	Book II	
		no homework required
		collected but did not check it
		collected and checked it daily
		collected and checked it occasionally
		collected and checked completed shorthand notebooks
		did not collect but checked reading from homework during class
		other (please specify)_____

13. Indicate your most common method of testing the reading progress of your students last year. (One response for each column).

Book I	Book II	
		did not assign reading grades
		checked "words a minute" reading levels and assigned grades based on established goals
		subjectively assigned grades from daily reading of homework
		subjectively assigned grades at the end of each marking period
		other (please specify) _____

14. Specify at which lesson your students began writing practice dictation from material in Book I last year. (Give day and lesson number).

day ____ lesson ____

15. Specify your dictation speed when students were introduced to writing practiced dictation in Book I last year. (One response only).

____ words per minute (specify speed)

____ untimed dictation

16. Indicate the type of practice material used to initially introduce students to writing from practice-matter dictation (One response only).

____ partial sentences

____ sentences

____ paragraphs

____ short letters

____ other (please specify)_____

17. Indicate your most common method of testing for end-of-year brief-form performance last year. (One response for each column).

Book I	Book II	
		did not test brief-form performance
		timed reading of the brief-form chart
		dictated brief-form tests
		duplicated brief-form tests (not dictated)
		other (please specify)_____

18. Specify your minimum end-of-year accuracy requirement for brief-form performance last year. (One response only).

____ did not test brief-form performance

____ no specific accuracy requirement

____ % accuracy requirement (specify percentage)

19. Indicate your most common method of testing for end-of-year performance on commonly used phrases last year. (One response for each column).

Book I	Book II	
		did not test performance on commonly used phrases
		timed reading of the phrase chart
		dictated phrase tests
		duplicated phrase tests (not dictated)
		other (please specify)_____

20. Specify your minimum end-of-year accuracy requirement for performance on commonly used phrases last year. (One response only).

____ did not test performance on commonly used phrases

____ no specific accuracy requirement

____ % accuracy requirement (specify percentage)

21. Indicate how you emphasized writing theoretically correct shorthand outlines after theory was initially presented last year. (Check as many as apply).

Book I	Book II	
		daily chalkboard review
		periodic chalkboard review
		daily spelling of outlines from book
		short theory quizzes
		chapter theory tests
		long theory tests
		memorization of rules for outline construction
		checking of shorthand outlines in students' dictation notes
		other (please specify)_____

22. Specify when you introduced new-matter dictation last year. (Dictation from material students had not practiced) (Give lesson number and book number)

lesson ____ of Book ____

____ did not introduce during first-year shorthand

23. Specify the most common length of your tests for evaluating students ability to write new-matter dictation last year. (One response for each column).

Book I	Book II	
		minutes (specify in minutes)
		did not give new-matter dictation tests

24. Specify your most common accuracy requirement on test transcripts for evaluating ability to write new-matter dictation last year. (One response for each column).

Book I	Book II	
		percentage (specify percentage)
		did not give new-matter dictation tests

25. Indicate how often you generally gave tests for evaluating ability to write new-matter dictation last year. (One response for each column)

Book I	Book II	
		did not test new-matter dictation skills
		once every two weeks
		once a week
		twice a week
		three times a week
		other (please specify)_____

26. Specify when you introduced transcribing of shorthand notes on the typewriter last year. (Give lesson number and book number).

lesson _____ of Book _____

_____ did not require typewriter transcription during the first year

27. State the approximate amount of class time per week that was devoted to typewriter transcription after its introduction last year. (One response for each column).

Book I	Book II	
		minutes (specify in minutes)
		did not require typewriter transcription

28. Indicate how your shorthand laboratory was most commonly used for student practice last year. (One response only).

____ no laboratory facilities available
____ laboratory facilities available but not used
____ used for in-class practice only
____ used for out-of-class practice only
____ used for in- and out-of-class practice

29. State the approximate amount of time per week the typical student used the shorthand laboratory last year. (One response for each column).

Book I	Book II	
		minutes (specify in minutes)
		did not require laboratory use
		no laboratory facilities available

30. Specify the approximate percentage of class time that was typically spent on the following activities last year. (Responses for each column should total 100%).

Book I	Book II	
%	%	reading shorthand (homework)
%	%	theory presentation and review
%	%	brief-form presentation and review
%	%	in-class homework preparation
%	%	practice-matter dictation
%	%	typewriter transcription
%	%	English review (punctuation, spelling, etc.)
%	%	shorthand penmanship drills
%	%	previewing
%	%	new-matter dictation practice
%	%	phrase presentation and review
%	%	other (please specify)_____
100%	100%	

31. To the best of your ability, estimate the single, highest dictation achievement of your 1976-1977 students on unpreviewed "new-matter" dictation assuming that you gave three-minute dictation takes and required a 95 percent accuracy standard. (Show the number of students that fell into each speed category). (If you taught more than one class, include all students).

____ 140 wpm
____ 130 wpm
____ 120 wpm
____ 110 wpm
____ 100 wpm
____ 90 wpm
____ 80 wpm
____ 70 wpm
____ 60 wpm
____ 50 wpm
____ 40 wpm
____ did not pass a speed take

Comments:

This study will be completed in August, 1978. A summary of the results will be available upon request. Thank you for your help in making this research study possible. Please return the questionnaire by March 31 to:

Mr. Richard L. Wedell
Department of Business and Vocational Education
University of North Dakota
Grand Forks, North Dakota 58202

APPENDIX C

COVER LETTER FOR FOLLOW-UP

The University of North Dakota

GRAND FORKS 58201

BUSINESS AND VOCATIONAL EDUCATION

TELEPHONE: (701) 777-2517

April 10, 1978

Dear Chairperson:

SUBJECT: FOLLOW-UP OF QUESTIONNAIRE ON FIRST-YEAR GREGG SHORTHAND

Recently you received a questionnaire requesting responses concerning first-year shorthand offered at your high school. If you or one of your teachers have already completed the questionnaire, I sincerely "thank you". If for some reason the questionnaire was not completed, would you see that the enclosed questionnaire is completed and returned to me in the enclosed postage-paid envelope. If you do not personally teach this course, would you give the questionnaire to one of your teachers of first-year Gregg Shorthand and encourage that individual to complete and return it.

This is a national research project being conducted to provide insight into important questions concerning first-year Gregg Shorthand. Your assistance will be greatly appreciated.

Sincerely,

Richard L. Wedell

Richard L. Wedell
Graduate Teaching Assistant

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