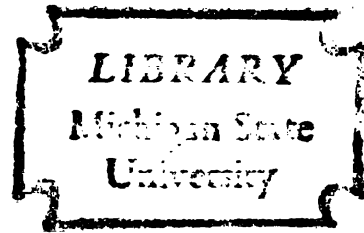


AN EXPERIMENTAL STUDY COMPARING FOUR METHODS
FOR STUDENT IN - CLASS SUPERVISED PRACTICE IN
FIRST - YEAR GREGG SHORTHAND

Dissertation for the Degree of Ph. D.
MICHIGAN STATE UNIVERSITY
JOHN JOSEPH FORTE
1975



This is to certify that the
thesis entitled
AN EXPERIMENTAL STUDY COMPARING FOUR
METHODS FOR STUDENT IN-CLASS
SUPERVISED PRACTICE IN
FIRST-YEAR GREGG
SHORTHAND
presented by

John Joseph Forte

has been accepted towards fulfillment
of the requirements for

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Major professor

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ABSTRACT

AN EXPERIMENTAL STUDY COMPARING FOUR METHODS FOR STUDENT IN-CLASS SUPERVISED PRACTICE IN FIRST-YEAR GREGG SHORTHAND

By

John Joseph Forte

The Problem

This was an experimental study to compare the effectiveness of four methods of doing supervised in-class practice in the second semester of beginning high school Gregg shorthand.

Twenty minutes each day was spent on the in-class practice methods. All of the practice methods compared were based on the textbook used in the course. The four methods were as follows: Method A, the reading method, had the student read the lesson silently. Method B, the traditional homework method, required the student to read each letter in the lesson once and then to write each letter once from self-dictation. In Method C, the student was asked to write the lesson in shorthand, using the transcript accompanying the textbook without having

first read or copied the shorthand plates. Method D, the spot-writing-from-taped-dictation method, had the student, without first having read the lesson, write the lesson in shorthand using the tapes prepared for this study. The lessons in the textbook were recorded at a rate to force speed, and the student was asked to spot-write the lesson once from the taped dictation while reading and keeping her eyes on the textbook.

The secondary purposes were (1) to assess the implications for out-of-class practice; (2) to determine whether there was a significant correlation between the ability to write correct shorthand outlines as measured by a criterion test for theory and the ability to transcribe shorthand notes from dictation; (3) to determine if the order in which the methods were taken had an effect on performance; (4) to assess student reaction to the methods to determine whether students were absent more during one method than during the other methods; and (5) to determine whether there was a significant correlation between liking a method and the ability to take dictation.

Procedures Used

All of the students (43 at the outset) enrolled in the two classes of second semester first-year Gregg shorthand at Waverly High School during the second semester, 1975, were the subjects in this study.

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A repeated measures design was used which enabled each student to receive the four treatments; three weeks were spent on each of the four in-class supervised shorthand practice methods. Students and the orders in which they received the methods were randomly assigned.

Dictation-transcription tests and theory tests were given to measure the shorthand skill attained during the experiment. Theory tests were given at the beginning of the experiment, half way through the experiment, and at the end of the experiment. Dictation-transcription tests were given at the beginning of the experiment and at the end of each three-week segment.

To test the difference between methods, the data was analyzed as a repeated measures design using Jeremy Finn's multivariate program. The multivariate program was used in this study by doing a one-way analysis of covariance for the variable SUM and a one-way multivariate analysis of covariance for the variable DIFF.

At the end of the experiment, students completed an opinionnaire in which they gave their reactions to the experiment.

Findings and Conclusions

The results for 30 students were included in the analysis of the data.

To investigate the question of difference between methods, the data was studied according to groups effect, methods effect, and groups by methods interaction.

Groups Effect

No significant difference was found between groups in the total number of words correctly transcribed, days absent, and attitudes. Therefore, it was concluded that the order in which the treatment methods were given to students was unimportant.

Methods Effect

Difference between methods was tested with a one-way multivariate analysis of covariance using as data the set of DIFF scores for each student across the four treatment methods. No one method was found to be better than any of the other methods.

Groups by Methods Interaction

Groups by methods interaction for words right and attitudes showed no significance. However, groups by methods interaction for days absent was significant ($p = .0162$). The difference between the groups for days absent was significant ($p = .04$) for the reading method. Further study of the data revealed that students were absent more during the reading method when the reading method occurred as the first or third method in the order in which students worked on the shorthand practice methods.

AN EXPERIMENTAL STUDY COMPARING FOUR
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SUPERVISED PRACTICE IN
FIRST-YEAR GREGG
SHORTHAND

By

John Joseph Forte

A DISSERTATION

Submitted to
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DOCTOR OF PHILOSOPHY

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1975

DEDICATED

To my parents, who have made so many things possible

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Chapter 1

THE PROBLEM

The results of research studies demonstrate that although many students do well in shorthand classes, some students do not. Taken as a whole, shorthand instruction frequently leaves much to be desired in reaching objectives which are reasonable and which should be attained. That is, and should be, a concern of shorthand teachers.¹

"If students are to reach the goals set for shorthand, the teacher must provide the appropriate environment."²

The problem of this study, then, was to determine effective ways of doing in-class supervised shorthand practice in the second semester of the first year of Gregg shorthand.

¹"Shorthand--Perspective, Opinion and Dialogue"
(Position papers presented at the 1974 Business Education
Invitational Forum, Brigham Young University), p. 122.

²Ibid., p. 46.

Need For The Study

During the first semester of shorthand, students are highly motivated. They are learning to write shorthand, which is new, fun, and exciting. During the second semester, however, many students lose much of their enthusiasm. Why do students lose their initial enthusiasm? One reason may be that they have to study shorthand every day. Another reason probably has to do with the lack of variety and the sameness of the daily classroom activities.³

Research shows that few students are able to take dictation at 60 words per minute for three minutes with 95 percent accuracy at the completion of one year of shorthand instruction and that less than 25 to 30 percent of the students who complete two years of instruction are able to pass a three-minute dictation test at 80 words per minute with 95 percent accuracy.⁴

Undoubtedly, there are many reasons contributing to the problem of low achievement in shorthand classes; but as previously pointed out, boredom and lack of motivation may be two of the reasons.

³Robert Driska, "Suggestions for Maintaining Student Interest in Shorthand," Business Education Forum 27 (November, 1972), 52.

⁴Ruth I. Anderson, "Shorthand," Changing Methods of Teaching Business Subjects, eds. Leroy Brendel and Herbert Yengel, National Business Education Yearbook, No. 10 (Washington: National Business Education Association, 1972), p. 110.

One of the most talked about areas among shorthand teachers is that of student motivation. This concern over student motivation is probably justified, as students learn best when they are motivated to learn.⁵

Thorndike was one of the first psychologists to give significant attention to motivating forces when he said:

The problem of interest in teaching is not whether children shall learn with interest or without it; they never learn without it; but what kind of interest it shall be; and from what the interest was derived. When the individual is attracted by the intrinsic qualities of the work, his interest may be called immediate or intrinsic; when the work does not interest him in and of itself but only by its consequences or connections, the interest may be called derived.⁶

There appears to be a close relationship between motivation and reinforcement. When activities are successfully accomplished, the learner not only experiences rewards and reinforcement of learning, but also the self-acceptance or acceptance and approval of others resulting from the successful performance acts in turn to further motivate subsequent learning.⁷

⁵Roger Nelson, "Psychological Principles Applied to Shorthand Instruction," Business Education Forum 13 (October, 1958), 11-13.

⁶E. L. Thorndike, Principles of Teaching (New York: A. G. Seiler, 1906), p. 248, cited by Roger Nelson in "Psychological Principles Applied to Shorthand Instruction," Business Education Forum 13 (October, 1958), 11-13.

⁷Nelson, loc. cit.

Because shorthand is a new subject for most students, there is initial enthusiasm or what Thorndike would call "intrinsic" motivation for the subject. Therefore, if learning is to continue, this high level of interest and enthusiasm must be sustained.⁸

Nelson also pointed out that because of the close relationship between motivation and success, each day's activities must provide repeated opportunities for "success" experiences for all students in all types of activities.⁹

When homework is done out of class, the teacher has little or no control over how the student does out-of-class practice. As Anderson stated, teachers know from classroom experience that it is not unusual for a student to do shorthand homework without deriving much benefit from the time devoted to the practice. The next day the outlines seem as foreign to the student as though the shorthand plates had not been copied at all.¹⁰ By having the students do all of their homework in class, the present study attempted to control how the students did their practice.

Shorthand teachers use a variety of methods in assigning out-of-class shorthand practice. Waters summed it up when he stated:

⁸Ibid.

⁹Ibid.

¹⁰Anderson, op. cit., p. 105.

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.¹¹

Many teachers, however, assign the traditional method of doing homework; that is, students are asked to read the lesson once and then to copy it once. The present study compared two variations of the traditional homework method with two other methods of practicing shorthand, neither of which was a variation of the traditional homework method.

By providing students with a variety of in-class supervised practice methods during the second semester of the first year of Gregg shorthand, it was hoped that the students would become motivated and enthusiastic--two elements that are necessary for building shorthand dictation skill.

Purposes Of The Study

The primary purpose of this study was to compare the effectiveness of four methods of doing supervised in-class practice in the second semester of beginning high school shorthand. Twenty minutes each day was spent on the in-class practice methods. The four methods were as follows:

¹¹Max L. Waters, "An Experimental Study of Programmed Shorthand Homework" (Ph.D. dissertation, Colorado State College, 1963), p. 1.

A. The reading approach had the student read the lesson silently. Occasional words of interest, as determined by the student, could be written in the air; if the student believed it necessary, these occasional words could be written on paper.

B. The traditional homework method or self-dictation method asked the student to read the first letter once after which that letter was written once from self-dictation; the second letter was read and written once; then, the student continued on in a similar fashion with the remainder of the letters. If time remained after the lesson was completed, the procedures were repeated from the beginning of the lesson.

C. The writing shorthand from the print (long-hand) method required the student to write the lesson in shorthand, using the transcript accompanying the textbook without having first read or copied the shorthand plates.

D. The spot-writing-from-taped-dictation method had the student, without having first read the lesson, write the lesson in shorthand using the tapes prepared for this study. Each tape consisted of the current lesson plus one or more review lessons. The student did not attempt to write line for line; instead the writing for a given letter was done in one spot while the student read and kept her eyes on the lesson in the textbook. The

dictation was at a rate that forced the student to write at a faster speed than she was capable of comfortably writing.

The criterion of success was a test of the number of correct words transcribed from notes taken of dictated letters. For the substudies, the criterion of success was a theory test in which the number of correct outlines transcribed were counted.

The secondary purposes were (1) to assess the implications for out-of-class practice; (2) to determine whether there was a significant correlation between the ability to write correct shorthand outlines as measured by a criterion test for theory and the ability to transcribe shorthand notes from dictation; (3) to determine if the order in which the methods were taken had an effect on performance; (4) to assess student reaction to the methods to determine whether students were absent more during one method than during the other methods; and (5) to determine whether there was a significant correlation between liking a method and the ability to take dictation.

Hypotheses

The main question to be answered by this study was how did these four methods compare? In addition to seeking answers to this question, substudies were done to answer the following questions:

1. What was the correlation between being able to write shorthand correctly, as measured by a criterion test for theory, and the ability to take dictation of new material for each of the four practice methods?

2. What was the correlation between student attitude toward the practice method used and the success achieved in taking dictation?

The three primary research hypotheses, which were tested in the null form, were:

H₁: Students will develop greater skill in taking dictation of new material, as measured by the number of correct words on a criterion test; will have a lower rate of absenteeism; and will have a more accepting attitude when using the spot-writing-from-taped-dictation method than will be achieved by students using the reading approach method, the traditional homework method, or the writing shorthand from print method.

H₂: There is a significant correlation between the ability to write correct shorthand outlines as measured by a criterion test for theory and the ability to transcribe shorthand notes from dictation.

H₃: There is a significant correlation between liking a method and the score received in that method for words right.

Delimitations

The subjects in this study included only those students enrolled in the two classes of second semester first-year shorthand at Waverly High School in Lansing, Michigan.

This study was limited to in-class practice using the textbook and did not attempt to determine the value of any other type of in-class practice materials.

Limitations

The fact that only two classes were included in this study might tend to give results different from the results that might be obtained if more classes and more students were involved.

Furthermore, the fact that the first three-week segment contained three fewer days than the other three-week segments might tend to give results different from the results that might be obtained if each of the three-week segments contained the same number of days.

Definitions of Terms

The following terms are defined as used in this study:

Daily

The five meetings per week of each class. Both classes met, one in late morning and the other in early

afternoon, for a regular period of 55 minutes on the same five days of the week.

Dictation-Transcription Tests

The dictation for three minutes of business letters of new copy (material not used previously by these students). The rate of the dictation was announced before each letter. After recording the dictation in shorthand, the students then transcribed at a typewriter. The transcripts were then checked to determine the number of words that had been transcribed exactly as they had been dictated.

Gregg Shorthand, Diamond Jubilee Series

The 1963 edition of the shorthand system first published by John Robert Gregg in 1888. The Diamond Jubilee, DJ, Edition, is a further simplification of the 1929 and 1949 editions; the alphabet remained the same, but the number of the abbreviated word forms to be learned was lessened, and some abbreviating principles were eliminated. The 1974 edition of the textbook was used in this study.

In-class Practice

The practice of text material done by the students in the two classes during the regular class sessions. The

specific in-class practice methods students used to complete the assignment are explained in this section.

Instructor or Researcher

The person who taught the students in the two shorthand classes and who also conducted the study.

Method A

The method of in-class practice in which students studied by reading--and reading only--the assigned lesson as many times as they could.

Method B

The method of in-class practice in which students used the traditional homework approach in their shorthand study. They read each letter and article once and then wrote each once from self-dictation, writing in the usual (legible) manner.

Method C

The method of in-class practice in which students wrote shorthand from the longhand print contained in the student transcript accompanying the textbook.

Method D

The method of in-class practice in which students studied by listening to tapes of the text lessons prepared

especially for this experimental study by the researcher. While listening to the taped lesson, students watched their textbooks and spot-wrote the assignment.

Second Semester

The semester in which this study was conducted. The term also refers to the second semester of the two semester sequence of first-year shorthand offered at Waverly High School.

Shorthand I or First-Year Gregg Shorthand or Beginning Shorthand

The first year of shorthand, consisting of two semesters, offered at Waverly High School. Shorthand theory was covered in the first semester; the primary emphasis in the second semester was on the development of the ability to take dictation.

Spot-Writing

The form of practice in which students watched the shorthand plates of the copy being dictated while recording the dictation in one area or spot rather than line by line; legible copy was not produced. (A sample of spot-writing is given in Appendix A).

Taped Dictation

The dictation of the textbook lessons which was recorded on magnetic tapes by the researcher especially

for this experiment with the special permission of Gregg Division, McGraw-Hill, Inc., publishers, copyright owners, and proprietors of Gregg Shorthand. The connected material of the lessons was dictated at the speed forcing rates of 100 or 110 words per minute. The isolated, introductory words were dictated at the rate of approximately one word every two seconds. The dictated material came from the textbook, Gregg Dictation (1974 edition).

Theory Tests

The tests used in this study which consisted of 50 words selected at random from a list of words designed to check shorthand theory. These unrelated words were dictated at the rate of one word every six seconds; students wrote the words in shorthand. The tests were checked for the writing of shorthand according to Gregg theory.

Chapter 2

REVIEW OF RELATED LITERATURE

Four of the possible categories into which the performance of shorthand practice can be classified are: (1) Reading approach, (2) Traditional homework approach, (3) Shorthand from print approach, and (4) Recorded dictation approach.

This chapter presents a review of the literature relating to the four practice methods and discusses how they are related to the present study.

Reading Approach

Before discussing the reading approach as a method of shorthand practice in the second semester, it would seem appropriate to provide a background by discussing the reading approach as it pertains to the first semester.

Leslie

No doubt Leslie¹ is the most prominent proponent for the use of the reading approach during the first

¹Louis A. Leslie has long been recognized as an early authority of Gregg shorthand.

semester of first-year shorthand. The use of the reading approach in the first semester varies from a few days to approximately the first four weeks. At no time during the reading approach does the student write; the student only reads the lesson.²

Leslie believes the reading approach helps to compensate for individual differences in students in two ways:³

When the reading approach is used, it is possible to avoid the immediate split within the shorthand class that is generally caused by requiring from the beginner all the possible shorthand learning operations. Fifty years ago it was common practice not only to begin writing the first day of shorthand instruction but to require the learner to initiate new outlines by the application of rules just explained. Thus the learner on the first day (1) read shorthand, (2) learned verbalized generalizations about shorthand joinings, (3) applied those verbalized generalizations to the initiation of outlines for words, and (4) wrote the outlines he had constructed.

A procedure such as this immediately splits the class into slow learners and quick learners. Within a week, under this procedure, the slow learner will fall so far behind that he can never hope to keep up with the class. Some teachers have misunderstood this situation, thinking that the slow learner has fallen behind so far and so fast because the quick learners made progress so rapidly. That is not the case. Actually the quick learners were making progress very slowly and painfully; the slow learners simply could not make progress at all in that painful and difficult way.

²Louis A. Leslie, Methods of Teaching Gregg Shorthand (New York: McGraw-Hill Book Company, Inc., 1953), p. 274.

³Ibid., pp. 274-275.

The use of the reading approach, which requires no motor co-ordination in the early periods of shorthand instruction, enables the learner with poor co-ordination to learn to distinguish the shorthand characters without being hampered by his lack of co-ordination. After the characters have been learned visually, it is then easier even for the learner with poor co-ordination to write them.

All learners who have some opportunity to begin with the reading approach will have greater writing readiness when writing begins.

Thus the reading approach serves in two ways to compensate for individual differences: It keeps the members of the class closer together in the first days or weeks of shorthand instruction and it develops relatively greater writing readiness among the slow learners.

To some shorthand instructors, the most serious flaw with the extensive use of the reading approach in the first semester is the delay in writing. Students are eager and highly motivated to write shorthand the first day. Therefore, by not taking immediate advantage of their eagerness and motivation, a teacher may be contributing to "turning them off" to shorthand rather than "turning them on."

However, there are some positive reasons for using the reading approach. If one accepts the view that the reading approach should be used sparingly and that writing should be introduced as early as possible, a logical question would be why can't the reading approach be delayed until all of the theory has been presented or until the second semester? The second semester emphasizes the

developing and building of speed levels. In the present study, the reading approach was used in the second semester.

Mitchell

Mitchell pointed out that a critical area in shorthand methodology is reading of shorthand outlines. "To write shorthand, you must be able to read it. The faster a student can read, the faster the student can be expected to write."⁴

The reading approach provides the student with opportunities for reading practice which in turn helps him to develop his writing skill.

Osborn study⁵

In her study, Osborn found a relationship between the shorthand reading rate and ability to write shorthand from dictation as measured by the number of actual words students were able to transcribe from dictation tests of various speeds. All students took the same set of tests, each dictated at a different rate, from 60 to 100 words

⁴"Shorthand--Perspective, Opinion and Dialogue," op. cit., p. 47.

⁵Dolores J. Osborn, "Methods of Teaching Shorthand Symbol Reading and the Effect of Shorthand Reading Skill on Recording Dictation," Business Education Forum 26 (October, 1971), 48.

a minute. Osborn reported that "students transcribed a similar number of words on all dictation tests regardless of the rate of dictation."⁶

Osborn's study is of particular interest to the present study because similar procedures were used; namely, students were given dictation tests at varying speeds and were asked to transcribe one of the speeds. Students were then evaluated on the number of correctly transcribed words.

Traditional Homework Approach

In the first semester of beginning shorthand, teachers use basically one of two teaching approaches. They use either the language-arts (reading) approach or the science-type (writing) approach.

The language-arts approach or reading approach is also known as the "functional approach." As was previously stated, students using the reading approach do not do any writing for the first few weeks; rather, they read during that time.

On the other hand, the science-type approach, commonly referred to as the "writing approach" starts the student writing within the first week (usually about Lesson 6). Some science-type teachers require students

⁶Ibid.

to copy the word lists in the lessons several times and give theory tests based on these word lists.

Regardless of whether the reading or writing approach is used during the first month, the homework practice method becomes standardized after the first month. This standard practice method is known as the "traditional method of doing homework" and is faithfully followed by most shorthand teachers in the first, second, third, and fourth semesters of shorthand instruction with only slight modifications. Basically, the traditional method of doing homework asks the student to:

Make one complete copy of all the words in the word list. Do not copy the longhand, just the shorthand.

Read the connected matter in shorthand once aloud. Make one complete copy of the connected matter, after reading it. As you write each word, say it aloud.⁷

The only modifications to the traditional method of doing homework have to do with how many letters in the reading and writing practice to assign. The language-arts teacher believes in the extensive copying of many letters, while the science-type teacher believes more in the intensive practice on a few letters. Regardless of how many letters are assigned, the traditional method of doing homework remains in tact--read the lesson and then copy it.

⁷Leslie, op. cit., p. 62.

Toulouse study⁸

Toulouse compared the effects of the reading approach versus the writing approach to shorthand homework. Each group spent one hour doing their homework. A comparison of computed t-scores for the groups was made for each of the 97 tests given during the one-year period. Only 7 percent of the 97 computed t-scores were significant at the .05 confidence interval. The remaining 93 percent of the computed t-scores was not significant at the .05 confidence interval.

Toulouse concluded that regardless of the method used in doing homework, both groups were approximately equal in all respects of shorthand achievement. The difference between the two groups on brief-form tests, vocabulary theory tests, and transcription tests were not significant.

Toulouse's study differed from the present study in the amount of time spent on the practice methods and where the practice was done--60 minutes out of class in the Toulouse study as compared to 20 minutes in class in this study. The two studies were similar in that both compared

⁸Ronald L. Toulouse, "The Reading Approach Versus the Writing Approach to Shorthand Homework," Business Education Forum 27 (October, 1972), 51.

the reading approach with the traditional approach on theory tests and transcription tests.

Toulouse and Osborn demonstrated that it is possible for a shorthand practice method which places heavy emphasis on the reading of shorthand plate material to be effective.

Print-Into-Shorthand Approach

The print-into-shorthand approach of doing homework involves the student writing shorthand outlines from the words in the transcript which accompanies the textbook. The concern is whether writing shorthand from the printed words is harmful to the shorthand student.

Leslie

Leslie spoke for opponents of the print-into-shorthand method when he said that many teachers assign practice by which the student writes shorthand from the printed transcript. These teachers believe that such practice provides the student with an opportunity to construct shorthand outlines for new words and that this is good training for taking dictation because during the dictation, the student must construct shorthand outlines for new words. While this seems like a valid deduction, it may be false.

According to Leslie, there are several differences between constructing shorthand outlines from the printed

transcript and constructing outlines from dictation. In one case, shorthand outlines are being constructed from a printed or visual stimulus; in the other case, they are being constructed from a spoken or auditory stimulus. Because the student is trying to learn how to construct outlines from the spoken stimulus, his outlines should be constructed from the spoken stimulus.⁹

Leslie's most strenuous objection to the use of the printed transcript lies in its being used for out-of-class practice. The student must work quickly when he is constructing shorthand outlines from the spoken stimulus of dictation. He does not have time to stop and think how to write an outline.

On the other hand, the student has time to stop and think how to write an outline when he is constructing outlines from the printed transcript. Because the student becomes accustomed to taking his time while constructing outlines from the printed transcript, he carries that method over to his dictation. The result may be a faltering, hesitating style of writing.

Leslie believes that if writing from dictation is to be effective, it must be a habit skill. Shorthand writing habits are best developed when copying from well-

⁹Leslie, op. cit., pp. 191-192.

written shorthand plates. Copying from well-written shorthand plates develops a writing style that does not have the hesitations that come with copying from the printed type.¹⁰

Lamb

Lamb questioned Leslie's objection to the student copying from the printer's type.

Just why students should hesitate so much if they are using the transcript of shorthand plates for this practice is a mystery to many teachers, for they (the students) may refer to the shorthand plates when in doubt as rapidly as they refer to the transcript when copying shorthand. Moreover, the fact that a student hesitates in his first practice in constructing outlines does not mean that she will form the habit of hesitating in constructing words. She has acquired real fluency in spelling outlines--that is, breaking outlines down into their component characters by sight--and now she needs a little time to do this by sound, and one aid is the printed key that the student can read aloud to herself as she writes the shorthand outlines, turning to the shorthand plates for help when necessary and then checking her notes with the shorthand plates to detect significant differences.¹¹

Waters study¹²

Waters study, involving intermediate college shorthand classes at Brigham Young University, compared the traditional homework procedure with programmed homework assignments.

¹⁰Ibid.

¹¹Marion M. Lamb, Your First Year of Teaching Shorthand and Transcription (2d ed.; Cincinnati: South-Western Publishing Company, 1961), p. 52.

¹²Waters, op. cit., p. 58.

The control group used the traditional method of doing homework approach. The students first read and then wrote the introductory words or phrases until they knew them well. Next, they read the letters in the text until they could read them fluently. They then copied the letters from the shorthand plates at least three times. Obviously, copying three times is a variation of the traditional method of doing homework.

The experimental group used a programmed method of preparing their homework. This method consisted of worksheets and Dictaprint, which involves writing shorthand from print. Each worksheet consisted of three lines: the first line contained the shorthand outlines; the second line revealed the longhand words for the shorthand outlines on line one; the third line enabled the student to write the shorthand outlines. This was done by covering the shorthand outlines on line one while constructing shorthand outlines from the printed words on line two. Line one could then be uncovered and a comparison could be made of the student's shorthand outlines on line three with the shorthand outlines on line one.¹³

Letters from the transcript accompanying the students' textbook were reproduced into the Dictaprint.

¹³Ibid., p. 54.

The Dictaprint sheets consisted of 8½ x 11 sheets of paper divided down the middle of the page with double-spaced horizontal lines. The student transcript was reproduced in print on every other line, leaving one line blank underneath the print for the student to write on. In this way, the student was able to dictate to himself while translating the printed words into shorthand.¹⁴

Waters found that, with scores significant at the .05 level, the achievement of the group using the programmed material was better than the group using the traditional homework method.¹⁵

The students using the traditional homework method spent significantly more time (.05 level) preparing their homework than did the students in the experimental group.¹⁶ Some of the students stated that the programmed homework method required too much time to prepare; the average time for all students in the experimental groups was 103 minutes per lesson.¹⁷

After reviewing Water's study, it could not be determined whether the students were reacting negatively to the programmed homework method or to the amount of time spent in preparing this type of homework. The present study differed from the Waters' study in two ways: (1) the

¹⁴Ibid., p. 57

¹⁵Ibid., p. 92.

¹⁶Ibid., p. 93.

¹⁷Ibid.

practice was done entirely in class, and (2) all of the students spent 20 minutes preparing their in-class practice, regardless of the method used.

Gregory study¹⁸

In the beginning high school shorthand classes, Gregory compared the transcript method of preparing shorthand homework with the traditional homework method. The transcript method involved writing shorthand from the printed words contained in the student transcript. While no significant differences were found between the groups in their ability to write brief form words from dictation or to apply shorthand theory in writing words, a difference was found in their ability to record a dictated letter. The students who had prepared their homework by the transcript method were able to record significantly better at the .05 level of probability than those students who had prepared homework by the traditional homework method.¹⁹

In the present study, the primary goal was the development of the ability to write into shorthand orally

¹⁸Darvel J. Gregory, "A Comparative Study of Two Methods of Writing Shorthand Homework" (Master's thesis, Utah State University, 1968), cited by Malcolm L. Lund, "An Experimental Study Comparing Three Methods For Student Out-of-Class Practice in Intermediate Collegiate Gregg Shorthand" (Ph.D. dissertation, Michigan State University, 1973), p. 33.

¹⁹Ibid.

dictated letters; the achievement was measured by the ability to transcribe these letters. The students in Gregory's study prepared their homework out of class; the students in this study prepared their homework in class.

Hayes Study²⁰

The problems in the Hayes study were to determine whether doing some of the shorthand homework by writing shorthand from print and whether exposure to a wider, more difficult vocabulary in shorthand homework practice would improve dictation skill more than doing homework consisting only of copying textbook shorthand plates.

Intermediate and community college shorthand classes throughout the United States provided 116 subjects for the experiment and 69 students for a replication of the experiment. Students in each class were randomly assigned to two of three treatments, which they followed for 31 class days. Group C did its homework by copying the shorthand plates of the textbook in the traditional manner; Group CPT copied half of the textbook plates and wrote the remainder of them from print. Group CP0 copied

²⁰Myrtle Ione Hayes, "Shorthand Homework Practice Under Attention-Focusing and Vocabulary-Expanding Conditions" (Ph.D. dissertation, University of Northern Colorado, 1971).

the same half of the textbook plates as did Group CPT but the other half of its homework consisted of writing shorthand from the print found in non-textbook materials.

A shorthand pretest and a vocabulary test served as covariates. The shorthand pretest and criterion post-test, consisting of the same four letters with reliability coefficients ranging from .86 to .92, were dictated on a magnetic tape at 80 wam. Scores were the number of actual words transcribed correctly. All tests of the fall term experiment revealed that over 50 percent of the time chance alone could have brought about any differences evidenced among the groups.

Precautions were taken to obtain better control and to insure that more typical intermediate shorthand students were subjects in the winter term replication. Testing for effects of the different materials in this replication showed that practice on non-textbook materials resulted in greater achievement in taking and transcribing dictation than did practice on textbook materials; the F ratio was 4.09 with a probability of .04 that chance alone would have resulted in an F ratio of this magnitude. However, the test for differences in practice methods revealed that chance alone could have accounted for the outcomes 89 percent of the time. Testing for overall mean differences resulted in an F of 2.79 with a probability of

an .067 that chance alone contributed to the differences. Therefore, Hayes concluded that writing homework from print is equally as good as that of copying shorthand plates.²¹

Studies by Waters, Gregory, and Hayes show that the print method of preparing shorthand practice can work.

Recorded Dictation

The use of shorthand laboratories for shorthand practice is desirable.

Lemaster

"In the past few years, audio learning labs have become a vital part of a great many shorthand programs."²²

Condon, Crank, Graves, Harken, and Jester

"While they 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."²³

²¹Ibid.

²²A. J. Lemaster, "Tuning in to Shorthand," Business Education World 54 (September-October, 1973), 26-27.

²³Arnold Condon, Doris H. Crank, Helen Graves, Mabel L. Harken, and Don Jester, The Selection and Use of Multiple-Channel Equipment in the Teaching of Shorthand, Monograph 121 (Cincinnati: South-Western Publishing Company, 1969), p. 25.

Hosler

Hosler believes that a student who writes shorthand from sound will be employing a more effective procedure for maximum shorthand skill growth than one who does his shorthand practice entirely by copying shorthand outlines from plate material.²⁴

VanDerveer

According to VanDerveer, the student who prepares his practice at 60 or less is bound to have trouble taking the material at 100 or better. Copying from book plates is more likely to be done at 60 or 70 at best; homework, therefore, becomes meaningless for real speed development. It merely helps develop vocabulary.²⁵

Mitchell

Copying letters in a steno pad is a worthwhile process if the student concentrates on what he is doing. If the teacher can provide the student with measured dictation, he must go through his thought processes to write shorthand. Beginning with Lesson 25, Mitchell's students take their homework from dictation. He provides

²⁴Ibid.

²⁵Ibid.

three different speeds which are gradually raised throughout the year so that the students are forced to move to higher speeds.²⁶

In the present study, the in-class practice method using the shorthand lab involved material dictated at 100 wpm during the first two weeks of each three-week segment. During the last week of the three-week segment, the dictation rate was raised to 110 wpm.

Pankhurst Study²⁷

Pankhurst compared the relationship between shorthand achievement and two plans of homework in shorthand.

The first method, the traditional homework method, required the students to read aloud once the reading and writing practice in the shorthand textbook. They then made one complete shorthand copy of the reading and writing practice, saying each word aloud as it was written. The students spent a minimum of 45 minutes per lesson and recopied the lesson if time remained.

The second homework method required students to read the entire lesson once. Next, the first letter from

²⁶William Mitchell, "A 'Maxi' Approach to Shorthand Teaching," Business Education Forum 25 (October, 1970), 13.

²⁷Barbara Elaine Pankhurst, "The Relationship Between Shorthand Achievement and Two Plans of Homework in Shorthand" (Ph.D. dissertation, North Texas State University, 1972).

the reading and writing practice was written in shorthand once from the dictation tape. The student then stopped the tape, opened her book and circled any incorrect outlines. The tape was replayed while the letter was written again until the student felt that she had done her best on the letter. The steps were then repeated for the remaining letters. A minimum of 45 minutes was spent on each lesson. If time permitted, the letters were written again. The taped dictation was performed outside of the class. Three-minute dictation tests were given to the students in the class at the end of the semester to measure their ability to transcribe dictation notes correctly.

Beginning Students.--Only 33 percent of the students in the beginning experimental group indicated that they liked the manner in which they were required to do their homework. A mild dislike was expressed by 45 percent of the students and a strong dislike was expressed by 22 percent of the students. The beginning students indicated that it was not the manner in which they did the homework that they actually disliked, but it was the inconvenience of going to the library. The inconvenience of having to go to the library in order to receive the taped dictation was eliminated in the present study; the taped dictation was taken entirely in the classroom.

Most of the students in Pankhurst's control group who prepared their homework in the traditional manner indicated that they liked or liked extremely well the manner in which they did homework. Only a few students expressed a mild dislike or indifference.

Intermediate Students.--One half of the students in the intermediate experimental group expressed a mild dislike for the manner in which they were required to do their homework, and two expressed a strong dislike.

The intermediate students thought that the method of preparing homework helped them increase their skill, but they disliked going to the library every day.

Slightly more than half of the students in the intermediate group who prepared their homework in the traditional manner indicated they either liked or liked extremely well their manner of doing homework. Most of the students in this group who expressed a dislike commented that they did not like the frequency of homework every night.

The students in the present study did not have homework outside of class; all of their homework practice was done in class, thus eliminating the complaint voiced by the students in the Pankhurst study of having to do outside practice every night.

Findings.--The intermediate groups were pretested at the beginning of the semester and posttested at the end of the semester. The beginning groups were given posttests only. The tests consisted of word-lists containing twenty-five words and two three-minute dictation tests. The dictation tests for beginning groups were given at 60 wpm and 80 wpm. The dictation tests for intermediate groups were given at 80 wpm and 100 wpm. The final mean word-list scores and the final mean dictation test scores at 60 wpm and 80 wpm for the experimental class and the beginning shorthand class were higher than for the control class. Analysis of the variance showed that this difference was not statistically significant at the .05 level; therefore, the null hypothesis that no difference between the mean test scores of the groups was accepted.²⁸

One might conclude that because the difference between the two methods of preparing out-of-class practice was not statistically significant, the added inconvenience of having to go to the library for the taped dictation could not be justified. However, if the taped dictation was given in class, such as in the present study, it could be justified as a method of preparing in-class shorthand practice.

²⁸Ibid.

Palmer, Powell, O'Connell,
and Hess

Studies by Palmer,²⁹ Powell,³⁰ O'Connell,³¹ and Hess³² revealed no significant differences have occurred in achievement of groups taught with the use of taped dictation and groups taught with the traditional teacher dictation in which dictation laboratories have been utilized.

However, on the basis of an analysis of students' responses to a questionnaire designed to obtain the reactions of students toward the use of the shorthand laboratory as a vehicle for providing dictation experience, Hess³³ found that students reacted favorably toward the shorthand laboratory when it was used only as a component of the total teaching method but reacted negatively to the use of the laboratory as the sole means for providing instruction. Students also indicated a favorable response toward the use of the shorthand laboratory as a vehicle for providing dictation materials to be written as a part of the homework assignment.

²⁹Joe M. Pullis, Methods of Shorthand Instruction: A Research Analysis, Monograph Number 126 (Cincinnati: South-Western Publishing Company, 1973), p. 60.

³⁰Ibid.

³¹Ibid.

³²Ibid.

³³Ibid., p. 61.

The shorthand laboratory in the present study was used only as a component of the total teaching method. When the students were not on the shorthand laboratory, they were taught by the teacher.

Russon

Russon³⁴ reported that Jones dictated the homework assignments on a Dictaphone disk at a speed about 20 words a minute faster than the student could take. The students took dictation from the disks but for additional help had their books opened to the lesson being dictated. If the speed of the dictation was too fast, the student could stop the machine and backspace if necessary. Students using the foot pedal method of practicing homework made remarkable progress.

While the students in the present study kept their books opened while they took the recorded dictation, they were not able to stop the dictation and back up to repeat the dictation. They compensated for this by writing in only one spot. However, the dictation was fast enough to force their dictation speed rate. Therefore, in the

³⁴Allien R. Russon, Methods of Teaching Shorthand, Monograph Number 119 (Cincinnati: South-Western Publishing Company, 1968), p. 23, citing Ellis Jones. Russon does not quote the source of the information from Jones.

present study, the spot-writing method took the place of letting the students stop, back up, and repeat the dictation.

Spot-Writing Approach

The type of recorded dictation method used in this study was the "spot-writing" or "scribble-writing" approach. The spot-writing method involved the students keeping their eyes on the shorthand outlines in their opened textbooks as they wrote shorthand from the recorded dictation at a speed forcing rate, all the while writing in one spot only. No attempt was made to write legible outlines.

Spot writing aids the students in three ways: "they see the correct outline, they verbalize the word (or at least they mentally verbalize it), and they make the muscular responses necessary for writing."³⁵

Osborn

Osborn³⁶ was concerned with as many senses as possible in learning shorthand. One group, the seeing group, prepared their lessons in the traditional homework method by reading the lesson once and then making a copy

³⁵Condon, Crank, Graves, Harken, and Jester, op. cit., p. 21.

³⁶Osborn, loc. cit.

of it. A second group listened to tapes of the letters in the lesson while they read along from the shorthand plates in the textbook; they were the seeing and hearing group. The third group read the lesson as they listened to tapes and scribble wrote as they read and listened; this was the seeing, hearing, and feeling group. The tapes were dictated at 90 words a minute. On four of the six dictation tests, the means were higher for the third group--the group using the most senses in the learning process.³⁷

The spot-writing-from-taped dictation group in the present study differed from the seeing, hearing, and feeling group in Osborn's study in the rate of dictation from the recorded material. The students in the present study spot wrote from material dictated at 100 during the first two weeks and 110 during the final week of the three-week segment; the students in Osborn's study scribble wrote at 90 wpm only.

Lund Study³⁸

Using students in intermediate collegiate shorthand, Lund compared three methods of preparing homework.

³⁷ Ibid.

³⁸ Malcolm E. Lund, "An Experimental Study Comparing Three Methods for Student Out-of-Class Practice in Intermediate Collegiate Gregg Shorthand" (Ph.D. dissertation, Michigan State University, 1973).

The three methods were the traditional homework method, the reading only method, and the spot-writing-from-taped dictation while the books were kept opened.

Although Lund concluded that it was impossible to state that one method was better than the others, his findings are important. The students who used the spot-writing-from-taped dictation studied an average of 11 minutes daily; the traditional method people averaged 31 minutes; and the students who read the lesson averaged 29 minutes.³⁹ Therefore, while the students who used the spot-writing method did not do any better than the students using the other methods, by the same token they didn't do any worse, while spending less than one half of the time on their homework as compared to the students using the other methods. In the present study, all of the students spent 20 minutes practicing shorthand regardless of the method used.

At the completion of the experiment, Lund asked his students their opinions of the practice methods to which they had been assigned.

Most students indicated that the method of study used either contributed very little or made no difference toward the shorthand skill they acquired during the quarter. One-third of

³⁹Ibid., p. 119.

those who reported using the traditional method (A) believed their method had contributed greatly to their skill; none in the reading group (B) did so; and only one of those using the spot-writing-from-taped dictation (C) believed it was valuable.⁴⁰

As was previously stated, Lund reported that it was impossible to state that one method was better than the others. Consequently, Lund concluded that "students seem able to achieve even though they do not like the method of study being used."⁴¹

An important difference between the Lund study and the present study had to do with the methods used. In the Lund study, the students were randomly divided into groups; each group used only one of the three methods. In the present study, each student used each of the four methods, spending three weeks on each method.

Summary

A review of the related literature reveals that four of the possible categories into which the performance of shorthand practice can be classified are: (1) Reading approach, (2) Traditional homework approach, (3) Shorthand from print approach, and (4) Recorded dictation approach.

⁴⁰Ibid., p. 109.

⁴¹Ibid., p. 109.

Reading Approach

Educators are divided on the use of the reading approach in shorthand. Some teachers, most notably Leslie, stated that the extensive use of the reading approach during the first semester results in the class being kept together during the first few weeks of the semester; and the slower learner will develop a better writing readiness.

Others questioned the use of the reading approach and pointed out that students come to beginning shorthand eager to write. This initial enthusiasm for shorthand may be lost if the introduction of writing is delayed.

It would seem, therefore, that the first semester may not be the most logical place for the use of the reading approach. Perhaps the second semester would be a better time to use the reading approach. The second semester places heavy emphasis on the building of the student's shorthand dictation rate; and as Mitchell commented, the faster a student can read, the faster she will be able to write.

Traditional Homework Approach

The writing approach, also known as the science-type approach, starts the student writing within the first week (usually about Lesson 6).

Regardless of whether the reading or writing approach is used during the first month of shorthand instruction, the homework practice method becomes standardized after the first month. This standard practice method is known as the "traditional method of doing homework" and asks the student to read the lesson and then to copy it.

However, both Osborn's study comparing shorthand reading rates and the ability to write from dictation and Toulouse's study comparing the effects of the reading approach versus the writing approach to shorthand practice demonstrated that it is possible for a shorthand method which places heavy emphasis on the reading of shorthand plate material to be effective.

Print into Shorthand Approach

While many teachers were appalled at writing shorthand from the printed word as a means of practicing shorthand claiming that the method results in the student developing a hesitating, faltering style of writing, studies by Waters, Gregory, and Hayes concluded that the print method of preparing shorthand practice is a workable method.

Recorded Dictation Approach

The shorthand laboratory is an important part of many shorthand programs. However, studies by Palmer,

Powell, O'Connell, and Hess revealed no significant differences have occurred in achievement of groups taught with the use of taped dictation and groups taught with the traditional teacher dictation in which dictation laboratories have been used. On the other hand, Hess pointed out that students reacted favorably to the shorthand laboratory when it was used as a component rather than the sole means of the shorthand instructional program. Therefore, it would seem that the role of the shorthand laboratory occupies one part of the total shorthand practice program.

Spot-Writing Approach.--Some teachers have used the shorthand laboratory for the spot-writing or scribble-writing approach to preparing shorthand practice. Osborn discovered that the students using the scribble-writing approach did better than the students who used the traditional or reading approaches.

Lund found that while the students using the spot-writing approach did not do any better than the students using the reading and traditional homework approaches, the students who used the spot-writing approach spent half as much time preparing their shorthand practice as did the students who used the other approaches and did just as well.

The present study will investigate supervised in-class shorthand practice comparing the four methods just discussed; namely, the reading approach, the traditional homework approach, the shorthand-from-print approach, and the spot-writing-from-taped dictation approach during the second semester of the first year of Gregg shorthand.

Chapter 3

METHODS AND PROCEDURES

Four methods of doing supervised in-class practice in the second semester of first-year high school Gregg shorthand classes were compared in this study. The procedures that were used in the study are discussed in the following order: (1) General Procedures, (2) The Sample, (3) Classroom Procedures, (4) Evaluation Measures and Procedures, (5) Design, (6) Hypotheses, (7) Analysis, and (8) Summary.

General Procedures

The classes used in this study were the two classes of second semester first-year Gregg shorthand taught at Waverly High School during the second semester, 1975. The two classes were taught by the same teacher, the researcher, as a control of the teacher variable. The students in the two classes had also received their theory training the previous semester from the same teacher, the researcher.

Each student spent three weeks working on each of the four in-class supervised practice methods. It was

decided that it would be better to end one of the three week segments on the day that students were to be dismissed for spring vacation. Therefore, it was necessary to start the experiment at the beginning of the third week of the second semester rather than during the first week of the new semester.

Each of the two classes had approximately the same number of students enrolled. The morning class contained 21 students; the afternoon class contained 22 students.

Each three-week segment was designed to contain fifteen class meetings. The last day of each three-week segment was spent on dictation-transcription tests. However, due to circumstances beyond the control of the researcher, the first three-week segment contained three fewer days than the other three-week segments. Classes were not held during those three days due to an ice storm on the day that the experiment was to begin and parent-teacher conferences on the other two days. Therefore, the number of class days in the experiment totaled 57 instead of 60 as originally planned.

The review of the related research and literature was conducted using the library at Michigan State University. The primary sources checked for related material were the Business Education Index, the Education Index,

and the Shorthand-Secretarial Research Index by Harves Rahe, a complete list of research studies in the training and work of stenographers and secretaries from 1891 to 1965. The services of University Microfilms in Ann Arbor, Michigan, were obtained for a check of doctoral dissertations. Their data is comprised of the majority of all dissertations published since 1938, which is the entire Dissertation Abstracts file. The service used is known as DATRIX; the search included all the material on file up to December, 1974. All dissertations with the word shorthand in the titles were included in the printout.

The Sample

All students enrolled at Waverly High School in the second semester, 1975, who had the necessary prerequisites for first-year Gregg shorthand constituted the population.

The sample used consisted of all of the students who enrolled in the two first-year Gregg shorthand classes taught during the second semester.

None of the students were aware of the experiment until the pretests were given a few days prior to the start of the experiment.

Before the classes met, a table of random digits was used to randomly assign each student to one of the four in-class supervised shorthand practice methods.

The entire sample was composed of girls whose ages ranged from 15 to 18 years. The mean age was 16.9. One of the students was a sophomore, 29 were juniors, and 13 were seniors.

The students enrolled in the second semester shorthand classes had identical shorthand backgrounds--one semester of theory taken the previous semester and taught by the same teacher, the researcher.

On the first day of the experiment, there were 43 students enrolled in the two classes. At the end of the experiment, the scores of 30 students were used in the final analysis. Two of the students had taken two-week vacations in Florida during the semester; therefore, their scores were not reported in the final analysis. The scores for eleven other students were not considered in the final analysis because those students were absent on the days that the theory and/or dictation-transcription tests were given.

Classroom Procedures

As a control of the variables of teacher and classroom activities, the researcher taught both classes following the same lesson plans. The teacher used the same letters and the same skill building techniques in both classes when the students were not working on one of the four in-class shorthand practice methods.

The textbook used in the classes was Gregg Dictation, Diamond Jubilee Series (1974 edition) by Charles E. Zoubek. In addition, the Student's Transcript of Gregg Dictation was used by all of the students except those students working with the teacher-prepared tapes of the assigned lessons (Method D). The first 53 lessons were used in the experiment; the lessons were covered at the rate of one new lesson a day during the experiment.

Each class met on Monday, Tuesday, Wednesday, Thursday, and Friday for a regular period of 55 minutes. The first class met in the morning from 10:10 until 11:05, and the second class met in the afternoon from 1:00 until 1:55. Each class was to have met for 60 class periods. However, as previously pointed out, three days were lost during the first three-week segment of the experiment due to an ice storm and parent-teacher conferences.

Both of the classes were taught in the same room. The room was equipped with electric typewriters, a four channel cassette console, individual headsets, and individual desk units with student control of channel selection.

Attendance records were kept for each of the three-week segments.

Four methods of doing in-class supervised textbook shorthand practice in the second semester of first-year Gregg shorthand were compared in this study.

At the beginning of the experiment, students were randomly assigned to one of the practice methods. However, at the completion of the experiment, each student had practiced each of the four methods, spending twenty minutes a day for three weeks on a method.

Method A--the reading approach--had the student read the lesson as many times as she could to herself. Occasional words of interest, as determined by the student, could be written in the air; if the student believed it necessary, she could write these occasional words on paper.

Method B--the traditional homework methods or self-dictation method--asked the student to read the first letter once after which she wrote that letter once from self-dictation; the student then read the second letter once and wrote the second letter once; she then continued on in a similar fashion with the remainder of the letters. If she still had time after she finished the lesson, she was asked to repeat the procedures from the beginning of the lesson.

Method C--the writing shorthand from print (long-hand)--required the student to write the lesson in shorthand from the transcript accompanying the textbook without having first read or copied the shorthand plates.

Method D--the spot-writing-from-taped-dictation method--had the student write the day's lesson without

having first read or written the lesson. Special tapes were prepared by the researcher of each lesson after receiving permission to do so from Gregg Division, McGraw-Hill, Inc., publishers, copyright owners, and proprietors of Gregg Shorthand. Lesson 1-53 from Gregg Dictation, Diamond Jubilee Series (1974 edition) were used in this study and were recorded on cassettes. Each tape consisted of the day's lesson plus one or more review lessons. The introductory words in the current lesson were dictated at the rate of one word every two seconds, and the reading and writing practice material was dictated at the rate of 100 words per minute with a 15-second pause between letters for the first two weeks of each three-week segment; during the third week of each three-week segment, the reading and writing practice material was dictated at the rate of 110 words per minute. The student did not attempt to write legible notes or line for line. Instead, the writing for a given letter was done in one spot while the student kept her eyes on the textbook material. Appendix A is a sample of a lesson done by a student. The dictation rates forced the student to write at faster speeds than she was capable of writing comfortably.

The textbooks were kept in the shorthand classroom; students were not allowed to check out books for additional practice outside of class.

Evaluation Measures and Procedures

Dictation-transcription tests and theory tests were given to measure the shorthand skill attained during the experiment. While the primary purpose of the second semester of first-year Gregg shorthand is the development of dictation-taking ability, the theory tests were given to check the relationship between the ability to take dictation and the ability to write shorthand according to Gregg theory and to provide a measure for assessing the effect of spot-writing on the ability to write correct shorthand.

A theory test and a dictation-transcription test were given at the beginning of the experiment, half way through the experiment (at the end of the second three weeks), and at the end of the experiment. The tests came from Gregg Tests and Awards 1974-75.

For the theory tests, the names of the months were written on pieces of paper and placed in a small box. Then, one piece of paper was drawn for the pretest, another for the second test, and another for the posttest. The theory tests given consisted of 50 words selected from the 100 words available in each test. A coin was flipped for each test to determine whether the odd or even numbered words would be dictated. For the pretest, even words were used; for the second test, odd words were used; and for the posttest, even words were used. The

pretest was from the March-April test; the second test was from the May-June test; and the posttest was from the September-October test (Appendix B). To assure uniformity in dictation, the theory tests were dictated onto cassettes. The words for each test were dictated at the rate of one word every six seconds, consuming a total of five minutes for each test.

The theory pretest was given two days before the experiment began; the second theory test was given half way through the experiment (at the end of the second three weeks); and the theory posttest was given at the completion of the experiment (at the end of the fourth three weeks).

Odd and even speeds are dictated at Waverly High School. For this reason, Speed Dictation with Previews in Gregg Shorthand by Charles E. Zoubek and published by Gregg Division of McGraw-Hill Book Company was used solely throughout this experiment for the dictation-transcription tests. The letters for each dictation-transcription test were carefully chosen so that the syllable intensity for each letter was as equal as possible. The syllable intensity ranged from 1.32 syllables per word for the letters used in the pretest to 1.45 syllables per word for the letters used in the posttest. No attempt was made to equate the difficulty of the words in the dictation copy other than by this syllabic intensity.

To assure uniformity in dictation, the researcher dictated onto cassettes the letters for all of the tests. A one-minute warm-up at 100 words per minute was dictated at the beginning of each dictation-transcription test. No preview was given for any of the tests. Each test was three minutes long. For the pretest and for the test given at the end of the first three weeks, letters were dictated at 80, 70, 60, and 50 words per minute in that order. For the dictation-transcription tests given at the end of the second, third, and fourth three weeks, letters at 90 words per minute were added because it was felt that some of the students might be ready for that speed. Students were asked to write all of the takes and transcribe the one from which they believed they could transcribe the most correct words. Notes for all of the takes recorded were handed in along with the one letter transcribed. All transcripts were typed. Students were told that these five dictation-transcription tests would not be graded; other dictation-transcription tests were given for that purpose after the experiment was completed. Dictation-transcription tests for grading purposes were not given during the experiment.

Students were allowed a maximum of thirty minutes¹ to transcribe the letters they wished. The letters were checked for the number of words correctly transcribed. To avoid having to guess whether the right word was

intended, all misspelled words and typographical errors were considered wrong. Paragraphing and punctuation were not counted.

The dictation-transcription pretest was given two days prior to the start of the experiment; the second test was given at the end of the first three weeks; the third test was given at the end of the second three weeks; the fourth test was given at the end of the third three weeks; and the fifth test (the posttest) was given at the end of the fourth three weeks.

The dictation-transcription tests chosen from Speed Dictation with Previews in Gregg Shorthand are presented in Appendix C.

At the completion of the experiment, each student completed a signed opinionnaire stating her opinions of each of the in-class supervised shorthand practice methods. Appendix D is a sample of the opinionnaire used at the end of the experiment.

Design

The experiment was designed so that each student received the treatment consisting of each of the four experimental in-class supervised shorthand practice methods.

<u>Group</u>	<u>1st 3 Weeks</u>	<u>2nd 3 Weeks</u>	<u>3rd 3 Weeks</u>	<u>4th 3 Weeks</u>
1	Method A	Method B	Method C	Method D
2	Method D	Method C	Method B	Method A
3	Method C	Method A	Method D	Method B
4	Method B	Method D	Method A	Method C

Figure 3.1

Design Used in Experiment

It should be noted that no two methods follow each other in an identical order.

Level of Significance

The .05 level of significance was used in this study.

Hypotheses

As stated in Chapter 1, the three primary research hypotheses, which were tested in the null form, were:

H₁: Students will develop greater skill in taking dictation of new material, as measured by the number of correct words on a criterion test; will have a lower rate of absenteeism; and will have a more accepting attitude when using the spot-writing-from-taped-dictation method than will be achieved by students using the reading approach method, the traditional homework method, or the writing shorthand from print method.

H₂: There is a significant correlation between the ability to write correct shorthand outlines as measured by a criterion test for theory and the ability to transcribe shorthand notes from dictation.

H₃: There is a significant correlation between liking a method and the score received in that method for words right.

Chapter 4

FINDINGS

Hypotheses Tested

The three primary research hypotheses, which were tested in the null form, were:

H₁: Students will develop greater skill in taking dictation of new material, as measured by the number of correct words on a criterion test; will have a lower rate of absenteeism; and will have a more accepting attitude when using the spot-writing-from-taped-dictation method than will be achieved by students using the reading approach method, the traditional homework method, or the writing shorthand from print method.

H₂: There is a significant correlation between the ability to write correct shorthand outlines as measured by a criterion test for theory and the ability to transcribe shorthand notes from dictation.

H₃: There is a significant correlation between liking a method and the score received in that method for words right.

The multivariate analysis will be presented in detail before the correlations are discussed.

Statement of Hypothesis

H₁: Students will develop greater skill in taking dictation of new material, as measured by the number of correct words on a criterion test; will have a lower rate of absenteeism; and will have a more accepting attitude when using the spot-writing-from-taped dictation method than will be achieved by students using the reading approach method, the traditional homework method, or the writing shorthand from print method.

Relationship of Hypothesis to Design

As was discussed previously, the design for this study involved the sequential administration of each of the four treatment methods. To control for the order of administration, four groups of subjects were administered the sequence of four treatment methods in counter-balanced order. Figure 4.1 illustrates this design.

<u>Group</u>	<u>1st 3 Weeks</u>	<u>2nd 3 Weeks</u>	<u>3rd 3 Weeks</u>	<u>4th 3 Weeks</u>
1	R	T	P	S
2	S	P	T	R
3	P	R	S	T
4	T	S	R	P

Figure 4.1

Experimental Design for Test of Treatment Methods*

*R refers to reading approach method; T refers to the traditional homework method; P refers to the shorthand from print method; and S refers to the spot-writing-from-taped-dictation method.

Method of Analysis

In this design, the comparison of treatment methods involved the comparison of repeated measures at four points in time on the same set of individuals; therefore, multivariate analysis of covariance for repeated measures design was chosen as the statistical test.

A dictation-transcription pretest was used to measure the students' ability to transcribe dictation prior to the administration of any of the treatments. Scores from this test were used as a covariate in a multivariate analysis of covariance to equate students for initial differences in ability. (Appendix E).

In the multivariate procedure, contrasts among the four treatment methods were calculated and entered as variables in a multivariate test of the grand mean. Specifically, three separate difference scores were created:

$$\text{DIFF 1: } \frac{R-T+P+S}{3}$$

$$\text{DIFF 2: } \frac{T-P+S}{2}$$

$$\text{DIFF 3: } P-S$$

The multivariate test involved tested a hypothesis that the mean of each of these three variables was simultaneously equal to zero:

$$[\bar{X}_{\text{DIFF 1}}=0; \bar{X}_{\text{DIFF 2}}=0; \bar{X}_{\text{DIFF 3}}=0].$$

The results of this analysis follow in two stages: (1) the exploration of the worth of the dictation-transcription pretest as a covariate and (2) the test of the hypothesis for each of the dependent variables of interest; namely, words right, days absent, and attitude.

Analysis of Covariate

As shown in Table 4.1, the percent of variation accounted for in the contrast variables for each of the three dependent variables was generally quite low--ranging from .05 percent to 13.96 percent. The analysis of variance conducted to test the significance of the reduction in mean square error resulting from the introduction of the covariate (dictation-transcription pretest) was also nonsignificant.

It was concluded that initial ability to transcribe dictation is essentially unrelated to the difference in performance from one treatment method to the next on any of the three dependent variables: words right, days absent, or attitude. The consequences of this are that the multivariate analysis of covariance used to test the hypothesis of interest had been made slightly more conservative by having had the degrees of freedom for the mean square error reduced by one without an equal reduction in the magnitude of the mean square error.

TABLE 4.1

Effect of Covariate Dictation-Transcription Pretest on
Contrast Variables DIFF's for Dependent Variables
Words Right, Days Absent, and Attitudes

	Words Right			Days Absent			Attitudes		
	DIFF 1	DIFF 2	DIFF 3	DIFF 1	DIFF 2	DIFF 3	DIFF 1	DIFF 2	DIFF 3
Correlation									
Zero Order	.3736	.0542	-.1072	.1286	.1659	-.0434	.3545	.0232	.2189
Mult r	.3736	.0454	.1072	.1286	.1659	.0434	.3545	.0232	.2189
Mult r^2	.1396	.0029	.0115	.0166	.0275	.0019	.1258	.0005	.0480
Percent Variation Accounted For	13.96	.29	1.15	1.66	2.75	.19	12.58	.05	4.80
F	4.0565	.0738	.2905	.3457	.6709	.0001	3.60	.01	1.26
p	.05 (S)	.78 (NS)	.59 (NS)	.56 (NS)	.42 (NS)	.99 (NS)	.07 (NS)	.91 (NS)	.27 (NS)
MS Error Before Covariate Introduced	307.04	265.80	196.73	.67	1.33	.75	.78	1.12	.76
MS Error After Covariate Introduced	274.75	275.82	202.26	.69	1.35	.78	.71	1.16	.75

Analysis of Dependent Variables

The results of the three multivariate analyses of covariance appear in Table 4.2. No difference between the treatment groups were observed for any of the three dependent measures of interest. In other words, no one method was shown to be better than any of the other three methods.

TABLE 4.2

Multivariate Analysis of Covariance of DIFF Scores
Between Methods for Words Right, Days Absent,
and Attitudes

Source of Variation	df	Multivariate F	p =
Words Right	3;23	1.5990	.2170 (NS)
Days Absent	3;23	.2070	.8905 (NS)
Attitudes	3;23	1.4831	.2455 (NS)

Interpretation of Results

The hypothesis cannot be supported that students will develop greater skill in taking dictation of new material, as measured by the number of correct words on a criterion test; will have a lower rate of absenteeism; and will have a more accepting attitude when using the spot-writing-from-taped-dictation method than will be achieved by students using the reading approach method,

the traditional homework method, or the writing shorthand from print method.

Relationship of Subhypotheses to Design

After the research data was processed, the researcher found two other worthwhile findings that added to the depth of the study. Because of insufficient theory on which to develop primary hypotheses, they were not among the original hypotheses and are included here in subhypotheses format.

Since, as illustrated in Figure 4.1, the experimental design involved four replications--four groups of students were administered the treatment methods in counter-balanced order--two subhypotheses were tested to illuminate the findings of the main hypothesis test. These were a groups effect hypothesis and a groups by methods interaction hypothesis.

Statement of First Subhypothesis

Although the students were randomly assigned to groups, a test was made to determine whether the groups differed in average performance across the series of four treatment methods--irrespective of the order in which the treatment methods were given. The groups effect null hypothesis was stated $H_0: \bar{X}_1. = \bar{X}_2. = \bar{X}_3. = \bar{X}_4.$

Method of Analysis.--To test this hypothesis, students' scores for each of the three dependent variables --words right, days absent, and attitudes--were summed across the four treatment methods; and analysis of covariance was used to test whether the groups differed on any of the three summed variables.

The results of this analysis are presented in two stages: (1) an examination of the extent to which the covariate contributed to the analysis of this data, and (2) the results of the analysis of covariance.

Analysis of Covariate.--As shown in Table 4.3, the percent of variation accounted for varied across the three dependent variables of interest--ranging from a high of 77.3 percent to a low of .68 percent.

The analysis of covariance tested the extent to which the introduction of the covariate reduced the mean square error. The results revealed that only in the case of the dependent variable words right was the reduction of error variance sufficiently large enough to reject the null hypothesis of no appreciable reduction as shown in Table 4.1.

Thus, in the case of the dependent variable words right, the introduction of the covariate resulted in increased precision, while in the case of the other two dependent variables, days absent and attitudes, the

TABLE 4.3

Effect of Covariate Dictation-Transcription Pretest
on Contrast Variable SUM for Dependent Variables
Words Right, Days Absent, and Attitudes

	Words Right	Days Absent	Attitudes
Correlation			
Zero Order	.88	.36	.08
Mult r	.88	.36	.08
Mult r^2	.7735	12.82	.0068
Percent Variation Accounted for	77.35	12.82	.68
F	85.35	3.6748	.1713
p	.0001 (S)	.0668 (NS)	.6825 (NS)
MS error before covariate intro.	4162.68	5.13	1.16
MS error after covariate intro.	988.78	4.65	1.20

introduction of the covariate resulted in making the subsequent analysis more conservative by virtue of diminishing the degrees of freedom by one without an equal reduction in the mean square error.

Analysis of Dependent Variables.--The results of the three analyses of variance appear below in Table 4.4.

TABLE 4.4

Difference Between Group Means on Variable SUM
for Words Right, Days Absent, and Attitudes

	Between		Within				
	MS	Error df	MS	Error df	F	p	
Words Right	169.33	3	988.78	25	.1726	.9139	(NS)
Days Absent	2.71	3	4.65	25	.5825	.6321	(NS)
Attitudes	.55	3	1.20	25	.4535	.7172	(NS)

1. Words Right: No significant difference was found between groups in the total number of words correctly transcribed ($F=.1726$; $df=3,25$; $p=.9139$). Appendix F shows each group's mean number of words right across the four treatment methods.

2. Days Absent: No significant difference was found between groups in the total number of days absent ($F=.5825$; $df=3,25$; $p=.6321$). Appendix G shows each group's mean number of days absent across the four treatment methods.

3. Attitudes: No significant difference was found between groups in their attitudes toward the treatment methods ($F=.4535$; $df=3,25$; $p=.7172$). Appendix H shows each group's mean scores of attitudes across the four treatment methods.

Interpretation of Results.--Because students and treatment methods were randomly assigned, the small obtained F ratios were evidence that the order in which the treatment methods were given to students was unimportant. Furthermore, students scored equally well in all four of the groups; on the average, students recorded the same number of words right, days absent, and attitudes. Therefore, the hypothesis that there would be a difference between the groups could not be supported.

Statement of Second Subhypothesis

Although groups were randomly assigned to the order of methods, particular orders may have had a differential effect of their own. Therefore, a test was made to determine the groups by methods interaction. The null hypothesis was written $H_0: [\bar{X}\bar{X}\bar{X}] = [\bar{X}\bar{X}\bar{X}] = [\bar{X}\bar{X}\bar{X}] = [\bar{X}\bar{X}\bar{X}]$.

Method of Analysis.--To test this hypothesis, the set of DIFF scores for each group for each of the three dependent variables--words right, days absent, and attitude--across the four treatment methods was used as the data.

Analysis of Covariate.--As reported earlier in Table 4.1 on page 62, the percent of variation accounted for in the contrast variables (DIFF's) for each of the dependent variables was quite low--ranging from .05

percent to 13.96 percent. Furthermore, the analysis of covariance conducted to test the significance of the reduction in mean square error resulting from the introduction of the dictation-transcription pretest covariate was also nonsignificant.

Analysis of Dependent Variables.--The results of the three multivariate analyses of covariance are given in Table 4.5.

TABLE 4.5

Group Sets of DIFF Scores for Dependent Variables
Words Right, Days Absent, and Attitudes
Across Treatment Methods

Source	df	Multivariate F	p
Words Right	9;56.13	1.4463	.1911 (NS)
Days Absent	9;56.13	2.5368	.0162 (S)
Attitudes	9;56.13	1.4604	.1855 (NS)

The groups by methods interaction for words right and attitude showed no significant differences (for words right: $df=9;56.13$, Multivariate $F=1.4463$, and $p=.1911$; for attitude: $df=9;56.13$, Multivariate $F=1.4604$, and $p=.1855$). However, for groups by methods interaction for days absent was significant ($df=9;56.13$, Multivariate $F=2.5386$, and $p=.0162$).

The components of the multivariate test--DIFF 1, DIFF 2, and DIFF 3--were then studied to determine each group's days absent for DIFF 1, DIFF 2, and DIFF 3. This was done by doing a univariate analysis of covariance for each treatment contrast separately as shown in Figure 4.2.

	DIFF 1		DIFF 2		DIFF 3
Group 1		Group 1		Group 1	
Group 2		Group 2		Group 2	
Group 3		Group 3		Group 3	
Group 4		Group 4		Group 4	

FIGURE 4.2

Univariate Analysis of Covariance for
Each Treatment Contrast Separately

The data for DIFF 1 resulted from subtracting the average of each group's days absent score on the traditional, shorthand from print, and spot-writing methods from the reading method ($R - \frac{T + P + S}{3}$); for DIFF 2, ($T - \frac{P + S}{2}$); and for DIFF 3, ($P - S$). The results of that data are given in Table 4.6.

Table 4.6 reveals that the difference between groups for days absent was significant ($p=.04$) for the reading method.

TABLE 4.6

Group Variable Tests for Days Absent for
DIFF 1, DIFF 2, DIFF 3

DIFF 1	DIFF 2	DIFF 3
df=3;25 F= 3.25 p=.04 (S)	df=3;25 F=1.49 p=.24 (NS)	df=3;25 F=2.65 p=.07 (NS)

Interpretation of Results.--As the difference between the groups for days absent for the reading approach method was significant ($p=.04$), the hypothesis that there would be a difference between groups by methods interaction was supported.

Difference Between Differences Among Order of Methods.--Because the difference between the groups for days absent was significant, the data was further studied to determine if there was a difference between the differences among the methods when one methods order was contrasted with the other methods orders.

Appendix G shows each group's average days absence during each method as well as each group's average days absence over all of the methods. The bottom row of figures shows the average number of days absent for each method for all groups.

Table 4.7 also reports each group's average number of days absent during each of the methods. In

addition, the last column shows each group's average number of days absent for the traditional homework, shorthand from print, and spot-writing methods. The last column permits a comparison of each group's average number of days absent during the reading method with the average number of days absent during the traditional homework, shorthand from print, and spot-writing methods.

TABLE 4.7

Comparison of Groups on Days Absent During Reading Method with Traditional Homework, Shorthand from Print, and Spot-Writing Methods

Grp.	Read.	Trad. Hmwrk.	Shorthand from Print	Spot Writing	Grp. Aver. Over All Methods	$\frac{T+P+S}{3}$
1	1.20	1.20	1.80	2.60	1.70	1.87
2	1.00	.88	1.13	1.00	1.00	1.00
3	.89	1.66	.44	1.44	1.18	1.18
4	1.88	1.00	1.38	.63	1.22	1.00

Figure 4.3 illustrates the data from Table 4.7 in graph form.

The data from Table 4.7 and Figure 4.3 show that the difference between the differences among the methods was greater when the reading method came first or third in the order of methods. In other words, students on the

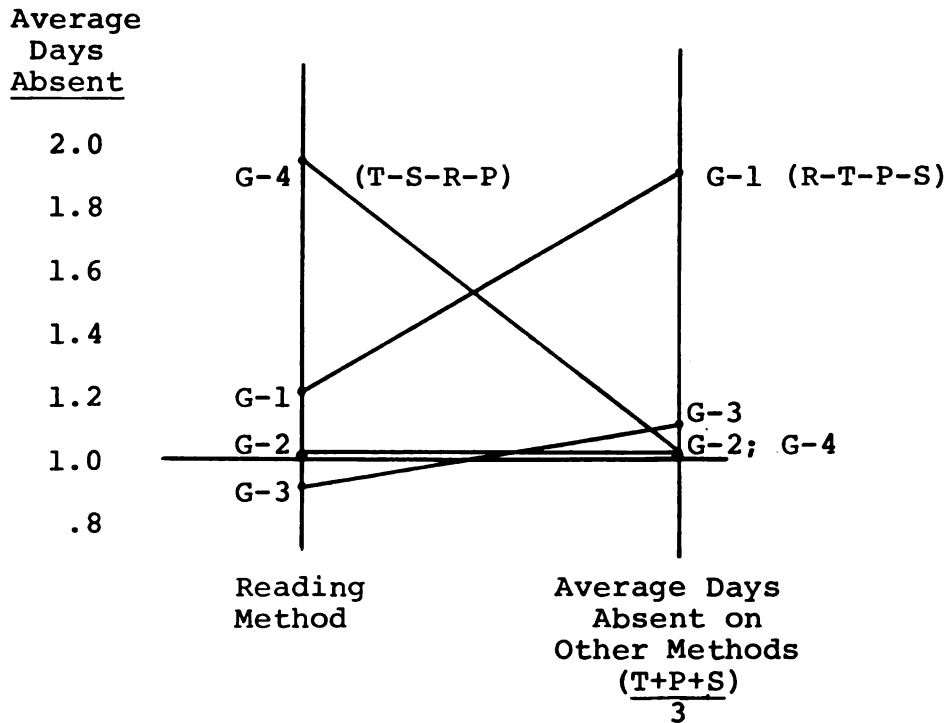


Figure 4.3--Comparison of Groups on Days Absent During Reading Method with Traditional Homework, Shorthand from Print, and Spot-Writing Methods.

average were absent more during the reading method when the reading method occurred as the first or third method in the order in which students worked on the shorthand practice methods.

Statement of Hypothesis

H₂: There is significant correlation between the ability to write correct shorthand outlines as measured by a criterion test for theory and the ability to transcribe shorthand notes from dictation.

Relationship of Hypothesis to Design

As was stated previously, the design for this study involved the sequential administration of each of the four treatment methods. To control for the order of administration, four groups of subjects were administered the sequence of four treatment methods in counter-balanced order. Each of the treatment methods comprised a three week segment of time. At the beginning of the experiment, midway through the experiment (at the end of the second three weeks), and at the end of the experiment, theory tests were given. Figure 4.4 shows the relationship of the theory tests to the research design.

Pre Theory			Mid Theory			Post Theory	Average of Words Right Across Four Time Blocks
	Time 1	Time 2		Time 3	Time 4		

Figure 4.4

Relationship of Theory Tests
to Experimental Design

Method of Analysis

The Pearson Product Moment correlation coefficient was used to analyze the data. Average words right was computed as the average of the scores each subject obtained

on dictation-transcription tests given at the end of each of the four treatment methods. Specifically, $AWR = (WR_1 + WR_2 + WR_3 + WR_4) \div 4$.

Analysis of Correlation

The Pearson Product Moment correlation coefficient revealed that there was a significant relationship of .84 between the pretheory test and average words right ($p=.001$). There was also a significant relationship of .76 between the midtheory test and average words right ($p=.001$). In addition, a significant relationship of .80 existed between the posttheory test and average words right ($p=.001$). This is further shown in Table 4.8.

TABLE 4.8

Pearson Product Moment Correlation Coefficient Between Pretheory, Midtheory, and Posttheory Tests and Average Words Right on Dictation-Transcription Tests

Theory Test	AWR on Dict.-Trns. Tests	N	p=
Pretheory Test	.8434	31	.001 (S)
Midtheory Test	.7632	31	.001 (S)
Posttheory Test	.8017	31	.001 (S)

Interpretation of Results

From the results of the Pearson Product Moment correlation coefficient, it was possible to support the hypothesis that there is a significant correlation between the ability to write correct shorthand outlines and the ability to transcribe shorthand notes from dictation.

Statement of Hypothesis

H₃: There is a significant correlation between liking a method and the score received in that method for words right.

Relationship of Hypothesis to Design

Upon the completion of the experiment, each student completed a signed opinionnaire stating her opinions of each of the treatment methods. Appendix D is a sample of the opinionnaire used.

Method of Analysis

The Pearson Product Moment correlation coefficient was also used to determine if there was a significant correlation between liking a method and the ability to take dictation.

Analysis of Correlation

The Pearson Product Moment correlation coefficient showed there was a significant relationship of .52 between a student's ability to take dictation after receiving the

reading approach method and her attitude toward the reading method ($p=.001$). The data further revealed that the better a student's ability to take dictation after receiving the reading approach method, the more she disliked the reading method. There was no significant relationship between a student's ability to take dictation after receiving the traditional, the shorthand from print, or the spot-writing-from-taped-dictation methods and her attitude toward those methods. This is further illustrated in Table 4.9.

TABLE 4.9

Pearson Product Moment Correlation Coefficient
Between Liking a Given Method and the Ability
to Take Dictation After Having Been
Exposed to that Method

Method	Correlation Coefficient r_{xy}	$r \rightarrow z$ Trans- formation	N	p=
1	.5265	.5846	31	.001 (S)
2	.2281	.2321	31	.109 (NS)
3	.0851	.0852	31	.325 (NS)
4	.1023	.1024	31	.292 (NS)

Interpretation of Results

R $\rightarrow$ Z transformations needed because of the diversity in the distribution of the Z scores. Averaging was done by

transforming the r 's into Z scores, adding the Z scores, dividing by four, and retransforming the average Z into a correlation coefficient. At 31 df, the average correlation between liking a method and success at that method is .2460. Therefore, it was not possible to support the hypothesis that there is a significant correlation between liking a method and the score received in that method for words right.

Summary

The primary purpose of this study was to compare the effectiveness of four methods of doing supervised in-class practice in the second semester of beginning high school shorthand. For statistical analysis, the hypotheses were tested in the null form.

H_1 : Students will develop greater skill in taking dictation of new material, as measured by the number of correct words on a criterion test; will have a lower rate of absenteeism; and will have a more accepting attitude when using the spot-writing-from-taped-dictation method than will be achieved by students using the reading approach method, the traditional homework method, or the writing shorthand from print method.

H_2 : There is a significant correlation between the ability to write correct shorthand outlines as measured by a criterion test for theory and the ability to transcribe shorthand notes from dictation.

H₃: There is a significant correlation between liking a method and the score received in that method for words right.

The multivariate analysis of covariance was used to test the difference between methods. This was done by comparing DIFF scores between methods for words right, days absent, and attitudes. The analysis found no significant difference between methods. For words right, the probability was equal to .2170; for days absent, the probability was equal to .8905; and for attitudes, the probability was equal to .2455.

From the results of the analysis, it was not possible to support the hypothesis that students will develop greater skill in taking dictation of new material, as measured by the number of correct words on a criterion test; will have a lower rate of absenteeism; and will have a more accepting attitude when using the spot-writing-from-taped-dictation method than will be achieved by students using the reading approach method, the traditional homework method, or the writing shorthand from print method.

After the research data was processed, the researcher found two other worthwhile findings that added to the depth of the study. Because of insufficient theory on which to develop a primary hypothesis, they were not among the original hypotheses and were, therefore, reported

in subhypotheses format. The two subhypotheses were tested to illuminate the findings of the main hypothesis test. These were a groups effect hypothesis and a groups by methods interaction hypothesis.

Because students and treatment methods were randomly assigned, the small obtained F ratios were evidence that the order in which the treatment methods were given to students was unimportant. Furthermore, students scored equally well in all four of the groups; on the average, students recorded the same number of words right, days absent, and attitudes. Therefore, the hypothesis that there would be a difference between groups could not be supported.

The multivariate analysis of covariance was also used to test groups by methods interaction. As the difference between the groups for days absent was significant ($p=.04$), the hypothesis that there would be a difference between groups by methods interaction was supported.

Because the difference between the groups for days absent was significant, the data was further studied to determine if there was a difference between the differences among the methods when one methods order was contrasted with the other methods orders. The data revealed that the difference among the methods was greater when the reading method came first or third in

the order of methods. In other words, students on the average were absent more during the reading method when the reading method occurred as the first or third method in the order in which students worked on the shorthand practice methods.

It had also been hypothesized that there was a significant correlation between the ability to write correct shorthand outlines as measured by a criterion test for theory and the ability to transcribe shorthand notes from dictation.

The Pearson Product Moment correlation coefficient found a significant relationship between each theory test and the average words right ($p=.001$). The relationship between the pretheory test and average words right was .84; the relationship between the midtheory test and average words right was .76; and the relationship between the posttheory test and average words right was .80.

From the results of the Pearson Product Moment correlation coefficient, it was possible to support the hypothesis that there is a significant correlation between the ability to write correct shorthand outlines and the ability to transcribe shorthand notes from dictation.

It had also been hypothesized that there was a significant correlation between liking a method and the score received in that method for words right.

The Pearson Product Moment correlation coefficient showed a significant relationship of .52 between a student's ability to take dictation after receiving the reading approach method and her attitude toward the reading method ($p=.001$). The data further revealed that the better a student's ability to take dictation after receiving the reading approach method, the more she disliked the reading method. There was not significant relationship between a student's ability to take dictation after receiving the traditional homework method, the shorthand from print method, or the spot-writing-from-taped-dictation method and her attitude toward those methods.

From the results of the Pearson Product Moment correlation coefficient, it was not possible to support the hypothesis that there is a significant correlation between liking a method and the ability to take dictation.

Chapter 5

SUMMARY, CONCLUSIONS, AND FURTHER RESEARCH

Summary

The results of research studies demonstrate that although many students do well in shorthand classes, some students do not. Shorthand instruction frequently leaves much to be desired in reaching objectives which are reasonable and which should be attained. The teacher must provide the appropriate environment if students are to reach the goals set for shorthand.

In this study, the problem was to determine effective ways of doing in-class supervised shorthand practice in the second semester of the first year of Gregg shorthand.

Need for the Study

During the first semester of shorthand, students are highly motivated. They are learning to write shorthand, which is new, fun, and exciting. During the second semester, however, many students lose much of their enthusiasm. Why do students lose their initial enthusiasm? One reason probably has to do with the lack of variety and the sameness of the daily classroom activities.

By providing students with a variety of in-class supervised practice methods during the second semester of the first year of Gregg shorthand, it was hoped that the students would become motivated and enthusiastic--two elements that are necessary for building shorthand dictation skill.

Purposes of the Study

The primary purpose of this study was to compare the effectiveness of four methods of doing supervised in-class practice in the second semester of beginning high school shorthand. Twenty minutes each day was spent on the in-class practice methods. The four methods were as follows:

A. The reading approach method had the student read the lesson silently.

B. The traditional homework method or self-dictation method asked the student to read each letter before writing it from self-dictation.

C. The writing shorthand from the print (longhand) method required the student to write the lesson in shorthand, using the transcript accompanying the textbook without having first read or copied the shorthand plates.

D. The spot-writing-from-taped-dictation method involved tapes prepared for this study. The dictation was recorded at a speed-forcing rate. The student spot-

wrote the lesson once from the taped dictation while reading and keeping her eyes on the textbook.

The secondary purposes were (1) to assess the implications for out-of-class practice; (2) to determine whether there was a significant correlation between the ability to write correct shorthand outlines as measured by a criterion test for theory and the ability to transcribe shorthand notes from dictation; (3) to determine if the order in which the methods were taken had an effect on performance; (4) to assess student reaction to the methods to determine whether students were absent more during one method than during the other methods; and (5) to determine whether there was a significant correlation between liking a method and the ability to take dictation.

Hypotheses Tested

The main question to be answered by this study was how did these four methods compare? In addition to seeking answers to this question, substudies were done to answer the following questions:

1. What was the correlation between being able to write shorthand correctly, as measured by a criterion test for theory, and the ability to take dictation of new material for each of the four practice methods?

2. What was the correlation between student attitude toward the practice method used and the success achieved in taking dictation?

The three primary research hypotheses, which were tested in the null form, were:

H₁: Students will develop greater skill in taking dictation of new material, as measured by the number of correct words on a criterion test; will have a lower rate of absenteeism; and will have a more accepting attitude when using the spot-writing-from-taped-dictation method than will be achieved by students using the reading approach method, the traditional homework method, or the writing shorthand from print method.

H₂: There is a significant correlation between the ability to write correct shorthand outlines as measured by a criterion test for theory and the ability to transcribe shorthand notes from dictation.

H₃: There is a significant correlation between liking a method and the score received in that method for words right.

Procedures Used

All of the students (43 at the outset) enrolled in the two classes of second semester first-year Gregg shorthand at Waverly High School during the second semester, 1975, were the subjects in this study. As a

control of the variables of teacher and classroom activities, the researcher taught both classes following the same lesson plans.

The textbook used in the classes was Gregg Dictation, Diamond Jubilee Series (1974 edition).

A repeated measures design was used which enabled each student to receive the four treatments; three weeks were spent on each of the four in-class supervised shorthand practice methods. Students and the orders in which they received the methods were randomly assigned.

Dictation-transcription tests and theory tests were given to measure the shorthand skill attained during the experiment. Theory tests were given at the beginning of the experiment, half way through the experiment, and at the end of the experiment. Dictation-transcription tests were given at the beginning of the experiment and at the end of each three-week segment.

To test the difference between methods, the data were analyzed as a repeated measures design using Jeremy Finn's multivariate program. The multivariate program was used in this study by doing a one-way analysis of covariance for the variable SUM and a one-way multivariate analysis of covariance for the variable DIFF.

At the end of the experiment, students completed an opinionnaire in which they gave their reaction to the experiment.

Findings

The results for 30 students were included in the analysis of the data. The results for 13 students were not included in the analysis of the data. Two of those students took two-week vacations during the experiment; the other eleven students were absent on the days that the theory and/or dictation-transcription tests were given.

To investigate the question of difference between methods, the data were studied according to groups effect, methods effect, and groups by methods interaction.

Groups effect.--Difference between group means was tested with a one-way analysis of covariance using as data the SUM of a student's scores across the four treatments. No significant difference was found between groups in the total number of words correctly transcribed, days absent, and attitude. Therefore, it was concluded that the order in which the treatment methods were given to students was unimportant.

Methods effect.--Difference between methods was tested with a one-way multivariate analysis of covariance using as data the set of DIFF scores for each student across the four treatment methods. The multivariate test tested the three DIFF scores simultaneously. No one method was found to be better than any of the other methods.

Groups by methods interaction.--Groups by methods interaction for words right and attitude showed no significance. However, groups by methods interaction for days absent was significant ($p=.0162$). Each group's days absent was then studied for DIFF 1, DIFF 2, and DIFF 3. The difference between the groups for days absent was significant ($p=.04$) for the reading method.

The data was further studied to determine if there was a difference between the differences among the methods when one methods order was contrasted with the other methods orders. The data revealed that students on the average were absent more during the reading method when the reading method occurred as the first or third method in the order in which students worked on the shorthand practice methods.

The Pearson Product Moment correlation coefficient was used to determine if there was a significant correlation between the ability to write correct shorthand outlines as measured by a criterion test for theory and the ability to transcribe shorthand notes from dictation.

The Pearson Product Moment correlation coefficient found a significant relationship between each theory test and the average words right ($p=.001$). The relationship between the pretheory test and average words right was .84; the relationship between the midtheory test and

average words right was .76; and the relationship between the posttheory test and average words right was .80.

From the results of the Pearson Product Moment correlation coefficient, it was possible to support the hypothesis that there is a significant relationship between the ability to write correct shorthand outlines and the ability to transcribe shorthand notes from dictation.

The Pearson Product Moment correlation coefficient was also used to determine if there was a significant correlation between liking a method and the ability to take dictation.

The Pearson Product Moment correlation coefficient showed a significant relationship of .52 between a student's ability to take dictation after receiving the reading approach method and her attitude toward the reading method ($p=.001$). The data further revealed that the better a student's ability to take dictation after receiving the reading approach method, the greater she disliked the reading method. There was no significant relationship between a student's ability to take dictation after receiving the traditional method, the shorthand from print method, or the spot-writing-from-taped-dictation method and her attitude toward those methods.

From the results of the Pearson Product Moment correlation coefficient, it was not possible to support

the hypothesis that there is a significant relationship between liking a method and the ability to take dictation.

Conclusions

The following conclusions are based on the findings obtained from the in-class supervised shorthand practice experiment conducted by the researcher and are not claimed to apply to shorthand classes in general.

1. The order in which students received the treatment methods was unimportant. Therefore, it is not necessary to have students do one particular method of preparing their homework before using another method.

2. Since no one method was found to be better than any other method, students should be allowed to choose the method to use in preparing their individual shorthand assignments. A student along with the teacher could work out an individualized homework assignment.

3. There was a significant difference between the groups for days absent for the reading method. Students were absent more when the reading method came first or third in the order in which they received the treatment methods. Rather than assigning the reading approach method of preparing homework, the teacher should let the student decide if and when she wishes to use the reading approach method.

4. Because there was a significant correlation between the ability to write correct shorthand outlines and the ability to transcribe shorthand notes from dictation, emphasis should be placed on shorthand theory during all semesters of shorthand training.

5. The study was undertaken to help students become motivated and enthusiastic--two elements thought to be necessary for building shorthand dictation skill. As Nelson pointed out, the concern over student motivation is probably justified, as students learn best when they are motivated to learn.¹ However, the results of the study showed that there is no significant relationship between a student's ability to write dictation after receiving the traditional, shorthand from print, or spot-writing-from-taped-dictation methods and her attitude toward those methods. There was, though, a significant relationship between a student's ability to take dictation after receiving the reading approach method and her attitude toward that method. Further analysis revealed that the better a student's ability to take dictation after receiving the reading method, the more she disliked the reading method. Perhaps teachers are unduly concerned about motivating students

¹Nelson, loc. cit.

to learn, as students' attitudes in this experiment toward the treatment methods did not affect their achievement after receiving those treatment methods.

Further Research

The following questions, based on the findings of this study, should be researched.

1. What would be the results if the study was replicated with a larger number of subjects?
2. What would be the results if a study was made to determine the relationship between the ability to write correct shorthand outlines and the rate at which dictation can be taken?
3. The results showed that on the average students were absent more during the reading method when the reading method occurred as the first or third method in the order in which students worked on the shorthand practice methods. What would be the results if a study was made to determine why students were absent more when the reading method came first or third in the order of practice methods?
4. What would be the results if a study was made to determine what enables students to achieve in shorthand if they do not have to be motivated in order to achieve?

5. What would be the results if a study was made to determine student achievement in speed dictation if no practice was done out of class?

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APPENDICES

APPENDIX A

SPOT-WRITING SAMPLE

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APPENDIX B

THEORY TESTS

Theory Test I

one-won, worthwhile, enlarged, yield, population, equivalent, subsequent, folio, detain, entrap, impeachment, December, savings, legalize, lookout, manner, forceful, meanwhile, unrewarded, clarity, New Jersey, enclose, ultimate, yesterday, electric light, implied, unreportable, supervisor, delightful, truthfully, opportunity, transform, typical, Chicago, cancellation, chemically, concurrent, constitution, partnership, immediate, deadline, agreement, reduction, enthusiasm, fatigue, why not, one of our, glad to know, to do, at this time

Theory Test II

memorize, acknowledgment, situations, send, unenforced, computer, vice versa, stimulus, briefer, manual, franchise, memorandum, anticipate, reaction, evaluation, disengage, unattached, reduction, ample, inventory, techniques, newspaperman, finalize, promote, computer, prefer, conceive, personable, scrutinize, connection, mystery, railroads, baggage, highway, admission, eastern, dividend, unstable, elevator, materialized, relinquish, congratulate,

grammatical, refineries, computation, able to say, which would, were not, between the, I am

Theory Test III

report, stoppage, industry, reader, exceedingly, factor, divide, mix, must, styles, engine, logical, forward, require, person, thanks, express, commission, subdivision, entertain, cooperation, some, unexplained, private, meaningful, square, boyhood, will-well, many, bridge assumed, thinking, modification, system, highway, efficient, institution, picture, simple, budget, Monday, vehicle, self-sustaining, however, resident, should be able, one of our, that is, to be, let us

APPENDIX C

DICTATION-TRANSCRIPTION TESTS

Take I-1, 80 words per minute

Dear Mr. Jones: Do you waste time every month standing in line to pay taxes and other bills? Do you sometimes / neglect to get a receipt for bills you have paid? Do you risk loss or theft of money by carrying large sum of / cash with you? You can avoid these unnecessary risks and nuisances by opening a special checking account. /

With one of our special checking accounts, you do not have to waste time standing in line to pay bills. You just write (1) out your check in the comfort of your own home and send it through the mails. It is as simple as that.

Your canceled checks / represent the best kind of proof that you have paid your bills.

By using our special checks, you will not have to carry / a large sum of money with you and risk losing it or having it stolen from you. You may find it easier / to live within your budget, too, because your checkbook shows where the money goes. It helps you to find out whether you (2) are spending too much money on certain items.

It makes good sense to open a special checking account, / particularly in view of the fact that it costs so little. The cost of each check is 10 cents, plus a fee of 25 / cents a month for maintenance. You do not have to keep a minimum balance at any time.

Why not open / a special checking account today and start profiting from its many advantages.

Very cordially yours, (3)

Take I-2, 70 words per minute

Dear Mrs. Wilson: I wonder whether you have heard of our new thrift plan, which enables you to / buy things you need without straining your budget?

This is how the plan works: You call at our credit office / and open your account for, let us say, \$120. The first month you purchase / up to \$120 worth of merchandise and make monthly payments of \$20. (1) You do not need to wait until you have paid the balance before you use your account again. You / can charge \$20 more after you make your first payment. You do not have to use all of your / \$120 in one month. You can use it as you need it.

Your account never has to / be paid in full. It runs as long as you want to use it, provided your montly payments are made (2) regularly.

Your montly statement will show the purchases you made, the balance due, and a small service / charge.

See how nicely this plan fits into your budget. You will know how much you are spending and / exactly how much you have to pay every month.

Stop in soon at our credit office. A member / of our staff will be glad to help you fill out the required forms to open your account.

Cordially yours, (3)

Take I-3, 60 words per minute

Dear Mr. Nelson: Do you want us to sue you? Is your credit standing and the effort / you have put into your business of such small value to you?

There is a reason / why you have not paid; otherwise, we would already have received your check. When you / continue to ignore my requests for payment, however, I cannot help but feel that (1) you are not interested.

Would you prefer to have your account turned over to our / attorney for collection? Surely, it would be easier for you to sit down and / write us a check. You know that a black mark against your credit standing will become known / throughout our entire industry; it will cause you to lose your most valuable asset, (2) credit standing. You will no longer be able to purchase goods on credit. /

I do want to continue to work with you, but it is up to you to keep your / account in good standing.

Please help me continue working with you by sending me your / check today so that your long overdue account can be marked "Paid in Full."

Sincerely yours, (3)

Take I-4, 50 words per minute

Dear Mrs. Bates: In reviewing our customers' accounts, we note / with some concern that your account has not been active for some time. Your business / and good will are of great importance to us, and we hope that this / situation has not been caused by any dissatisfaction with our (1) goods or service.

Would you be good enough to tell us on the enclosed / card why we have not had the pleasure of serving you. We are always eager / to make shopping at our store a more pleasant and rewarding / experience. This would help us a great deal.

Incidentally, our new fall (2) line of coats has just arrived. On our racks you will find a large selection / of women's coats from which you will have no difficulty choosing one / to your liking.

Wouldn't this be a good time for you to come in? Please / be assured of our desire to serve and please you at all times.

Sincerely, (3)

Take II-1, 80 words per minute

Dear Mr. Gray: What is the difference between a good salesman and a star salesman?

Often two men appear to / be evenly matched in their knowledge of a product and in their personality and appearance. Yet, one sells / twice as much as the other.

If you look below the surface, you will often find an important difference. The / good salesman spends as much time as possible with prospects. The star salesman plans his day to spend as much time as (1) possible with the best prospects he can get to see.

The law of averages will then help to make the average salesman / a star.

Put the law of averages to work for your sales force. Provide your salesmen with the information they / need to direct their efforts toward those people who are known to be the best prospects. This is the information / they will find in the Johnson Sales Guides for their territories.

Sales do not just happen. They are the result of bringing (2) together a good product with a prospect who not only has the need for it but also has the money / to buy it. Thousands of salesmen today are using our Sales Guides to locate prospects who are in a position / to buy their products.

Your salesmen can use them successfully, too.
Wouldn't it be a good idea to get Sales Guides for / all
your men to help them plan for better selling? Just
order the guides you need on the enclosed order form.

Very Truly yours, (3)

Take II-2, 70 words per minute

Dear Mr. Baker: If anyone were to tell you that tomorrow
you might be sued and that the / result of the suit might
ruin your business, perhaps you would laugh. If you
were the man involved in the / suit described in the
enclosed magazine article, however, you would not laugh,
for that man lost / every penny he owned as a result of
a suit.

As you will see by the article, one of (1) the
employees in this man's factory met with an accident that
was not covered by insurance. / The employee entered a
suit for \$100,000 and won. To meet this man's judgment, /
the employer had to give up his business.

If he had been protected by one of our policies, /
this would not have been necessary. We would have fought
the case for him; and had we lost, we would have (2)
taken care of the judgment. In no case would our client's
business have been in danger.

You will be / delighted with the low cost of our
insurance. For \$500 a year you can insure your / staff
against all types of accidents.

We want you to know more about our policies. It will take / you only a moment to mail the enclosed card and invite our agent to call on you.

Yours turly, (3)

Take II-3, 60 words per minute

Dear Mr. Kelly: If you are tempted to buy a car with little or nothing down / and take three or four years to pay, be careful. These are not easy terms at all. They are, / in fact, very harsh terms.

The cheapest way to buy a car is to pay cash for it. In / that way you have no interest charges to pay. The next cheapest way to buy a car (1) is to pay as much down as you can afford and the rest as soon as possible.

It / is true, of course, that you can arrange payments that are too high for comfort; and, as a / result, your car may be a burden instead of a pleasure. On the other hand, if / you pay less than you can comfortably afford, you are paying for financing service (2) that you do not need. Consequently, it is wise to arrange your payments to suit / your income. Pay as much down as you can, and pay the rest as soon as you can.

If you / are planning to purchase a car on time, why not ask one of our finance experts to / advise you

on the terms of payment that will be best for your budget.

Sincerely yours, (3)

Take II-4, 50 words per minute

Dear Mr. Ramsey: Naturally, we want the \$300 / that is due on your account. However, we also want to keep your friendship. / During the ten years that we have done business with you, you have always paid your / bills promptly. Consequently, we are convinced that there must be (1) some good reason why you have not taken care of your account.

As I / am sure your dealings with us have convinced you, we try to give the best service / possible. We realize, though, that errors occur now and then. / If our service has been at fault, we want you to tell us about it.

On (2) the other hand, if nothing is wrong and the reason you have not paid / us is a shortage of funds, please write us frankly. Perhaps we can work out / some plan of payment that will not impose too heavy a burden on / you.

Please do not keep us in the dark; write us today.

Yours very truly, (3)

Take III-1, 90 words per minute

Dear Friend: If you act now, you can have the next eight issues of the Digest at half price. Perhaps you may wonder why we are making / this attractive offer. Here is the reason.

We know that you do not subscribe to the Digest, and we should like you to try it. / Our experience indicates that those people who do try it send us their renewals year after year. Consequently, it is / very much to our advantage to make you the following special half-price trial offer:

You can have the next eight months of the Digest (1) for only \$1. Normally you would have to pay \$2 for these eight issues.

Because we are holding a reservation / in your name we should like to hear from you promptly whether or not you would like to accept this offer. Therefore, won't you please / let us have your decision on the enclosed card as soon as possible. It is not necessary to send any money now; / we shall mail you a statement for \$1 later. All you need do is return the enclosed card. For your convenience, I am enclosing a (2) stamp that will speed the card back to me by first-class mail.

The finest of what is being written in the world today is brought to you / in condensed form each month

in the Digest. The handy size of the Digest makes it easy to carry, so that you can utilize / for profitable reading those many odd moments that would otherwise be wasted.

It is a magazine that the whole family / can read and enjoy. It contains many articles of interest to all members of the family.

Sincerely yours, (3)

Take III-2, 80 words per minute

Dear Mr. Casey: You no doubt have customers who have allowed their accounts to become past due. You do not like / to ask them to pay because you know they will eventually do so. At the same time, you feel that you have given / them the same good service and quality merchandise that you have given your other customers who pay promptly. /

You must know, therefore, just how we feel about your account with us. We want to continue giving you the best (1) possible service and quality products as well as the benefit of our regular credit terms. To that / end we hope you will co-operate with us in the matter of payments.

It occurs to us that you may be waiting / to pay your account in full. Please do not do that, for the older the account gets, the worse it looks on our books. /

We want to make favorable reports on your credit standing when we are called upon to do so, and we hope (2) you can place us in a position to do so by making at least a part payment without delay.

We suggest / that you send us a check for perhaps \$157, the amount of your April 10 / and June 16 bills. That will put your account in much better shape and will enable us to give you more time on the / remaining bills. Will you do this? A stamped envelope is enclosed for your convenience.

Very truly yours, (3)

Take III-3, 70 words per minute

Dear Miss Simpson: In the past week or two I have had several complaints from employees in the / Mailing Department who said they did not receive their pay checks on time and that they had considerable / difficulty finding anyone who knew where they could pick them up.

In distributing checks / to the staff, I suggest that these steps be followed:

1. If it is at all possible, the check should be (1) delivered into the hands of the employee.

2. If the employee is not at his desk at / the time the checks are being distributed, a note should be left telling him that his check is ready / and where he can pick it up. There is a regular form that you can use for this purpose.

3. If / the employee does not call for his check in two days, it should be returned to the treasurer's office (2) on the fifth floor with a note giving the reason why the check is being returned. The treasurer's / office will see that the check is delivered.

Under no circumstances should the check be left on the / employee's desk. As I am sure you will recall, we have had too many sad experiences / with that procedure.

If you have any questions about our policy, come in to see me.

Yours truly, (3)

Take III-4, 60 words per minute

Dear Mr. Harris: Have you received a promotion recently? If not, are you being / bypassed while someone else fills that job ahead? If that is the case, have you tried to / learn the reason why?

Remember, the person who gets the promotions is the one who / is ready.

You can take definite steps to be ready for that next opening by (1) enrolling the the United Correspondence School and studying those subjects that / will prepare you for that job ahead. We have helped thousands of young men to a more / satisfying life. Why not let us help you, too?

All you have to do is indicate on / the enclosed folder those fields in which you are interested. We will send you a complete (2) kit of materials for each subject. These materials will give you step-by-step / guides on how to proceed. In addition, our trained staff will closely follow your work / to see that you are making the progress you should.

Fill out the enclosed form and return / it today; it will not take you more than a minute to do so.

Yours very truly, (3)

Take III-5, 50 words per minute

Dear Mr. Brown: On April 16 you ordered goods from us, and they / were shipped immediately according to your instructions. Your payment / for these goods was due on May 16.

Today is September 16, / but we have not had a reply of any kind from you. What is our next (1) step? The money is due us, and you have not questioned the account in / any way.

We want your future business and your friendship, but we must have / our money for this past transaction if our business relationship / is to continue to be pleasant.

Won't you please take the time now to mail (2) your check or to tell us why you have not paid and when you will pay.

In / the absence of word from you in our office on or before October / 1, we will turn your account over to our collection agency / for action. We will do this only as a last resort.

Cordially yours, (3)

Take IV-1, 90 words per minute

Dear Member: This letter acknowledges with thanks your order reserving a copy of our new book, Our World. The fine response to / this project has been most pleasing.

Because printing and binding a book of this kind requires considerable time, we estimate / that publication will be sometime in late summer or early fall. Just as soon as copies are available, we / will ship yours to you.

You will notice that an extra order card is enclosed with this letter. So many people have raised the question (1) or ordering additional copies at the special rate that we have decided to give everyone who has already / ordered the book an opportunity to purchase just one additional copy at the same rate. I am sorry that we / have to limit this, but the \$9.95 price was originally offered only so that we could get an advance / estimate of how many books to print. The regular price will probably be \$13.50, and future orders (2) will have to be filled at that price.

If you have wanted to reserve a copy of Our World for a friend or a member of / your family, please fill out the enclosed card and return it to us as soon as possible. We must plan our final printing order in the / next few weeks if we are to meet our publication schedule.

By the way, if you should change your address between now and the / fall, please use the card we have enclosed to notify us. We want to be sure to mail your copy to the right address.

Cordially yours, (3)

Take IV-2, 80 words per minute

Dear Mr. Klein: No amount of money can make up for the personal loss you would suffer if your business partner / were to die. His friendship and his advice cannot be measured in terms of money.

Insurance, however, can / be a help in solving some of the problems that the remaining partner must often face.

For example, what would / happen if a partner's holdings were inherited by relatives who were not interested in carrying (1) on the business? Or what would happen if the heirs forced their way into the business and, because of their inexperience, / tore down the good will it took years to create?

One of the best things you can do for your business is to ask / your lawyer to prepare an agreement that will provide for the purchase by the surviving partner of a deceased / partner's interest at a fair price. The sooner this agreement is drawn up and filed, the better. And a good (2) way to be sure to have the money when you need it is to buy partnership life insurance, the cost of which is / less than you think.

The importance of protecting your business cannot be stressed too strongly. Why not sit down now with / one of our representatives and discuss this business protection. If you would like more information about this / insurance for your business, fill out the form that is enclosed and return it to us.

Yours very truly, (3)

Take IV-3, 70 words per minute

Dear Mr. Baker: It is not how much money a man has that determines his credit standing; / it is how he pays his bills! A person with very little money can enjoy a good credit / reputation if he always pays on time. A rich man can be a poor credit risk if he neglects / his bills. We are sure you want to maintain a good credit standing and be considered as one who never (1) breaks a promise and always pays his bills on time.

You can improve your credit standing by taking / care of your past-due balance with us. We have been glad to give you an extension on your account / during the past month, for we realize that most people have extra expenses at certain / periods of the year.

At this time, though, we should appreciate receiving your remittance in full. Of (2) course, it is impossible for you to pay in full, then send a partial payment on your account. / Do not let your account continue to go unpaid any longer. If you cannot pay anything, / please call me at once.

We do not like to keep reminding you of your balance, but we must do / so until you send your remittance or make a satisfactory settlement.

Cordially yours, (3)

Take IV-4, 60 words per minute

Dear Mrs. Moore: The Credit Department tells me that they have written you four letters / about your outstanding balance of \$165 and that they have / received no response to their requests for payment. They want me to write you one final / letter before they take legal action.

As I am sure you know, all purchases that (1) are made during the month are billed to you on the first of the month that follows. Your charge / account gives

you the privilege of taking 30 days to pay after you receive / your bill.

In spite of the fact that these terms are liberal, we realize tha occasions / may arise when our customers cannot make payment within 30 days. On those (2) occasions we invite them to explain the reason why they cannot pay, and almost / without exception we are glad to entend the time.

In your case, however, we have / received neither payment nor explanation. Won't you send us a check for / \$165 or at least let us know why you have not paid.

Yours very truly, (3)

Take IV-5, 50 words per minute

Dear Mr. Gates: We know you will take this letter in the friendly spirit / in which it is written.

Because of our desire to be as helpful / as possible, I have permitted the old balance of / \$180 to stand on our books until now. Although I think that you (1) could send us a part payment at this time, I assume you have been waiting / until you could send us a substantial amount.

However, small sums / paid regularly might make it more convenient for you to reduce / the amount you owe us without inconveniencing yourself in any (2) way.

I am, therefore, asking you to let us have something every / week to apply on your account. Why not send us \$20 at once / and \$20 a week thereafter until your account / is paid up.

I shall be grateful for your co-operation.

Very truly yours, (3)

Take V-1, 90 words per minute

Dear Mr. Mason: It is no secret that licking and sticking stamps is tedious, slow, and inefficient. Why put up with / old-fashioned mailing methods when you can have a postage meter at a cost that will surprise you?

The National Desk Model Postage / Meter gives even the smallest office all the advantages of metered mail. Our records indicate that more than one-third / of National users average less than \$1 a day for postage.

With a National, you get rid of stamps, stamp sticking, and the (1) stamp box; you print postage as you need it for any kind of mail. You insert the envelope, dial the amount of postage / you want, press the lever, and your letter is stamped. A moistener for sealing envelopes makes mailing simple and fast. For parcel / post, the stamp is printed on special gummed tape. You can also print your own small advertisement on the envelope, if you / would like to have one. The machine is so simple to operate that a child of five can operate it after a few minutes' training. (2)

Metered mail gives you another important advantage: because it does not need to be postmarked and canceled, very often your / mail makes earlier trains and planes.

You always have the right stamp. The meter is set at the post office for as much postage as you / want to buy. Postage is protected from loss and damage; it is automatically accounted for.

There is a postage meter / for every office, large or small. For full information and our complete catalogue, simply return the enclosed card.

Yours very truly, (3)

Take V-2, 80 words per minute

Dear Mr. Baker: Fires do not keep office hours; they start any time and any place. A sudden fire can destroy / your vital business records and put you out of business. Nearly half of all businesses struck by fire never reopen. /

If you should have a fire, you would need your records as a proof of loss. Furthermore, laws require that certain records, such / as tax and payroll records, be fully protected at all times.

The Wilson Safe is just one of over (1) 200 types of equipment we make that safeguard and protect your

valuable records at the point of use, / and they do the job twenty-four hours a day.

There is a size and style of Wilson Safe for every business need. / These units combine modern efficiency and convenience. They are carefully tested under conditions / simulating actual fires, and they bear our guarantee that your records are fully protected at all times. (2)

Do not take unnecessary risks. If you are not completely certain of the protection your present equipment / will give, call our nearest office without delay. Our representative will prove to you that it costs much less / than you think to have satisfactory protection.

If you would like to have our latest catalogue covering our / entire line, return the enclosed post card. The catalogue will be mailed to you immediately.

Yours very truly, (3)

Take V-3, 70 words per minute

Dear Mrs. Harper: We have a feeling that you are a smart shopper. We have this feeling because / you have often done your shopping through our catalogue.

When you order from our catalogue, you know more / about the merchandise you buy. You know that the prices are right, and you know that you are getting / the finest merchandise.

Anyone can put off buying until the need is urgent and then make a (1) purchase at the nearest store. This, however, leaves no time to consider whether you are getting / your money's worth. It takes a little thinking to plan ahead for coming needs, to compare values, and / to do a good job of spending your family's money.

When you shop through our catalogue, you are / thinking ahead and buying in advance of your actual needs.

Recently you received our spring (2) catalogue. Next to our big general catalogue, this is the most important shopping book for your / spring buying.

I am sure you have already planned to take advantage of many of the 600 / new items and 500 price reductions offered in this book.

Order by mail, by phone, or through / one of our sales offices. We look forward to the pleasure of serving you.

Very cordially yours, (3)

Take V-4, 60 words per minute

Dear Mrs. Bates: You are such a good customer of ours that I want to make sure you / consider our Easy Payment Plan for your Christmas shopping. This is especially / convenient at this time of the year, as Christmas shopping expenses can be spread out / over the year by paying a small amount with the order and the balance in equal (1)

monthly payments. Full information on this easy way to enjoy the things you / need while paying for them will be found in the catalogue we recently sent you.

Do / your important gift shopping early this year. Buy in November, when our stocks are complete. / All you have to do is fill out the enclosed gift order blank; then mail it in the (2) envelope that is also enclosed. To take advantage of our Easy Payment Plan, / fill in the lower half of the order blank and send the required down payment.

Make / this your rule: before buying anything anywhere, see what it sells for in our / catalogue.

Shop early, and make this a merry Christmas for all your family.

Yours truly, (3)

Take V-t, 50 words per minute

Dear Mr. Gates: Are you looking for a loan for some worthy purpose, / such as repairing your house or buying a car?

You may borrow any / amount from \$60 to \$3,500 from / the Country Trust Company. What is the cost? The cost is only (1) \$3.80 per year on each \$100 of your note.

As / and added protection for you and your family, the cost of life / insurance is included. Monthly payments can be arranged to suit your / convenience.

There is no red tape, either. Furthermore, you need not be a (2) depositor to get a loan.

When it comes to money, come to us. / as more than a million other people do. There are now more than 20 / offices of our bank located in New York. Consult your telephone / book for the one nearest you. You will be welcome.

Yours very truly, (3)

APPENDIX D

OPPINIONNAIRE USED IN THE STUDY

ATTITUDES OF SHORTHAND STUDENTS TOWARD
MANNER IN WHICH THEY WERE REQUIRED
TO DO THEIR IN-CLASS PRACTICE

<u>Method</u>	<u>Like Extremely Well</u>	<u>Like</u>	<u>Mild Dislike</u>	<u>Strong Dislike</u>	<u>Indifferent</u>
Reading					
Traditional					
Print					
Spot-Writing					
Comments:					

APPENDIX E

STUDENT PREDICTION-TRANSCRIPTION TEST
SCORES FOR WORDS RIGHT

Group	Students Within Groups Scores*	Group Average
1	171	128.4
	140	
	120	
	108	
	103	
2	152	141.0
	161	
	149	
	88	
	145	
	132	
	147	
3	154	146.666
	149	
	178	
	117	
	153	
	76	
	160	
	148	
	188	
4	151	101.0
	62	
	148	
	103	
	99	
	124	
	146	
	103	
	23	
		129.2665**

*Group 1 contained 5 students; Group 2, 8; Group 3, 9; and Group 4, 8.

**Average words right for all of the groups.

APPENDIX F

GROUP AVERAGE NUMBER OF WORDS RIGHT
ACROSS TREATMENT METHODS

Group	Read.	Trad.	Shorthand from Print	Spot Writing	Group Average Over All Methods
1	148	157	170	187	
	100	151	135	137	
	148	153	113	119	
	91	136	149	133	
	109	135	127	98	
	$\bar{X}=119.20$	$\bar{X}=146.40$	$\bar{X}=138.80$	$\bar{X}=134.80$	$\bar{X}=134.80$
2	166	147	139	156	
	167	176	194	164	
	166	154	137	151	
	89	89	108	92	
	131	137	136	161	
	136	134	139	151	
	164	157	191	144	
	136	141	173	156	
	$\bar{X}=144.38$	$\bar{X}=141.88$	$\bar{X}=152.13$	$\bar{X}=146.88$	$\bar{X}=146.31$
3	151	135	146	135	
	175	139	157	166	
	124	117	117	126	
	152	179	149	162	
	120	112	117	117	
	157	178	158	141	
	117	136	70	98	
	188	193	156	192	
	151	169	198	175	
	$\bar{X}=148.33$	$\bar{X}=150.89$	$\bar{X}=140.89$	$\bar{X}=145.78$	$\bar{X}=146.47$
4	68	71	74	55	
	204	166	152	153	
	114	121	131	132	
	100	125	90	72	
	138	157	137	119	
	177	155	150	138	
	92	73	99	82	
	0	38	27	41	
	$\bar{X}=111.63$	$\bar{X}=113.25$	$\bar{X}=107.50$	$\bar{X}=99.00$	$\bar{X}=107.84$
	$\bar{X}=132.63$	$\bar{X}=137.70$	$\bar{X}=134.63$	$\bar{X}=131.77$	$\bar{X}=134.18$

APPENDIX G

GROUP AVERAGE DAYS ABSENT ACROSS TREATMENT METHODS

Group*	Read.	Trad.	Shorthand from Print	Spot Writing	Group Average Over All Methods
1	2	2	3	3	
	0	0	0	0	
	1	1	4	7	
	0	1	0	0	
	3	2	2	3	
	$\bar{X}=1.2$	$\bar{X}=1.2$	$\bar{X}=1.8$	$\bar{X}=.26$	$\bar{X}=1.7$
2	1	1	0	0	
	1	2	1	1	
	1	0	1	1	
	1	1	3	2	
	1	1	0	0	
	2	2	0	1	
	1	0	3	2	
	0	0	1	1	
	$\bar{X}=1.0$	$\bar{X}=.88$	$\bar{X}=1.13$	$\bar{X}=1.0$	$\bar{X}=1.0$
3	0	1	0	0	
	0	2	0	0	
	0	0	0	1	
	0	0	0	0	
	1	2	0	3	
	1	1	1	2	
	4	5	2	2	
	0	0	1	1	
	2	4	0	4	
	$\bar{X}=.89$	$\bar{X}=1.67$	$\bar{X}=.44$	$\bar{X}=1.44$	$\bar{X}=1.11$
4	5	4	5	3	
	0	0	1	0	
	1	0	0	0	
	3	1	1	0	
	1	0	0	0	
	1	1	0	0	
	3	1	0	1	
	1	1	4	1	
	$\bar{X}=1.88$	$\bar{X}=1.0$	$\bar{X}=1.38$	$\bar{X}=.63$	$\bar{X}=1.22$
	$\bar{X}=1.24$	$\bar{X}=1.19$	$\bar{X}=1.19$	$\bar{X}=1.42$	$\bar{X}=1.26$

*Group 1 contained 5 students; Group 2, 8; Group 3, 9;
Group 4, 8.

APPENDIX H

ATTITUDES OF SHORTHAND STUDENTS TOWARD MANNER IN WHICH
THEY WERE REQUIRED TO DO THEIR IN-CLASS PRACTICE*

Group	Read.	Trad. Hmwrk.	Shorthand from Print	Spot Writing	Group Average Over All Methods
1	3	2	1	1	
	3	1	4	3	
	1	1	3	2	
	2	2	2	1	
	2	1	3	4	
	$\bar{X}=2.20$	$\bar{X}=1.40$	$\bar{X}=2.60$	$\bar{X}=2.20$	$\bar{X}=2.10$
2	4	2	1	2	
	4	2	2	5	
	2	3	3	2	
	3	2	1	3	
	3	2	2	2	
	2	3	1	2	
	4	2	2	2	
	2	1	1	3	
	$\bar{X}=3.00$	$\bar{X}=2.13$	$\bar{X}=1.63$	$\bar{X}=2.63$	$\bar{X}=2.34$
3	3	2	5	5	
	4	2	1	3	
	2	3	1	4	
	2	2	1	1	
	4	2	2	5	
	4	2	1	2	
	3	3	1	1	
	2	2	1	2	
	4	2	1	2	
	$\bar{X}=3.11$	$\bar{X}=2.22$	$\bar{X}=1.56$	$\bar{X}=2.78$	$\bar{X}=2.42$
4	3	2	1	4	
	4	2	2	3	
	2	2	1	1	
	2	1	3	3	
	4	2	3	2	
	3	2	2	2	
	2	1	3	2	
	2	3	2	1	
	$\bar{X}=2.75$	$\bar{X}=1.88$	$\bar{X}=2.13$	$\bar{X}=2.25$	$\bar{X}=2.25$
	$\bar{X}=2.83$	$\bar{X}=1.97$	$\bar{X}=1.90$	$\bar{X}=2.50$	$\bar{X}=2.30$

*1=like extremely well; 2=like; 3=mild dislike; 4=strong dislike; 5=indifferent.

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