AN EXPERIMENTAL STUDY COMPARING THREE METHODS FOR STUDENT OUT-OF-CLASS PRACTICE IN INTERMEDIATE COLLEGIATE GREGG SHORTHAND

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Malcolm E. Lund

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This is to certify that the

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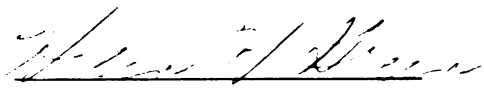

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ABSTRACT

AN EXPERIMENTAL STUDY COMPARING THREE METHODS
FOR
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IN
INTERMEDIATE COLLEGIATE GREGG SHORTHAND

By

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THE PROBLEM

This was an experimental study to compare the effectiveness, under controlled conditions, of three different methods of doing out-of-class practice in intermediate Gregg shorthand at the college level.

All methods of out-of-class practice compared were based on the textbook used in the course. Method A was the traditional method; students were asked to read the entire lesson once and then write all of it legibly once from self-dictation. In Method B, the assignment was to limit the study of the lesson to reading it, though the lesson could be read two or three times. Method C made use of tapes prepared especially for this study. The text lessons were recorded at a rate to force speed, and students were asked to spot-write the lesson once from the taped dictation while reading and keeping eyes on the text copy.

The secondary purposes of the study were: (1) to compare the study time required by each of the methods, (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 takes, (3) to determine from reported student reaction whether there was a significant correlation between liking a method and the ability to take dictation, and (4) to determine whether there was a significant correlation between the SCAT Total score and the ability to take dictation.

PROCEDURES USED

All of the students (56 at the outset) enrolled in Intermediate Shorthand at Ferris State College during the spring quarter, 1971, were the subjects in this study.

The SCAT Verbal and Total scores, and the two pretests, Take I and Theory I, were used as covariates. There were no significant differences between the classes after equating them with the covariates.

In the two-by-two design which was used, each member of one class used a randomly assigned experimental method to do out-of-class practice during Part I of the study; the other class used the holding method which consisted of one-time reading and one-time spot-writing the lesson from self-dictation. The procedures in the two classes were reversed during the second half of the study.

Dictation-transcription tests and theory tests given at the beginning of the study, the end of Part I, and the end of Part II were used to measure and compare student achievement by methods of study.

The analysis of covariance tested the effects of the treatments and the interaction of classes with treatments. A repeated measures analysis of variance was done on the results from Class I to test for immediate and delayed treatment effects.

Daily reports of time used in study and an opinionnaire completed at the end of the experiment were also collected.

FINDINGS AND CONCLUSIONS

The results of 50 students were included in the analysis of covariance; 15 of these students reported having done considerable extra study. When these 15 students' scores were removed and the tests re-run, there were no major changes in any test results. The multivariate analysis of covariance test of treatments found the probability to be less than .5504 for the full group. Therefore, it was not possible to conclude one method to be better than the others.

The repeated measures analysis of variance done on the results from Class I found no significant differences between the subgroups or between the accomplishments in Part I and Part II for this class.

The analysis of covariance checked for differences in accomplishments in Parts I and II; there were no significant differences. However, five of the six subgroups made the major portion of their word gains during Part II of the study, and the total gain for the quarter by all six groups

was similar though not evenly divided over the quarter. Also, though not statistically significant, Class II, which used the experimental methods in Part II, averaged 8.62 more words gained per student during the experiment.

Those who used Method C (spot-writing from taped dictation) studied an average of 11 minutes daily, which was considerably less time than that spent by any of the others. Those who used Method A averaged 31 minutes; those who used Method B averaged 29 minutes; and students using Method D (holding) averaged 22 minutes. There tended to be a negative correlation, though not significant, between the amount of study time and the results from transcription tests.

The correlations between takes and theory tests were not high enough to be considered significant. Although students basically did not like any of the study methods, there was little correlation between attitude and achievement in taking dictation. Also, the correlations between Takes and SCAT Total scores were all low.

Conclusions from the experiment were: (1) more use should be made of Method C, spot-writing from taped dictation, because of the time factor; (2) there is likely to be more achievement during the last half of the term of school than during the first half; (3) students are highly distressed at having their study severely limited; and (4) personalized out-of-class practice assignments are needed in college intermediate shorthand.

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By

Malcolm E. Lund

A THESIS

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DEDICATED

To Mabel M. Lund, my mother, whose interest in learning was always great. Though she died shortly before this study was finished, its completion would have pleased her.

ACKNOWLEDGMENTS

To all the people who helped, in many diverse ways, to complete this study, thank you. Some of you who helped may not have known it; others may have helped of whom I was not aware. To each of you I am most grateful.

To my family, particularly my wife, Fran, and our children--Cindy, Missy, Doug, and Jeff--special thanks is due. Their patience, understanding, and assistance through the time of this work has been appreciated.

Advisors, too, are most appreciated; particularly one such as Dr. Helen H. Green. A very special thanks to her for all her helpful assistance and guidance in the right ways at the right times. For their willingness to serve as called upon, gratitude is also expressed to the other members of the committee: Dr. Robert Poland, Dr. William Mann, and Dr. Stanley Hecker.

The statistical design and interpretations in the study have been completed with the generous assistance of both Dr. Andrew Porter and Miss Mary Kennedy; this help is gratefully acknowledged.

Appreciation is also expressed to the Ferris State College and Michigan State University librarians; to Dr. Jay Fennell, Head, Office Administration Department, Ferris State College, for scheduling to make the experiment possible;

to the Gregg Division of McGraw-Hill Book Company for permitting part of the text material to be recorded for use in this study; to Mrs. Mary Jane Cook for final typing of the entire study; and, of course, to each student in the two classes for participating in the experiment.

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THE PROBLEM

Shorthand is fascinating and fun. Most students in beginning shorthand classes are eager and willing to learn, ready to do whatever is necessary to acquire the new skill, including out-of-class practice. This is good, for as Peterson stated:

> Enrollment in shorthand generally means that the student is sentenced to a daily reading and writing assignment for the next year or two. Assignments are a necessary evil that students must face if they are going to develop a shorthand proficiency; but the tedium of completing the daily assignment in exactly the same way for over two years is often more than some students can bear. They find shortcuts that generally involve the mechanical copying of plates, rather than writing the assignment from self-dictation.
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> . . . . . .
>
> Most teachers accept the premise that shorthand is learned through meaningful reading and writing practice. Practice is important, but a steady diet of the usual practice routines may lead to uninspired student performances. These time-honored routines may represent the best approaches to developing speed, but they can quickly lose meaning for students.[1]

Are these time-honored routines the best approaches to developing speed? Very little has been done to determine effective ways of doing shorthand homework. In this study

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[1]John C. Peterson, "Add Variety to Shorthand Instruction," Business Education Forum, 25 (October, 1970), 15.

the problem is to investigate several methods of doing shorthand out-of-class practice.

NEED FOR THE STUDY

Development of a skill depends very much upon the learner and the effort he is willing to expend in learning the skill. Good instruction, on the other hand, requires that the teacher help direct these efforts of the learner--in class and out of class. A survey of the literature reveals that considerable attention has been given to what goes on in the shorthand classroom; only a limited amount of research has been done on the practice shorthand students do out of class.

Shorthand, however, is not unique in this situation. The following paragraph from Today's Education helps point up the general problem:

> Though hundreds of manuscripts knock at the door of Today's Education, scarcely one a year refers to successful practices or experiments or innovations affecting homework. Parents talk about homework. Students talk about it. But teachers don't write about it.[2]

Why does such a situation exist? Perhaps because it is difficult to control or know what is done outside the classroom, teachers assume that following the methods books and teacher's manuals is sufficient. But, as Calland pointed out in his study which compared currently proposed shorthand

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[2]"After All," Today's Education, 58 (November, 1969), 80.

methods with completed shorthand research, the majority of the methods proposed have not been validated by research.[3] Talking specifically about shorthand homework, he pointed out that "no research could be found on the importance of homework or the value of specific homework practices."[4] Further, he stated that no research could be found concerning the recommendation of most writers that homework writing practice should only be done after the material has been thoroughly read so that the student knows what he is writing.[5]

Waters, who was also concerned with shorthand homework, stated:

> 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.[6]

Visiting with shorthand teachers and reading the literature tend to confirm Waters' statement. However, a critical evaluation shows most of the homework procedures to be modifications of the one basic method in which students are instructed to read and write a lesson, either once or twice,

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[3]John Phillip Calland, "The Extent to Which Currently Proposed Shorthand Methods Have Been Substantiated by Research," (unpublished Master's thesis, The Ohio State University, 1964), p. 159.

[4]Calland, p. 146. [5]Calland, p. 155.

[6]Max L. Waters, "An Experimental Study of Programmed Shorthand Homework," (unpublished Doctor's dissertation, Colorado State College, 1963), p. 1.

with one-time writing being the most popular.[7] In the present study, one variation of the traditional method is compared with two other methods of doing shorthand out-of-class practice, neither of which is a variation of the traditional method.

A middle stage in the shorthand learning process was selected for this study for the reason that most of the studies completed have concentrated on the beginning and ending stages of shorthand. In over fifteen years of teaching shorthand, this investigator has felt that the middle period always seemed to be a vital one. This middle period is the time that "lights start clicking"--or perhaps never get turned on. The attrition in shorthand is generally high; dissatisfaction with out-of-class practice may be one of the factors. Yet Leonard, writing in Education and Ecstasy, comments:

> Ways can be worked out to help average students learn whatever is needed of present-day subject matter in a third or less of the present time, pleasurably rather than painfully, with almost certain success.[8]

Perhaps, results from this study may help teachers more confidently personalize assignments for shorthand out-of-class practice.

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[7]Bill G. Rainey, "Variations in Collegiate Shorthand Courses," Business Education World, 47 (February, 1967), 24.

[8]George B. Leonard, Education and Ecstasy (New York: Dell Publishing Company, 1969), p. 16.

PURPOSES OF THE STUDY

The primary purpose of this study was to compare the effectiveness of three methods of doing out-of-class practice in intermediate collegiate shorthand. The three methods were as follows:

A. The traditional or self-dictation method had the student read the lesson once from the textbook and after reading, write the lesson once from self-dictation.

B. The reading approach asked the student to read the lesson twice, reading aloud when possible. A third reading might be done if the student believed it necessary or desirable in order to read the material fluently (being able to read as rapidly as one speaks). Occasional words of interest, as determined by the student, might be written "in the air"; or, if the student believed it absolutely necessary, she might write these occasional words on paper.

C. The spot-writing-from-taped-dictation method required the student to write the lesson without any prior reading or study of the lesson, using tapes prepared especially for this study. There was no attempt to write line by line; but rather, the writing for a given letter was done in one "spot" while the student read and kept her eyes on the text copy.

The secondary purposes were (1) to compare the study time required by each of the out-of-class-practice methods; (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 of dictation; (3) to assess student reaction to the methods to determine whether there was a significant correlation between liking a method and the ability to take dictation; and (4) to determine whether

there was significant correlation between the Total score on the School and College Ability Test and the ability to take dictation. Student opinions, which had no statistical analysis, were also considered.

HYPOTHESES

The four primary hypotheses tested were these:

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, when using the spot-writing-from-taped-dictation method than will be achieved by students using the traditional method.

H_2: Students will develop greater skill in taking dictation of new material, as measured by the number of correct words on a criterion test, when using the spot-writing-from-taped-dictation method than will be achieved by students using the reading method.

H_3: Students will develop greater skill in taking dictation of new material, as measured by the number of correct words on a criterion test, when using the traditional approach than will be achieved by students using the reading approach.

H_4: All three methods of out-of-class practice will produce better results, as measured by the number of correct words on a criterion test, in the second half of the experiment.

ASSUMPTION

The assumption was made that teachers will have access to such materials and equipment as those used in this study.

DELIMITATIONS

The subjects in this study were limited to those students enrolled in the two classes of intermediate shorthand during the spring quarter, 1971, at Ferris State College, Big Rapids, Michigan.

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

LIMITATIONS

The fact that only two classes were included in the study might tend to give results different from results that might be obtained through the use of greater numbers.

There can be no absolute control over the actual practice students do out of class. The accuracy of the reports of the amount of time used in out-of-class practice was controlled totally by the students.

DEFINITIONS OF TERMS

The following terms are defined as used in this study:

Class I. The class which used the three methods of out-of-class practice being compared during the first part of the experiment and held during Part II.

Class II. The class which used the three out-of-class practice methods during the second part of the experiment after holding during Part I.

Daily. Used to refer to the four meetings per week of each class. Both classes met, one after the other, for a regular period of 50 minutes on the same four days of the week.

Extra-study students. Those students who indicated at the end of the experiment that they had done more study than they were requested to do, and had done so with regularity (more than once or twice in the course of the experiment).

Holding phase or Method D. Terms used interchangeably throughout the study to refer to the time when one of the classes studied out of class by spot-writing the lesson from self-dictation. This was actually a fourth method of study and not one of the three methods being compared.

Instructor or Researcher. Terms used interchangeably throughout the study to refer to the person who taught the students in the two shorthand classes and who also conducted the study.

Method A. The method of out-of-class practice in which students used a traditional approach in their shorthand study. They read the lesson once and then wrote it once from self-dictation, writing in the usual--legible--manner.

Method B. The method of out-of-class practice in which students studied by reading--and reading only--the assigned lesson two or three times.

Method C. The method of out-of-class practice in which students studied by listening to tapes of the text lessons prepared especially for this experiment by the researcher. While listening to the taped lesson, students watched their textbooks and spot-wrote the assignment.

Out-of-class practice or Homework. Terms used interchangeably throughout the study to refer to the practice of text material done by the students in the two classes outside regular class sessions. The specific way each subgroup was to do the assignment was carefully explained in each part of the study.

Part I. The first arbitrary division of the time available in the spring quarter which was divided into two parts for purposes of the study. Part I had 16 class sessions in it, and there were 15 out-of-class assignments made.

Part II. The second, and final, part of the quarter devoted to this experiment. There were 14 class sessions and 14 assignments made in Part II. One day in this part was "lost" because of an official school event announced after the experiment was under way.

Gregg Shorthand, Diamond Jubilee Series. The 1963 edition of the shorthand system first published by John Robert Gregg on May 28, 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 abbreviated word forms to be learned was lessened, and some abbreviating principles were eliminated.

Intermediate shorthand. The third quarter of Gregg Shorthand, DJ Series, taught at the college level. Shorthand theory is covered in the two preceding quarters, and the primary emphasis in this quarter is further development of the ability to take dictation.

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

Subgroups. The small groups into which the two classes were divided. Each of the two classes was divided into three subgroups. Each of the subgroups was assigned one of the methods for doing out-of-class practice of the shorthand text material as follows: I-A and II-A, traditional; I-B and II-B, reading; and I-C and II-C, tapes.

Take. 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, students then transcribed either by hand or on a typewriter. The transcripts were then checked for the number of words that had been transcribed exactly as they had been dictated. The number of correct words were then used in the statistical analyses.

Taped dictation. The dictation which was recorded from the textbook lessons 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 letters and other connected material of the lessons were all dictated at the speed-forcing rate of 100 words per minute. The isolated, introductory words were dictated at the rate of approximately one word every two seconds.

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 four seconds; students wrote the words in shorthand and transcribed them upon completion of the dictation. The tests were checked for both the writing of shorthand according to Gregg theory and the accurate transcription of the shorthand. The primary concern on the theory tests, however, was with the correctness of the recorded shorthand.

ORGANIZATION OF THE STUDY

The organization of the study is as follows:

Chapter I: The Problem
Chapter II: Review of Related Literature
Chapter III: Methods and Procedures
Chapter IV: Findings
Chapter V: Summary, Conclusions, and Recommendations

Chapter 2

REVIEW OF RELATED LITERATURE

This chapter is divided into three parts: (1) Evolution of theories and opinions concerning the learning of Gregg Shorthand, (2) Research and opinions concerning out-of-class practice in Gregg Shorthand, and (3) Summary.

EVOLUTION OF THEORIES AND OPINIONS CONCERNING THE LEARNING OF GREGG SHORTHAND

Areas of Agreement and Disagreement

There has always been general agreement among teachers of Gregg shorthand that certain techniques produce shorthand mastery on the part of their students. Such techniques were (a) mastery of shorthand theory and automatization of the brief forms, (b) reading of shorthand, (c) spelling of shorthand outlines, (d) copying shorthand from shorthand plates, (e) writing shorthand from dictation, (f) transcribing from shorthand notes into typed copy, and (g) doing out-of-class homework.

There also has been disagreement, however, upon the emphasis and the amount of time to be given to each of those techniques. Much of this disagreement has been based upon experience and empirical evidence, rather than upon research, with individual teachers staunchly supporting whatever techniques or methods worked best for them and those in which they believed.

Some portions of the controversies arose also from the fact that certain practices and procedures essential to the mastery of other shorthand systems, such as Pitman, were of no importance in the learning of Gregg shorthand, a discrimination which many teachers failed to discern or grasp. Since Pitman was a well-entrenched system in both England and America in 1893[1] when Gregg introduced his system in this country, many of those familiar with the Pitman system simply carried over into Gregg their beliefs concerning what they thought must be mastered to learn a shorthand system. Therefore, Gregg had to make certain compromises and concessions in the system after the first edition was published in England in 1888 in order to sell the system. His first book contained only 28 pages, without rules, but included a printed key for all the connected matter.[2] Leslie stated "that little book was 50 years ahead of the times."[3] Further, Leslie pointed out that:

> It took 61 years before the original simplicity of the 1888 edition was regained, in a 1949 edition in which are found the same three characteristics--no rules, a printed key to the connected matter, and simple, cursive outlines requiring the minimum effort of memory.[4]

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[1]Ruth Irene Anderson, "An Analysis and Classification of Research in Shorthand and Transcription" (unpublished Doctor's dissertation, Indiana University, 1946), p. 100.

[2]John Robert Gregg, Light-Line Phonography, The Phonetic Handwriting (Liverpool: Light-Line Phonography Institute, 1888). McGraw-Hill, Inc., facsimile reproduction, 1971.

[3]Louis A. Leslie, Methods of Teaching Gregg Shorthand (New York: McGraw-Hill Book Company, Inc., 1953), p. 14.

[4]Leslie, p. 16.

While it is not the purpose of this chapter to develop or trace the growth and development of Gregg shorthand as the predominant system taught in the United States today, a brief examination of the evolution of both theories and opinions concerning the system and the best methods of mastering it will help place both this study and the research concerning homework in perspective.

Early Shorthand Emphasis (Science-type Teaching)

Science-type teaching places great importance on each student learning and knowing the rules of the system. Since most of the early teachers of Gregg shorthand were originally trained in other systems such as Pitman which required the mastery of rules and theory, they also "demanded" them in the Gregg system; so more and more rules were included to comply with the demands. However, as Leslie pointed out:

> The inventor's own attitude toward the rules in his texts was very casual. He never could understand why teachers seemed to place so much importance on rules, because in his own teaching he paid little or no attention to them.[5]

Nonetheless, in the early books the teachers' wishes were met; his first book was revised after four years and the so-called Anniversary Edition appeared in 1916. Both of these editions had lessons with long word lists, rules, and very little reading material (one page per lesson). Thus, up until the 1930's, Gregg shorthand was taught and learned largely as Pitman shorthand had been taught and learned;

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[5]Leslie, p. 16.

that is, with emphasis upon rules and principles with the concommitant heavy memory load, intensive practice on individual outlines, and intensive practice on very limited connected material. The change which occurred with the introduction of the Functional Method, discussed in the next section, was reflected in the textual materials. The Anniversary Edition contained 173 pages; the Functional books, about the same in page size, contained over 600 pages in two volumes to be covered in first-year shorthand.

Shifting Emphasis with Functional Approach (Language-art Teaching)

Though Gregg shorthand introduced a number of major changes as a shorthand system--such as no shading and no position required for a character--the memory load in the Anniversary Edition was heavy and caused many dropouts. So with this background, Louis Leslie first publicly announced the Functional Method in December, 1934, and teachers began using it in 1935.[6] Others such as Kimball, Hyde and Leuba, and Morris had earlier learned the value of a reading approach.[7] Leslie, however, became convinced of the value of reading shorthand independently and quite by accident through his mother's learning of shorthand. Extensive reading of much connected shorthand became the main point of his revolutionary Functional Method for teaching Gregg shorthand.

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[6]Leslie, pp. 37-38.

[7]Leslie, pp. 22-23.

In comparing and contrasting science-type and language-art teaching of shorthand, Leslie stated:

> The language-art learner is taught to automatize the correct shorthand responses without verbalizing or consciously knowing the rules, principles, or generalizations. He not only does not know the rules or generalizations, but he does not know that there are any generalizations to know.[8]

So in the Functional Method, no rules were presented for students even to consider. As was mentioned, reading was emphasized, especially in the beginning when the recommendation was made that no writing take place until students had read shorthand for about four weeks. In the classroom, questions from students were discouraged and there was much greater emphasis on dictation than with previous methods. Practice was to be extensive rather than intensive; with the Functional Method also came the traditional method of doing homework--read the lesson once and copy it once.

It should be noted that the Functional Method was just that, a teaching-learning approach only which did not change even one outline from the way it appeared in the Anniversary Edition. Not all teachers were ready to adopt Leslie's revolutionary language-arts approach, and so they continued with the Anniversary Edition with its rules and very limited amount of connected shorthand copy.

The Simplified Edition which followed in 1949 took these differences of opinion into account. This edition is discussed in the next part.

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[8]Leslie, p. 46.

Simplified Emphasis

The beginning books of the Simplified Edition of Gregg shorthand published in 1949 were presented in two versions. The Manual was for those teachers who had stayed with the Anniversary Edition and preferred teaching rules. There were fewer rules, however, because the system had been simplified. The Manual contained more connected material, almost as much as was presented in the Functional version. The Gregg Shorthand Manual Simplified, Functional Method, now emphasized the reading, contained a printed key, and omitted the rules. The amount of new learning presented in each assignment was reduced, and fewer assignments were needed to cover the theory. These were the first important changes in theory since the system was first published in 1888.

The theory learning was reduced through the omission of several hundred brief forms and other similar memory forms, sixty-six word beginnings and endings, twenty-six general rules or principles, and thirteen phrasing devices.[9]

With the two beginning books available in the Simplified Edition, teachers could elect to use either a science-type approach or a language-arts approach, or an admixture of both. Both books were followed by a common dictation book.

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[9]John Robert Gregg, Louis A. Leslie, and Charles E. Zoubek, Gregg Shorthand Manual Simplified (New York: The Gregg Publishing Company, 1949), p. iii.

Diamond Jubilee Emphasis

Leslie and others, still dissatisfied with the heavy memory load in the Simplified Edition, worked for further simplification and published the Diamond Jubilee Edition of Gregg shorthand in 1963. The changes made were not so numerous or drastic as those made in the Simplified Edition. The shorthand notes of students and stenographers were checked to see what they actually wrote, and the resulting information was part of the criteria on which changes were based. Further effort was also made to balance the amount of theory presented from one lesson to the next. The brief forms were reduced from 184 in the 1949 edition to 129 in the DJ; this reduction of 55 brief forms represented 79 words and was the result of more than ten years of work by the authors.[10]

Although skeptical at first of the DJ changes in theory since many shorthand outlines were now longer-to-write outlines, teachers were won over because DJ proved easier to learn. Students could write the longer outlines more quickly and easily than they could remember a shortcut for a shorter outline. Furthermore, they could read and transcribe the longer outlines more readily. As for method, DJ teachers seem to have aligned themselves along a continuum between strict science-type teaching on one end and pure functional or language-arts type teaching at the other

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[10]Gregg Shorthand, Diamond Jubilee Series: A Presentation of System Changes, College Program (New York: Gregg Division, McGraw-Hill Book Company, 1965), p. 15.

extreme, with the majority much nearer the language-arts teaching than the science-type teaching.

But the majority still seemed to accept that Leslie's suggestion for doing homework, which has come to be called the "traditional way," was the one best way to do it. Perhaps the fact that this way, "read the lesson once and write it once," was invariably suggested in the Teacher's Manual for every edition of the books--whether the manual or functional type book--may have had something to do with its continuance. Also, since most of today's teachers received their instruction during or later than the 1930's, they continue to assign homework as they themselves had been assigned to prepare it in the "traditional" manner.

However, with increasing emphasis evolving upon the importance of taking dictation and transcribing dictation as the two most important facets of shorthand learning, certain teachers and educators began to question the traditional method of doing homework. Out-of-class practice, however, seems to be one of the least questioned areas of shorthand learning.

With an ever-expanding fund of knowledge crowding the curriculum, it behooves those concerned with shorthand to endeavor to maximize success in acquiring the skill while using a minimum amount of time. This mimimum amount of time needs to include the out-of-class practice, too. The remainder of this chapter is concerned with investigations and writings pertaining to shorthand homework.

RESEARCH AND OPINIONS CONCERNING OUT-OF-CLASS PRACTICE IN GREGG SHORTHAND

There seems to be agreement among shorthand teachers that if homework is to be an effective part of the shorthand program, it must be planned for by the teacher and explained to the students. Further, Leslie stated that:

> The homework assignment should be designed to reinforce the teaching and to cause the greatest possible amount of learning with the smallest possible expenditure of the learner's time and effort.[11]

Additional opinions and results of research concerning out-of-class practice in Gregg shorthand follow.

Traditional Homework

Because of its importance in shorthand study, a fuller explanation of "traditional" homework is presented. Most of the shorthand textbooks now in use are lesson-planned books. With such a book, the teacher simply decides how students are to do each assignment, makes the assignment at the beginning of the term, introduces each new lesson briefly, and the homework is considered taught. By the time students get to intermediate shorthand, the assignment may be standardized regardless of which approach (reading or writing) was used in the beginning. The time saved by such procedures makes a convincing argument.[12]

Leslie commented that "the most effective practice, minute for minute, is the copying of large amounts of graded

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[11]Leslie, p. 61.

[12]Leslie, p. 70.

connected material once." His assignment recommendation is to have students read the lesson and copy all of the graded connected material of the lesson once.[13]

The following information and teaching suggestions are in the teacher's manual for the text used in this study.

> Gregg Shorthand for Colleges, Diamond Jubilee Series, Volume Two, like Volume One, is lesson-planned. . . . This organization makes it possible for the teacher to make a blanket homework assignment at the beginning of the term, so that the students know exactly what material they will be responsible for on any given day.
>
> . . . . . .
>
> For homework, the students should read the words in the drill and make a shorthand copy in their notebooks.
>
> . . . . . .
>
> Finally, they should make a shorthand copy of the Reading and Writing Practice in their notebooks, reading aloud as they write.
>
> Students should complete the corresponding lesson in Workbook for Gregg Shorthand for Colleges, Diamond Jubilee Series, Volume Two. . . .[14]

These suggestions by the authors, excluding the Workbook, were considered in this study as the traditional homework procedures: read aloud the shorthand plate material in the text and write it once, in shorthand, from the text plates. Some teachers, of course, question this method as being the best or most adequate method.

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[13]Leslie, p. 77.

[14]Louis A. Leslie, Charles E. Zoubek, and Russell J. Hosler, Instructor's Handbook for Gregg Shorthand for Colleges, Diamond Jubilee Series, Volume Two (New York: Gregg Division, McGraw-Hill Book Company, 1965), pp. 1-8.

Recorded-Dictation Homework

A number of educators interested in shorthand have written articles indicating a concern that students get their copy for homework practice from dictation. What some of them had to say follows:

> Mitchell: Copying the letters in a steno pad is a worthwhile process if the student concentrates on what he is doing. If you can provide the student with measured dictation, he must go through his thought processes to write shorthand. Beginning with Lesson 25 (assuming that the class has shown through class activities that they have developed acceptable writing techniques) our students take their homework from dictation. We have provided three different speeds which are gradually raised throughout the year so that the students are forced to move to higher speeds.[15]
>
> Crunk: Shorthand writing from reading wastes much practice time; this slow writing response called for has little relationship to writing for fluency from dictation.[16]
>
> Hosler: It is my judgment that a student who does his homework by writing shorthand from sound will be employing a more effective procedure for maximum shorthand skill growth than one who does his homework entirely by copying shorthand outlines from the plated material in the textbook. . . . It is assumed that the student would have read his assignment and practiced writing at least individual outlines in advance of going to the open lab for this out-of-class practice activity.[17]

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

[16]Dorothy E. Crunk, "Learning Psychology and Shorthand," Business Education Forum, 23 (November, 1968), 18.

[17]Russell J. Hosler, "The Open Lab for Shorthand Instruction," Business Education World, 48 (May, 1968), 7.

> Stuart: In all repetition practice, he must associate the sound pattern with the writing pattern that records it in shorthand until the necessary movements are executed automatically when the sound pattern is heard in the sound stream of dictation. . . . Repetition practice to establish this association should be done while listening to the voice of a dictator.[18]

Research, formal and informal, has been done which made use of such ideas above which included recorded dictation in the homework assignments.

Hess study.[19] In this study done by Hess in intermediate shorthand classes at Northeast Louisiana State College, the primary purpose was to discover objective evidence relating to the influence of a shorthand laboratory on learning shorthand; Gregg Diamond Jubilee shorthand was taught. Part of the study compared the use of the shorthand laboratory within the classroom only with the use of the shorthand laboratory in a combined in-class and out-of-class utilization. Three classes were used in the study: a control group (teacher conducted with "live" dictation) and two experimental groups. Experimental Group I used the shorthand laboratory only during class; Experimental Group II used the laboratory during the regular class and also for out-of-class assignments. In the homework, Experimental

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[18]Esta Ross Stuart, "How to Get the Most Out of Repetitive Shorthand," UBEA Forum, IV (October, 1949), 15.

[19]Susan J. Hess, "The Comparative Performance of Students in Intermediate, Collegiate Shorthand Taught by Contrasting Teaching Methods" (unpublished Doctor's dissertation, Indiana University, 1969).

Group I used self-dictation (referred to as the traditional method in the present study); and Experimental Group II recorded from taped dictation for the dictated part of each assignment. It was believed that homework assignments were heavy enough that students were unlikely to have attempted additional homework. As a general pattern, the introductory words were written three times each and selected letters also were written three times each.

After post-test scores were adjusted for initial differences in covariates, terminal scores for the three groups were not significantly different. One of the conclusions was that the shorthand laboratory had neither a positive nor a negative effect on shorthand learning; so another method of homework succeeded as well as the traditional method.

The reactions of the students in the Hess experiment to the use of the shorthand laboratory for taped dictation were of interest in the present study. Students liked the laboratory when used as a part of the total classroom teaching method, but did not like it for providing the sole means of instruction. As a method for doing homework, the students were overwhelmingly in favor of the shorthand laboratory for doing the dictation part of the assignments. All of the students who used this method indicated that they preferred to do so, and even 44 percent of those in Experimental Group I who had used self-dictation in their homework believed they would prefer the taped dictation. They had

used taped dictation during the class sessions. A difference between the two studies was that in the Hess study the students who recorded from taped dictation did so in the regular, legible fashion; in the present study, the students who recorded their out-of-class practice from taped dictation did so by spot-writing at a forced-writing rate.

Cook system.[20] For some time, teachers have been aware of the value of practicing shorthand from the spoken word as well as the written word. "Too often the student's reaction to the homework assignment has been to either ignore it, or hastily scribble the outlines as they read it just before coming to class." Cook, writing about twenty years ago, went on to say that "a procedure has been evolved that makes the student mentally participate in each assignment." Using dictating equipment, each student in the class was responsible for dictating a given portion of the course work onto belts, which were in turn used by the others in the class.

In doing the homework, students read the letters in the lesson aloud and then wrote each letter once from the plates in the left hand column of the notebook. Next, listening to the recorded dictation, students wrote the same letters in the right hand column of the notebook; finally they read the dictation notes back and compared them with those written from the text plates. Cook stated that both he and the

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[20]Fred S. Cook, "Shorthand Homework Assignments Made More Effective Through the Use of a Voice Recording Machine," The Balance Sheet, XXXIV (April, 1953), 340.

students were highly satisfied with the results of this system; and he made use of it in all his classes, even the beginning groups after they started to write. A system of homework different from the traditional seemed to be successful.

Jones method.[21] In discussing homework, Russon tells of the work Ellis Jones has done with recorded dictation.

> Dr. Jones dictates the homework assignments on a Dictaphone disk at a speed about 20 words a minute faster than the students can take. The students take dictation from the disks but have their books open to the lesson being dictated for additional help. If the speed of the dictation is too fast, the student can stop the dictation by pressing on the foot pedal to stop the machine and backspace if necessary. Students using the foot pedal method of practicing homework have made remarkable progress.[22]

Because they used Dictaphone disks, Jones' students had a control the students in this study did not have. Though the students in this study did write from taped dictation with their books open, they were not able to stop the dictation, backspace, and listen again.

Hanson study.[23] Hanson stated that:

> there is agreement among shorthand teachers that the student who is doing his homework will benefit

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[21]Allien R. Russon, Methods of Teaching Shorthand, Monograph Number 119 (Chicago: South-Western Publishing Company, 1968), p. 23.

[22]Russon, p. 23.

[23]Robert Nelton Hanson, "Visual Stimulus Versus Combined Audio-Visual Stimuli for Out-Of-Class Practice in First Semester College Gregg Shorthand" (unpublished Doctor's dissertation, The University of North Dakota, 1966).

> only to the extent that he concentrates on the symbols and their phonetic sounds. Devices are desired which will minimize this lack of concentration and discourage daydreaming on the part of the learner.[24]

In his study with first-semester college Gregg (Diamond Jubilee) shorthand students at Illinois State University at Normal, Hanson used recorded dictation as one device.

He compared the traditional method, self-dictation from textbooks, with a method using the textbooks and tape-recorded dictation of the textbook plate material. The second, or experimental group, kept their textbooks open for reference while taking dictation. The conclusion he reached was that the control group achieved a superior knowledge of the principles of the shorthand system (at the .01 level) compared to the experimental group. However, neither method proved superior in the development of skill in reading from textbook plate material after 15 clock hours of instruction, or in writing from practice-matter dictation after 30 clock hours, or in writing from new-matter dictation after 45 clock hours of instruction. Attendance records and out-of-class practice hours for the two groups were almost identical.

Although the methods used by the control group and the experimental group were similar to two of the methods used in the present study, they were used with beginning shorthand students. The immediate objectives for beginning shorthand are different from those in intermediate shorthand

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[24]Hanson, p. 4.

classes since beginning classes are more concerned with theory knowledge and intermediate classes put primary emphasis on building dictation-taking skill.

Workbook Homework

A fairly common belief about the use of a workbook in shorthand classes was expressed by Zoubek when he wrote, "A workbook is not necessary; but, as in the teaching of junior business, bookkeeping, typing, or arithmetic, it is highly desirable."[25]

Rittenhouse study.[26] Would use of the workbook also be desirable at the college level? To help answer this question, Rittenhouse conducted a study in which 74 students enrolled in five classes of beginning shorthand at four colleges were the subjects. She had both the control group and the experimental group follow the conventional-type homework, which tends to be a language-arts approach. To the experimental group, however, she added the doing of the evolutionary drills from the Gregg Shorthand Workbook, a science-type practice.

To compare the progress of the two groups, three-minute dictation tests were administered during the final two weeks of the year. Based on the results of the tests,

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[25]Charles E. Zoubek, "Homework Queries," Business Teacher, 39 (November, 1961), 21.

[26]Evelyn Jane Rittenhouse, "A Study of Certain Factors Influencing Success in the Learning and Achievement of Shorthand" (unpublished Doctor's dissertation, Michigan State University, 1968).

Rittenhouse concluded that the addition of the workbook practice to the conventional homework did not significantly affect achievement.

Although a workbook method of homework was not used in the present study, the work by Rittenhouse is of interest. The text authors, as pointed out earlier, did recommend the use of a workbook. In addition, Rittenhouse found that adding the use of a workbook to the traditional method of doing shorthand homework did produce results comparable to using the traditional method alone; therefore, it was decided not to include the workbook in this study.

Print-into-shorthand Homework

Leslie presented the case against using printer's type as a basis for practicing writing into shorthand. He pointed out that constructing the outlines from print, a visual stimulus, is different from constructing them from dictation, an auditory stimulus. More important than this, he said, is that writing from print into shorthand allows the reader too much time to think about how to write the outlines; and he is too apt to carry this over into dictation taking periods. It is his belief that the habits needed for writing shorthand are best developed from practicing copying from well-written shorthand plates.[27] The following studies compared these methods of homework.

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[27]Leslie, pp. 191-193.

Waters study.[28] Waters conducted an experimental study in intermediate shorthand classes at Brigham Young University to compare two methods of doing shorthand homework. The control classes used a traditional approach suggested by the teachers' manual and the experimental groups used programmed materials prepared for the study.

Only students who had completed one or two years of Gregg shorthand in high school were included in the study, and each class contained an equal balance of students from these two groups. There were four fall-semester classes and two spring-semester classes included in the study; classes ranged in size from 25 to 33 students, and students were randomly assigned to the experimental and control classes.

During the class periods, all instruction was presented on magnetic tapes for the entire semester. Both groups covered the same Gregg Simplified materials, in class and out of class, so the only difference was the manner in which they completed their out-of-class study. Both groups were to read the assigned letters until they could be read fluently. Next they were to practice writing the assigned letters; the control group was to write each letter three times at least, and the experimental group was to write the letters in the specially prepared Dictaprint (writing into

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[28]Max L. Waters, "An Experimental Study of Programmed Shorthand Homework" (unpublished Doctor's dissertation, Colorado State College, 1963).

shorthand from print). Then both groups were to write the letters in a separate shorthand notebook for use in class. The introductory words and phrases were studied differently by the two groups; the experimental group had them introduced in their home study, and the control group students received a syllabus containing a list of the same words given the other group.

Tests (takes) three minutes in length dictated at 100 words per minute were used as pretests and also to test at the end of the semester. The total words transcribed correctly were used as the basis for evaluating student transcripts. Waters found that the experimental treatment, the programmed homework, generally had a significant effect on the terminal achievement of students. Further, he found that those with one year of previous shorthand instruction in the experimental groups made significantly greater gains over the one-year people in the control groups. Those students with two years of previous instruction tended to make the same gain regardless of which method of study they used.

The same general course of instruction in shorthand--college intermediate--was used in both the Water's study and this experiment. Although the out-of-class practice methods used in his study, even the traditional, differed from those followed in this experiment, his findings showed once more that a method other than the traditional could be used successfully for shorthand homework.

Stocker study.[29] Eighteen pairs of students were used by Stocker in his study done at Utah State University in beginning Gregg shorthand; the students were assigned to one of two groups according to study method. The control group was taught using traditional methods, and the experimental group was taught using the DictaTutor method. The DictaTutor was devised for this study with the purpose of enabling the student to write without constantly having to shift his eyes from his text to his writing paper, and was designed to use the printed word. The DictaTutor was prepared so that a writing "window" could be cut in the paper under each three lines of print. Material from each lesson was limited so there were not more than two pages in each DictaTutor lesson.

Use was made of the DictaTutor in class as well as in the homework. The control group used the same letters in their work, and as homework they were to practice the words in the introductory lists a minimum of three times. They also were to read the shorthand plates for the assigned letters from the lesson until they could be read without hesitation and then were to write the assigned material a minimum of three times.

In addition to brief form and theory tests, a progressive dictation speed test was given during the final

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[29]Henry R. Stocker, "An Experimental Study in the Utilization of the DictaTutor as a Classroom and Homework Teaching Aid in Beginning Collegiate Shorthand" (unpublished Master's thesis, Utah State University, 1968).

examination period. Based on the results of the tests, Stocker concluded that students using the DictaTutor were able to transcribe a recorded letter dictated at progressive rates of speed significantly better, at the .05 level, than could the students who learned shorthand through the use of traditional methods.

Gregory study.[30] Using two sections of beginning shorthand in the Idaho Falls High School, Gregory conducted his study during the last half of the first semester. Thirty-four students were blocked in pairs and one member of each pair assigned to a given method. Intact classes were used so that both methods of doing homework existed in each class. Identical procedures were used in the classroom, and Gregg Diamond Jubilee was the system learned.

Both the control group and the experimental group did the preview words in the same manner. The control group read the assigned letters twice from the text and were then to use the line-skip method of writing them in their notebooks three times. Students in the experimental group were to read the assigned letters once and then transcribe the letters on the typewriter, making one carbon copy, using triple spacing. Using these transcripts, they were to write the lesson twice, once on the original copy between typed

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[30]Darvel J. Gregory, "A Comparative Study of Two Methods of Writing Shorthand Homework" (unpublished Master's thesis, Utah State University, 1968).

lines and once on the carbon copy. The same tests (progressive-speeds letter, from 60 to 130 words per minute; brief forms; and vocabulary words) were used for the pretest and the posttest. The results of the dictation portion of the test showed the experimental students recorded the letter dictated at progressive rates of speed significantly better, at the .05 level of probability as measured by their ability to transcribe accurately their own notes on the typewriter, than did students in the control group.

These studies by Gregory and Stocker indicated another method, writing from print into shorthand, that compared favorably with a version of the traditional approach.

Reading Homework

There has been considerable attention given to the reading of shorthand, and some research, but not necessarily to doing homework by reading except as a part of the traditional method.

In an early study, Bedinger found that 87 percent of the teachers thought reading ability was very important and that the ability was developed from reading shorthand plates.[31] More recently, Haggblade concluded in his study that the ability to read and comprehend shorthand rapidly

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[31]Samuel C. Bedinger, "The Present Status of Shorthand Methods" (unpublished Master's thesis, Colorado State Teachers College, 1934), p. 35, cited by Anderson, "An Analysis and Classification of Research."

was important because of the high relationship discovered between transcription speed and shorthand reading ability.[32]

Others, too, concurred on the importance of reading shorthand. Emond commented that "Because fluency in reading is the basis of fluency in transcribing, it remained one of the objectives throughout the program."[33] Hamilton, in the report of her study in Anderson's work, stated that "A strong positive relationship existed between the ability to read shorthand and the ability to write shorthand."[34] Still another, Mitchell, said, "Why must a student read at 200 wam? There is a high correlation in reading speed and writing speed; generally a student who reads well also writes well."[35]

Because of such beliefs concerning the value of reading shorthand, teachers generally expect students to read the

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[32]Berle Haggblade, "Factors Affecting Achievement in Shorthand" (unpublished Doctor's dissertation, University of California, Los Angeles, 1965).

[33]Mother St. Laurent Emond, "An Exploration of the Possibility of Accelerating the High School Shorthand Course Through the Use of Records for Classwork and Homework in Conjunction with Basic Texts," Thesis Abstract (New York: Dictation Disc Company, 1965).

[34]Gladys Hamilton, "Some Comparisons Among Records of Photographic Studies of Eye Movement in Reading Shorthand and Records of Achievement in Stenography" (unpublished Master's report, The University of Chicago, 1940), p. 495, cited by Anderson, "An Analysis and Classification of Research."

[35]Mitchell, p. 12.

shorthand plates in the text for the assigned lesson. Based upon this belief, the usual assignment is to read the lesson and then write it. In checking on this, Calland wrote:

> Homework writing practice should take place only after the material has been thoroughly read so that the student knows what he is writing. This was expressed by most of the writers. Many suggestions were made by one writer as a variety of techniques for homework writing practice.
>
> No research could be found relating to this subject.[36]

How one group of students actually studied was included in the analysis by Campbell. She found that "Ninety pupils read the assignment in the book before writing it; 93 did not."[37] Danneman made the following suggestion for those teachers who want to know something of the student's concentration in doing the written work:

> A reading from homework notes will show you how well the student has prepared the writing portion of his assignment and whether he used the self-dictation method, or just automatically copied from the text.[38]

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[36]John Phillip Calland, "The Extent to Which Currently Proposed Shorthand Methods Have Been Substantiated by Research" (unpublished Master's thesis, The Ohio State University, 1964), p. 155.

[37]Helen L. Campbell, "An Analysis of the Study Habits of Pupils in Shorthand" (unpublished Master's thesis, University of Pittsburgh, 1931), p. 790, cited by Anderson, "An Analysis and Classification of Research."

[38]Jean Danneman, "Reading--the Road to Shorthand Skill, Business Education World, 40 (January, 1960), 26.

That students can read more shorthand outlines in a given period of time than they can copy seems logical. Crandall found that:

> At the end of approximately twenty-nine weeks of shorthand training using the functional method, students can read shorthand outlines for 400 standard words in a thirty-minute practice period, as compared with copying the same number of outlines in the same period of time, on a ratio of 2.4 to 1.[39]

In addition, he concluded that given comparable practice periods of thirty minutes, those who studied by copying shorthand outlines increased in accuracy of writing shorthand outlines more than students who studied by reading; but the ones who studied by reading increased in speed of writing shorthand outlines more than the ones who studied by copying.[40]

These results appear to go along with what Riessman had to say about styles of learning:

> Everyone has a distinct style of learning, as individual as his personality. These styles may be categorized principally as visual (reading), aural (listening), or physical (doing things), although any one person may use more than one.[41]

Such differences may account for the fact that in his study, Crandall did not find complete agreement in student

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[39]Lars G. Crandall, "An Experimental Determination of the Merits of Two Methods of Studying Shorthand--Reading as Against Writing Shorthand Outlines" (unpublished Master's thesis, The Brigham Young University, 1945), p. 128.

[40]Crandall, pp. 127-128.

[41]Frank Riessman, "Styles of Learning," NEA Journal, 55 (March, 1966), 15.

preferences for the method of study. The majority preferred to study by copying (84 percent), but 14 of the 88 students (about 16 percent) preferred to practice by reading.[42]

Because, as Riessman wrote, "Each classroom is likely to include students whose styles of learning vary widely,"[43] the present experiment was undertaken to determine the relative effectiveness of three methods of handling homework assignments in shorthand so that varying learning styles might be accommodated.

Callarman study.[44] In an earlier study, Callarman worked with two first-year Gregg shorthand classes for three terms of instruction at Oregon State College and compared the effectiveness of the Writing Approach Method and the Reading Approach Method. Twenty-one students in each class were used as the subjects in the study and included only those with no previous shorthand instruction.

Included in his Writing Approach Method was an emphasis on correctness of shorthand outlines, early introduction to writing, emphasis on rules of writing, and much emphasis on a great deal of copying of shorthand from text plates.

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[42]Crandall, p. 121.

[43]Riessman, p. 16.

[44]Cecil C. Callarman, "The Determination of the Effectiveness of Teaching First-Year Gregg Shorthand by the Writing Approach Method and by the Reading Approach Method at Oregon State College" (unpublished Doctor's dissertation, University of Oregon, 1957).

The Reading Approach Method included only little emphasis to correctness of shorthand outlines, no emphasis on rules of writing, and heavy emphasis on much reading.

To measure effectiveness of the two methods, dictation-transcription tests were given in all three terms; theory tests were also used.

Of the results of his study, Callarman wrote:

> Although the Writing Approach Class seemed to maintain a very slight superiority over the Reading Approach Class in each of the three terms' work, that superiority was not great enough in any case to be considered as being significant. In comparing the results obtained by the two classes on percentage of accuracy on dictation-transcription tests for the three terms, it would seem that the two methods of teaching beginning Gregg shorthand were equally effective.[45]

Further than this, Callarman found a high correlation between the accuracy on the theory tests administered (both the isolated and the theory-imbedded-dictation tests) and the ability to take dictation rapidly and transcribe it accurately for both methods. However, for those in the Reading Approach Method, the correlation tended to decrease as the rate of dictation was increased.

Although the reading approach used by Callarman was quite different from the read-only homework used in the present study, his work is of interest here. His study showed that a shorthand method of study which placed a great deal of emphasis on reading of shorthand plate material can be effective.

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[45]Callarman, p. 154.

Spot-writing Shorthand

Just how should shorthand writing be done during the out-of-class practice sessions? Opinions differ, and even Gregg changed his thinking about it. According to Callarman, Dr. Gregg wrote in 1916, "At first, write slowly and carefully, aim at accuracy rather than speed, but do not draw the characters"; and in 1919 he wrote, "Teach students to write shorthand rapidly and accurately from the first, instead of teaching them to write shorthand slowly and carefully."[46]

Spot-writing, sometimes referred to as scribble writing, is a speed-forcing kind of writing on which opinions differ. Patrick reported in his comparison of the thinking of experts (textbook authors and writers for professional magazines) and a sampling of Virginia teachers as follows:

> Tracing and spot writing are not worthwhile activities. These practices, contend the experts, are not sufficiently similar to the actual process of writing to establish the desired habits and reactions that are used in writing. Virginia teachers were equally divided on this issue--47 per cent favor the use of the techniques, and 47 per cent do not favor their use.[47]

Crunk recommended scribble writing as a lead-up step to regular writing and said that it did not neglect the learning principle that "Each learner should have the opportunity and responsibility to think and to try in response to each

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[46]Callarman, p. 28.

[47]Alfred Patrick, "The Experts Say . . .," Business Education Forum, 16 (April, 1962), 30.

learning stimulus--not just to react passively."[48] Tracing shorthand previews in the air, especially in the first semester, was recommended by Russon because it provided large muscle activity which helps fix the direction of the outline.[49] Also on this subject, Flood wrote:

> Another method of building rate from the beginning is the use of "shadow," "scribble," or "air" writing, in which the students go through the motions of writing the outlines while they are reading the shorthand plates. The "shadow" or "scribble" writing which is performed by scribbling or writing on a scrap of paper at the side of the book is somewhat more realistic than "air" writing, which is executed by having the students go through the motions of writing the outlines in the air. In shadow writing, no attempt is made to stay on writing lines. The student is urged to go through the motions of writing the word without looking to see how he is writing. Sometimes these techniques are varied by having the students "shadow-write" to the teacher's dictation while they follow the outlines in their shorthand plate. This is somewhat better than responding to their own reading, since the teacher can force them to go faster than they normally would if writing in response to their own "reading dictation." Excellent results are sometimes attained by having the students "shadow-write" all reading which they do from shorthand plates.[50]

One of the reasons Stocker gave for developing and testing the DictaTutor was that "A time-consuming and tiring process in shorthand learning is the constant movement of the eyes from plates or print to the writing paper and back

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[48]Crunk, p. 17.

[49]Russon, p. 33.

[50]Hazel A. Flood, Brass Tacks of Skill Building in Shorthand, (New York: Prentice-Hall, Inc., 1951), 40.

again."[51] Spot-writing, as used in this study, also eliminates this problem.

Condon warns that one type of repetitive practice from shorthand plates soon becomes monotonous. He recommended seven methods for doing homework writing practice, and one of them was a scribble-writing method, as follows:

> The student reads and rereads a shorthand paragraph until he can read it with considerable fluency. Then he self-dictates at a normal reading rate. He writes the sentences on one line in the notebook, keeping his eyes on the shorthand plate, while reading and writing. He drops down to another line occasionally so as not to wear a hole in the paper. He repeats this about four times, forcing his dictation rate to a high speed.[52]

Crunk was also concerned that each day's work in shorthand needed to offer enough variety so that students did not become lethargic.[53] This should apply to out-of-class practice as well as the work done in class. Students themselves, according to Stuart, should have a say in the way they do their work.

> Shorthand teachers are anxious to get students of high ability, but few of them set up learning situations where such students have opportunities to do their best. Opportunities should be provided for them to evaluate their work, plan their remedial practice, exercise their own imaginations, and anticipate for themselves.

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[51]Stocker, p. 23.

[52]Arnold Condon, "Principles for the Development of Theory and the Building of Writing Skills in First-Year Shorthand," Secretarial Education with a Future, The American Business Education Yearbook, Vol. 19 (Somerville, New Jersey: Somerset Press, 1962), p. 147.

[53]Crunk, p. 18.

> If the student is to use in repetition practice all the ability he possesses, he should be given enough leeway in directing his own repetition.[54]

Schwartz pointed out that homework in shorthand does not have many similarities with that done in class or by a stenographer. She points out four differences: (1) The shorthand of homework exists in textbooks and the stenographer has to write it; (2) students read aloud first and the first activity is writing by the stenographer; (3) students dictate to themselves and the stenographer writes in silence as someone else dictates; and (4) students pace themselves and the dictator sets the pace.[55] Of these four points, the last three are remedied by the spot-writing method as used in this investigation. In this study, the students did not read the text material before taking the lesson from taped dictation at a rate determined by the dictator.

The adverse effect that spot-writing might have on the theory writing of students was a concern in this experiment. Pertinent to this, Pullis found in his study that "the student's ability to write accurate shorthand outlines was established by the first six months of shorthand instruction, and appreciable increases in shorthand accuracy did

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[54]Stuart, p. 16.

[55]Dorothy H. Schwartz, "There's Homework--and Then There's the Real Thing," Business Education World, 51 (November-December, 1970), 24.

not occur during the latter months of the course."[56] Four classes were used in his independent study with comparisons made at the end of six and nine months of instruction. The level used in the present investigation was the third quarter of work.

Another point of concern with the spot-writing method used in the present study was the fact that it was a verbatim copying from plate. As Calland pointed out, most writers caution against this; but he could find no research relating to this practice.[57]

Out-of-class Practice Time

Many people, for a variety of reasons, are concerned with the time element in education. As Douglas wrote:

> The question of further reducing the time needed for preparing vocationally competent business students is becoming another relatively critical current issue. . . . yet the current expansion of knowledge reduces the time devoted to any given area of learning in order to permit greater total needed learning.[58]

The need for time-consciousness on the part of skill-building teachers, for another reason, was expressed by Himstreet as follows:

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[56]Joe M. Pullis, "Methods of Teaching Shorthand: A Research Analysis," Independent Study Summary, Business Education Forum, 25 (October, 1970), 45.

[57]Calland, p. 151.

[58]Lloyd V. Douglas, Business Education (Washington, D.C.: The Center for Applied Research in Education, 1963), pp. 96-97.

> Education has as a primary objective the development of the ability to do critical thinking. Our skill courses do not do that. . . . As educators, then, it is our responsibility to keep the time devoted to skill development to a desirable minimum. . . .[59]

Furthermore, "with more than 90 percent of shorthand teaching in the United States now being the Gregg system,"[60] necessity may also be a reason educators working with symbol shorthand need to concern themselves with the time factor. This was pointed out in one advertisement as follows:

> Symbol shorthand systems were successful for the limited number of students who went beyond grade ten a few years ago. Those select students were willing to spend long, tedious hours learning symbol shorthand. Today, almost every teacher reports that few students are willing to take the time and spend the effort to learn symbol shorthand.[61]

How much time is needed to study and learn Gregg shorthand is not known. Lemaster pointed out, "as yet, no prognostic device has proved to be accurate enough to: (1) predict students' progress in shorthand, or (2) predict the time necessary for students to learn shorthand."[62] In his survey of leaders in business education, Gratz asked these leaders how long the symbol shorthand course in the

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[59]William C. Himstreet, "Shorthand Can Be Taught in Less Time," Business Education Forum, 9 (October, 1954), 15.

[60]Frank W. Lanham and J. M. Trytten, Review and Synthesis of Research in Business and Office Occupations Education (Columbus, Ohio: The Center for Vocational and Technical Education, 1966), 50.

[61]"To: (SYMBOL) Shorthand Teachers and Department Chairmen," Forkner Publishing Company Advertisement, Business Education Forum, 25 (October, 1970), 15.

[62]James Lemaster, "Individual Progress Shorthand," Business Education Forum, 25 (October, 1970), 15.

public secondary schools should be to provide minimum initial job competency as a stenographer. He found the following:

> Exactly half (50 per cent) the business education leaders believe that a three-semester course in shorthand is necessary to provide the minimum initial job competency as a stenographer. Another group (26.3 per cent) thinks that it will take a four-semester course to provide this competency. Almost as many (21 per cent) are of the opinion that this competency can be provided in a two-semester course in shorthand.[63]

One college instructor wrote, "It is my belief that employable skills in the classroom can be achieved within three semesters of time by making effective use of the out-of-class practice time."[64] He also wrote:

> I believe that many students when required to add an additional course have decided to substitute a course that is less time consuming than shorthand. Ask almost any student who has completed a shorthand course to tell you what he disliked about his course. He would tell you about the hour or more devoted daily to the preparation of his shorthand homework assignment. Students are prone to avoid the unpleasant things in life, and it is my belief that too many of our students have a feeling of unpleasantness associated with the learning of shorthand, primarily because of the tedious homework assignments.[65]

He recommended that the class not be expected to study for more than a half hour and that the best students should be

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[63]Jerre E. Gratz, Major Issues in Business Education, Monograph 106 (Cincinnati: South-Western Publishing Company, 1962), p. 71.

[64]Russell D. Madsen, "Effective Homework--The Key to a Successful Shorthand Program," The Balance Sheet, XXXXII (May, 1961), 414.

[65]Madsen, p. 392.

able to complete their assignment in 15 minutes plus 5-minutes of review before class. He indicated 40 minutes as a maximum study time.[66]

The authors of the text used in the present study suggest that "each lesson contains sufficient material for a homework assignment of approximately 40 to 60 minutes."[67] Writing elsewhere, Zoubek reaffirmed this thinking: he wrote, "inasmuch as we can't dispense with homework, let us assign it to our students as we would have had our teachers assign it unto us; in other words, let us not 'pile it on.' Let us make the assignments reasonable in length--or, not more than forty or forty-five minutes' worth."[68]

Lamb, another writer whose methods materials are widely used, had this to say about homework:

> Homework students should be taught how to do their homework and should be given every possible aid to ensure thorough understanding of the assignment and correct practice at home. At least an hour should be spent each evening on homework. When students are absent, they should 'make up' their homework over a period of time that allows for distributed practice.[69]

Leslie indicated that the homework should take about the same amount of time as the time spent in the classroom.

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[66]Madsen, p. 394.

[67]Leslie, Zoubek, and Hosler, Instructor's Handbook, p. 2.

[68]Charles E. Zoubek, "Anent Shorthand Homework," Business Teacher, 45 (November-December, 1967), 18.

[69]Marian M. Lamb, Your First Year of Teaching Shorthand and Transcription (2d ed.; Cincinnati: South-Western Publishing Company, 1961), p. 57.

Further, he stated that students should be able to read the assignment at the rate of 60 to 80 words a minute by making use of the key; the copying should be done at the rate of at least 30 words per minute. With these as guides, a teacher can determine the approximate time needed for a given assignment.[70]

Hayes, in discussing out-of-class practice, made the point that "before an hour on one subject is ended, the law of diminishing returns has become active for most students; therefore, it is better to make assignments that can be prepared from approximately forty to sixty minutes by a majority of the class."[71]

Another point of view was expressed by Mulry who wrote, "no definite answer can be provided to the question of how much time should be spent on homework, although some studies show little or no relationship between academic success and the amount of time students spend in home study."[72]

Strang commented on some of these points in her booklet on homework. Concerning time, she wrote: "Home-study time can vary greatly among individuals within the same class. It is not always the less able learners who study the most."[73]

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[70]Leslie, pp. 195-196.

[71]Helen Hayes, "Out of Class Counts, Too!," UBEA Forum, IV (December, 1949), 24.

[72]June Grant Mulry, "We Need Research on Homework!," NEA Journal, 50 (April, 1961), 49.

[73]Ruth Strang, Guided Study and Homework (Washington, D.C.: National Education Association, 1968), p. 14.

She also wrote that "the kind of homework assigned is fully as important as the amount of time spent on it."[74] Further, "assignments should be planned so that they require a variety of study methods, thus helping to build a repertory of study skills."[75] She also indicated that "students should participate in making their homework assignments."[76] In concluding her booklet, one of the points she made was that "contrary to general opinion, the findings of the best research indicate that systematically assigned homework contributes to academic achievement to a variable degree for able learners; to some extent for the average; and to a more marked degree for the slow learner."[77]

Coleman, in his study with beginning, college shorthand students, concluded that:

> Although no specific number of hours indicated by any group of students appeared to correspond to any definite degree with the final grade received, it was obvious from Table 22 that the students who indicated larger numbers of study hours were the ones who, as a general rule, received the lower grades. This may indicate that slower students generally need to invest more time in study in order to achieve minimum grades, or it may indicate that these students did not utilize efficient and rewarding types of study habits during the time they devoted to study.[78]

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[74]Strang, p. 166.

[75]Strang, p. 177.

[76]Strang, p. 27.

[77]Strang, p. 29.

[78]Brendan G. Coleman, "The Effects of a Tape-Laboratory Instructional Approach Upon Achievement in Beginning Collegiate Shorthand Classes" (unpublished Doctor's dissertation, Michigan State University, 1964), p. 158.

Waters commented that the "time required to complete homework assignments likewise varies, but is often as long or longer than the time spent in the classroom."[79] In his study, he periodically collected reports from the students of the time spent in study, averaged four such reports, and made comparisons. The study time difference between the fall groups was not significantly different. In the spring semester, the control group (those studying by a traditional method) devoted a significantly greater amount of time (.05 level) to their homework preparation than did the experimental group (those studying by using the programmed Dictaprint materials).[80] Although the amount of time spent by the separate groups in the two semesters of work was not given in the study, he did report that "the average for all students in experimental groups was 103 minutes per lesson."[81]

Stocker, although he did not indicate how much time students in his study spent in out-of-class practice, did report that both groups were instructed to devote a minimum of ninety minutes each day to homework preparation, and more if they were not doing well in daily tests.[82]

Gregory stated that both groups of students in his study spent approximately one hour a day preparing their homework.[83] Cook reported a like amount, approximately one

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[79]Waters, p. 11.

[80]Waters, pp. 74-76.

[81]Waters, p. 93.

[82]Stocker, pp. 22, 27.

[83]Gregory, p. 23.

hour's work each day, for the students in his advanced shorthand classes.[84]

Since it appears that the changes made in the various revisions of Gregg shorthand have not seemed to change the time required for students to master the subject,[85] perhaps more effort needs to be made in reducing the daily study time required. This need was a reason for comparing the time required for daily study of the three methods used in this experiment.

SUMMARY

Gregg shorthand, from its outset in England in 1888, has been subjected to many varied opinions. Since its introduction in the United States in 1893, there have been several revisions and a voluminous amount of material made available. The two most recent revisions, the Simplified Edition and the Diamond Jubilee Edition, greatly reduced the memory load required of Gregg shorthand students.

However, in the area of homework there has not been much revision, particularly since the introduction of Leslie's Functional method. "Read the lesson once and copy it in shorthand once" has become the traditional way, perhaps due to the recommendations in the teacher's manuals.

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[84]Cook, p. 342.

[85]Ruth I. Anderson, "Application of Research Findings in Business Education," NABTE Bulletin 85, (Winter 1966-67), p. 94.

The research concerning shorthand homework has been quite limited. But there has been enough research, along with the writing of other business educators, to indicate the need for finding better ways to study shorthand. One of the key concerns expressed was that practice in writing shorthand should be from sound, just as in the real act of taking dictation. For this reason, one of the methods of doing out-of-class practice in this study was a writing-from-sound method. The shorthand laboratory facilities were used for this writing from sound, but the student reactions in this study were quite different from what Hess found in her study. In her study, as in Cook's work, the students liked writing from sound in doing their homework.

Those who made the controlled research studies reported in this chapter used the "traditional" method as the one with which to compare their innovations, and this was done in the present study. In most of the studies, there were no significant differences found in the results. However, those who used a writing-from-print method tended to produce better results in recording dictation than did the control groups using a traditional method.

The authors recommend a shorthand workbook for use in homework. Rittenhouse, however, found that addition of the workbook made no significant difference; so it was not included in the present study.

Although the reading of shorthand is considered an important part in the learning of shorthand, as indicated

by the writings of a number of educators, no study was found that used a reading-only method for doing out-of-class practice. Callarman, in his study, used an approach which emphasized reading and found it to be effective. Because there seemed to be agreement among teachers on the importance of reading shorthand, a reading-only method of doing out-of-class practice was included in this study.

In order to use a writing-from-dictation method that would allow students to keep their eyes on their copy, it was decided to use spot-writing in the present experiment. A search of the literature revealed that there is not agreement on the use of such writing, but several business teachers wrote that they believed it could be of value.

Time, a factor of concern in this study, was not of too much concern in the studies reviewed. Some of the researchers indicated they believed their homework assignments were long enough students would not do other work. As a factor to be controlled, the matter of doing only that which has been assigned is important in any out-of-class practice research. Those studies which used writing from print as one method tended to indicate longer study time by the students using that method. A number of writers have expressed concern for reducing the learning time for any given area of work. The general opinion expressed relative to the time students should work on shorthand homework was that it should be about one hour daily. The time allowed for out-of-class practice in this study was much less.

The researchers whose works have been reviewed in this chapter seemed to be in agreement that only a very little amount of research has been done concerning shorthand homework and that more should be done. The present study, with its comparison of several ways of doing out-of-class practice in college, intermediate Gregg shorthand, may help "get at" some of the areas of concern.

Chapter 3

METHODS AND PROCEDURES

Three methods of doing the out-of-class practice in intermediate collegiate 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) Informal Surveys and Experimentation, (3) The Sample, (4) Classroom Procedures, (5) Out-of-class Methods and Procedures, (6) Evaluation Measures and Procedures, (7) Design, (8) Hypotheses, (9) Analysis, and (10) Summary.

GENERAL PROCEDURES

The two classes used in this study were two classes of intermediate Gregg shorthand taught at Ferris State College, in the regular schedule of classes, during the spring quarter, 1971. Both classes were taught by the same teacher, the researcher, as a control of the teacher variable.

This was the first quarter the intermediate shorthand course was taught as the third-quarter course in a revised shorthand sequence; the preceding two quarters covered the theory of Gregg shorthand and began dictation. Because of the change, a few expected problems arose concerning course standards; and adjustments were made. The experimental work was treated separately, however, and not as a part of the course requirements.

Because of the enrollment changes that usually occur at the beginning of a quarter, class membership is not stabilized until after the last day for adding classes, dropping classes, and changing sections. This lack of stabilization was certain to happen in intermediate shorthand for the reason that one of the three classes offered had been canceled.

On the first day of classes, the first class had seven more students enrolled than were in the second class. In an effort to procure more even class sizes, students who could change were asked to change sections; two students volunteered to do so. After final registration and add-and-drop day, the first class had 29 members and the second, 27. The experiment to be conducted was not mentioned until the following meeting, the fourth class day, when classes had stabilized.

Further, it was believed that it would take a few days for students to be able to do shorthand work at a level similar to the skill achieved by the end of the preceding quarter. For these reasons, the out-of-class practice experiment did not begin until the fourth class day. Because the last two regularly scheduled class days followed the Memorial Day holiday, it was decided to conclude the experiment on the last class day before that vacation. This gave students an opportunity to do as much out-of-class practice of their own choosing as they wished for a few days before the quarter ended, but after the conclusion of the experiment. Also, extra sessions were held then to provide

further opportunity to meet course requirements for students so desiring. The number of class sessions in the experiment thus totaled thirty, with sixteen days in Part I and fourteen class days in Part II.

In conducting the review of related research and literature, the facilities of the Michigan State University Library and the Ferris State College Library were used; inter-library loan services were obtained through the latter. 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. In addition, the services of University Microfilms, Ann Arbor, Michigan, were secured for a check of doctoral dissertations. Their data comprises the majority of all dissertations published since 1938, the entire Dissertation Abstracts file. The service used is known as DATRIX, and the run included the material on file up to August, 1970. All dissertations with the word shorthand in the title were included in the printout.

INFORMAL SURVEYS AND EXPERIMENTATION

During the two quarters preceding the experiment, the researcher did informal study of out-of-class shorthand practice. Students in both his intermediate and advanced shorthand classes were surveyed on homework methods used in

their previous courses. In studying text material, most students had used the traditional method of reading and writing the lesson from the shorthand plates; many had done no other type of homework practice. A number of students had gotten additional dictation practice out of class by using records and tapes.

In the fall quarter, a two-week study of out-of-class practice was made in an intermediate shorthand class during the fifth and sixth weeks of the quarter. The 19 students in the class were randomly assigned to one of four groups; one student was re-assigned at her request. One of four approaches to out-of-class practice was then randomly assigned to each group. The four approaches used were as follows: traditional, read and write the lesson from the text plate material (6 students); spot-write from taped dictation, keeping eyes on the book and spot-writing the lesson while listening to it on tape (4 students); read only, reading the lesson until able to read without hesitation (5 students); and doing no work on shorthand out of class (4 students).

Each student was asked to complete an opinionnaire at the end of the two weeks; however, no statistical analyses were made of this period of work. Only three students had used a shorthand laboratory prior to this course, but 15 students indicated that they liked taking taped dictation. The students, except for those who did no out-of-class practice, were satisfied with their progress; but the

majority of them believed the manner of out-of-class practice made little difference in skill development. All four who did no homework believed that not doing so hindered development. Sixteen of the students indicated they would prefer to do their homework in the traditional manner; those who had studied in this way indicated they liked the method. Those who did no practice out of class disliked that approach; the other two groups were divided between liking and disliking their methods, six and three respectively. Keeping a record of time used for study did not seem objectionable; those studying by the traditional method indicated the most dislike for recording study time.

The mean study time, to the nearest minute, for the three groups who did out-of-class practice, was as follows: traditional, 39 minutes; spot-writing from taped dictation, 26 minutes; and reading only, 30 minutes. Rigid study limitations were not made. Those students using the traditional method indicated that they spent about the same amount of time during this two-week period doing homework as compared with their previous work during the quarter. All but two of the other students in the class indicated spending less time.

This informal investigation provided guidance in setting up the experiment done spring quarter. One of the major decisions was to eliminate the no-study group as it seemed improbable students would continue such a plan for half a quarter. Further, the majority of students appeared to prefer the status quo--to continue to do their work as

they had become accustomed to doing it. Also, they believed out-of-class practice to be a necessity for success in skill development--though they did not always appreciate having to do it. The experiment of this study was undertaken, then, with this informal work as a guide.

THE SAMPLE

All students enrolled at Ferris State College in the spring quarter, 1971, who had the necessary prerequisites for intermediate shorthand constituted the population for this study. The sample used consisted of all students in the two intermediate shorthand classes taught that quarter; none was aware of the experimental activity to be conducted until it was explained at the fourth class meeting.

Before the classes met, a table of random digits was used to determine which students in each class would use which out-of-class practice method. There were two groups numbered to 30 (maximum expected in the classes) and by using the table of random digits, the 30 numbers were assigned to one of the three methods. The first number occurring in the table was assigned to Method A, the second to B, the third to C; this process was followed until all numbers were assigned. The procedure was repeated for the second group of 30 numbers. On the fourth day, after classes had stabilized, the classes were arranged alphabetically, numbered, and students were assigned study methods according to the pre-numbered list for their class.

The entire sample was composed of women whose ages ranged from 18 to 21. The mean age for Class I was 18.96, and the mean age for Class II was 18.43. Two students in subgroup I-C were married; the rest in the sample were single. The majority (39) of the students were freshmen, nine were sophomores, and two were juniors. The students indicated enrollment in one of four schools in the college as follows: Business, 31 students; General Education, 4 students; Health, Science and Arts, 12 students; and Teacher Education, 3 students.

Students enrolled in each class had varied backgrounds in the amount of previous shorthand instruction, as is usually the case in intermediate shorthand. In these two classes, the amount of prior shorthand work ranged from one quarter completed in college to two years taken in high school. As indicated in Table 3.1 for the students finishing the course, more had previously completed two quarters of college shorthand than any other specified amount of study.

TABLE 3.1

AMOUNT OF PREVIOUS SHORTHAND TAKEN BY STUDENTS IN BOTH CLASSES

		High School Semesters Completed					College Quarters Completed				Both HS and College*
Class	n	0	1	2	3	4	0	1	2	3	
I	27	14	3	4	1	5	7	4	15	1	7
II	23	15	1	5	0	2	4	8	11	0	4

*Those in this column are also included elsewhere on the line for previous work taken in high school and/or college.

Because of the students' varied shorthand backgrounds, a test of the classes was included in the analysis of covariance to verify the equality of the two classes as lack of equality might affect their ability to succeed in shorthand. With 4 degrees of freedom, the F-ratio for the multivariate test of the equality of mean vectors was 0.7403; the probability was less than .5706 (see Table 4.2, p. 82). Consequently, the null hypothesis of no significant difference between the two classes was retained after equating them with the covariates.

On the first day of the experiment, there were 29 students in Class I and 27 students in Class II. Upon the conclusion of the experiment, there were 50 students whose scores were used in the final analyses, 27 in Class I and 23 in Class II. One of the students who dropped from Class I withdrew from school; the other student dropped the course to reduce her class load because of personal problems. In Class II, two students withdrew from school; one did so after a prolonged illness. Three other students also withdrew officially from the course; one of these did so because she believed that not being able to get extra dictation practice as she had in the previous quarter had limited the progress she was able to make. The other two students were both repeating the course but not doing as well as they wanted to do. Both students, however, continued the class at their own requests. The test results of only one of these students were used in the analyses; the other student had not done the out-of-class practice as it was assigned.

CLASSROOM PROCEDURES

As a control of the variables of teacher and classroom activity, the researcher taught both classes following the same lesson plans. In addition to the usual speed-building activities, reading and spot-writing work were included to tie in the out-of-class practice methods.

The text used in these classes was Gregg Shorthand for Colleges, Diamond Jubilee Series, Volume Two, by Louis A. Leslie, Charles E. Zoubek, and Russell J. Hosler. Also, the Student's Transcript of Gregg Shorthand for Colleges, Diamond Jubilee Series, Volume Two, was used except by students when using special instructor-prepared tapes of the assigned lessons. Only the first 40 lessons of the text are used in the intermediate shorthand classes, so lessons were covered at the rate of one a day during the experiment.

Each class met on Monday, Wednesday, Thursday, and Friday for a regular period of fifty minutes. The first class started at 10:40 a.m. and the second one at 11:45 a.m. Back-to-back scheduling was done to control the time-of-day variable as much as possible. At the outset, both classes were scheduled to have 36 class sessions; however, one experimental day was lost in the last half of the study because of an officially-excused day for a School of Business function.

Both classes were taught in the same room, a shorthand laboratory equipped with electric typewriters, a four-tape-

deck console, and individual headsets with student control of channel selection. Because most of the shorthand classes at Ferris are taught in one of four shorthand laboratories, students become familiar early with taped dictation. In addition, there is an independent study room in the School of Business and one in the college library where students use taped material for out-of-class practice. These facilities were used in this study.

The written assignments and the time records (Appendix B) of out-of-class practice were collected daily from each student. All out-of-class practice assignments were required from students who missed class.

Attendance records showed Class I to have a greater number of student absences during the experimental period than did Class II, as indicated in Tables 3.2 and 3.3.

TABLE 3.2

STUDENT ABSENCES FROM CLASS I DURING THE EXPERIMENT

Subgroup	n	Number of Students Missing 0 - 4 days	5 days or more	Absences Total	Mean
I-A	9	5	4	40	4.44
I-B	9	5	4	32	3.55
I-C	9	6	3	36	4.00
Totals	27	16	11	108	4.00

TABLE 3.3

STUDENT ABSENCES FROM CLASS II DURING THE EXPERIMENT

Subgroup	n	Number of Students Missing 0 - 4 days	5 days or more	Absences Total	Mean
II-A	9	5	4	31	3.44
II-B	6	5	1	11	1.83
II-C	8	7	1	17	2.12
Totals	23	17	6	59	2.56

The students in Class I had similar attendance patterns in all three subgroups; in Class II, however, those in Subgroup A missed more classes than did those in the other two subgroups. Of the 17 students who missed 5 days or more, 6 of them indicated on their opinionnaires completed at the end of the quarter that they had done extra study.

OUT-OF-CLASS METHODS AND PROCEDURES

Three methods of doing out-of-class textbook practice in intermediate shorthand were compared in this study; a fourth method was used during the holding phases of the study and was the only method that was used at some time by every student in the study.

The traditional method of study used was a one-time-reading-and-writing approach of the textbook lesson. Those students assigned to this method were asked to read the lesson once and then start at the beginning and write the lesson once from self-dictation.

In the reading method used, the students were asked to read the lesson twice, reading aloud whenever possible. Students were told they could read the lesson a third time if necessary in order to read the lesson without hesitation. Also, they were allowed to "write in the air" any words they wished; these occasional words could be written on paper if the student believed it necessary to do so.

For the third method, special tapes were prepared by the researcher after receiving permission to do so from

Gregg Division, McGraw-Hill, Inc., publishers, copyright owners, and proprietors of Gregg Shorthand. Lessons 4 through 32 from Gregg Shorthand for Colleges, Diamond Jubilee Series, Volume Two, were used in the study and were recorded on magnetic tape. The introductory words in each lesson were dictated at the rate of approximately one word every two seconds, and the reading and writing practice material was dictated at 100 words per minute with a 15-second pause between letters. These tapes were made available on a daily basis to only those students assigned to study by this method. For those who wished to attend, the instructor played the assignment tape on the classroom console in the evening. For those not attending, the tape was available throughout the day and could be used in the independent study room in the School of Business. It had to be checked out and also checked in through the departmental office, along with a headset, on a specially prepared list of students allowed to use the tape that day. The tape for the assignment over a weekend was placed temporarily in the college's library for use in the library study room equipped for individual playing of tapes. Left with the tape was a list of students who were allowed to use the tape once during the weekend.

Students were instructed not to study the lesson in any way before using the tape. To use the tape, students were to keep their books open to the lesson being studied and to look at the book while spot-writing the same material from

the taped dictation. Each letter was to be placed in a spot with no attempt to produce legible copy. Appendix A is a sample of a lesson done by a student.

Using a table of random letters, the three methods--Self-dictation, Reading, and spot-writing from Taped dictation--were designated as A, B, and C. Self-dictation, the traditional approach, became Method A; Reading became Method B; and spot-writing from Taped dictation became Method C. Using a table of random digits, the 10:40 class was designated as Class I and the 11:45 section became Class II. A flip of the coin determined that Class I was to receive the experimental treatment during the first part of the quarter and Class II the holding treatment; the treatments were reversed the second half of the quarter.

The holding treatment was used to negate any residual effects of the three out-of-class practice methods being compared. When students were not studying by Method A, B, or C, they used the holding method (D) to do their out-of-class practice. With this method, students were to read the lesson first and then spot-write it once from self-dictation.

All students were asked to complete a form daily showing the amount of time spent on out-of-class shorthand practice; they were asked to fill in the form immediately upon finishing their study. These completed forms were collected and the blank forms for the next lesson distributed each day. A sample of the form used in each method of study may be found in Appendix B.

EVALUATION MEASURES AND PROCEDURES

Both dictation-transcription tests and theory tests were used to measure the shorthand skill attained in Part I and in Part II. Although the primary purpose of intermediate collegiate shorthand is the development of dictation-taking ability, the theory tests were included to check the relationship between the ability to take dictation and the ability to write shorthand according to Gregg theory and also 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, at the end of Part I, and again at the end of Part II. All tests used came from Gregg Tests and Awards 1970-71 after it was ascertained by a check with fellow teachers that this particular copy had not been used with the students now in the experiment; it had not been available for those who had taken shorthand when in high school. A table of random months was used in selecting both types of tests.

The theory tests given each consisted of 50 words selected from the 100 words available in each test. Whether to use the even or odd numbered words was decided for each test individually by the flip of a coin; the odd-numbered words were used in all three tests. Test I was from the November/December test; Test II was from the March/April test; and Test III was from the September/October test

(Appendix C). In each test the words were dictated live at the rate of one word every four seconds and the students were allowed eight minutes to transcribe them. The primary concern was with the shorthand-written words, though both the shorthand and the transcribed words were checked. Students were informed that these three tests were not being used for grading purposes; other tests were given for that purpose.

Theory Test I was given the first day of the experiment (the fourth class day); Theory Test II was given the 16th experimental day; and Theory Test III was given on the 29th day of the experiment.

The dictation-transcription tests produced by the Gregg Division, McGraw Hill Book Company, are extensively used at Ferris State College and elsewhere. For this reason, they were selected for this study. Although the letters were all marked for dictation using the standard word of 1.4 syllables (28 syllables equal 20 words), a check showed the syllable intensity of the complete letters varied from this. Therefore, the random selection of letters to be used was limited to those having a syllable intensity of 1.5 or more; the actual range of those dictated was from 1.50 to 1.57. 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 recorded the letters on magnetic tape for all three tests at the beginning of the study. A one-minute warm up was

dictated at the start of each test tape, one-half minute at 80 words per minute followed by a half-minute at 100 words per minute. No preview was provided in any of the tests. In each of the tests, three takes of three minutes each were dictated: one at 100, 80, and 60 words per minute respectively in that order. There was a 30 seconds pause between takes. For Test III, a three-minute take at 120 words per minute was added because some were believed to need that speed. Thus after taking the 100 and the 80, students chose either the take at 120 or at 60 words per minute. Time did not allow all four to be taken. Students were instructed to record three takes and transcribe the one from which they believed they could transcribe the most correct words. Notes for all takes recorded were turned in along with the one letter transcribed. Test I transcripts could be either in longhand or typewritten; transcripts were all typed for Tests II and III. Students were informed that these three dictation-transcription tests were not being graded; other tests were given on other days for that purpose.

After a brief period of taped dictation drill, the test dictation was presented. Students were then allowed a maximum of thirty minutes to transcribe the letter they wished. The letters were checked for the number of words correctly transcribed. To avoid having to guess whether the right word were intended, all misspelled words were considered wrong; also, any additional words included were subtracted from the number of correct words. Paragraphing and punctuation were not considered.

Dictation Test I was given on the second day of the experiment; Dictation Test II, the 17th day of the experiment; and Dictation Test III was given on the 30th day of the experiment.

Following is a list of the copy randomly selected from Gregg Tests and Awards 1970-71 for the dictation tests:

Test I: 100/November; 80/December; and 60/November

Test II: 100/January; 80/September; and 60/March

Test III: 100/May; 80/May; 60/April; and 120/April

These are presented in Appendix D.

As a control of the out-of-class-practice time variable, each method of study was to be done in the manner specified. Each student submitted a daily report of the amount of time she had used in studying the assignment, and these figures were used in the comparisons made.

During one of the last two class periods of the quarter, each student completed a signed opinionnaire of her reactions to several factors of concern in the out-of-class practice. The students were told that the opinionnaires would not be tabulated or looked at until after all grading for the quarter was completed, and this promise was respected. Signing names did not seem to cause a lack of frankness, and the opinionnaires were more meaningful and readily tabulated. Those who did additional study could be ascertained, making further analysis possible. Appendix E is a sample of the opinionnaire used at the conclusion of the study.

DESIGN

The experiment was designed so that one class received the treatment consisting of the three experimental methods during the first half of the treatment period, and the other class received the treatment the second part; each part was approximately four weeks in length. The holding method was used by the class not using treatment methods.

It is very common to have students in a shorthand class achieve their goals during the very last part of the quarter. For this reason, it was believed best to use a design that would include this time period, but which would also enable comparison with earlier efforts. Figure 3.1 illustrates the two-by-two design selected.

	Part I	Part II
Class I	Treatment Methods	Holding Method
Class II	Holding Method	Treatment Methods

Figure 3.1
Two-by-two Design Used in the Experiment

It may be noted that when Class I received the treatment methods, Class II engaged in the holding method. The holding method was actually a fourth way of doing out-of-class practice that was not being compared; it was used to negate any residual effects of the methods being tested. Class I used the holding method when Class II moved into the treatment methods. Figure 3.2 illustrates the manner in which

the classes were arranged for the treatment phases of the study. With the two-by-two design, treatment methods for out-of-class practice were used throughout the quarter. It

	A	B	C
Class I			
Class II			

Figure 3.2

Arrangement of Classes
During Treatment

was hoped that no student would be doing any type of treatment so long that it would be necessary to deviate. Some students, however, did additional study.

Class I, which received the treatments (Methods A, B, and C) the first half of the study, was used to test for immediate and delayed effects of the treatments. This is shown in Figure 3.3.

	end of Part I	end of Part II
A s_1 s_2 . s_n		
B s_1 s_2 . s_n		
C s_1 s_2 . s_n		

Figure 3.3
Design Used to Check Immediate and Delayed
Treatment Effects in Class I

HYPOTHESES

As cited in Chapter 1, the four primary hypotheses tested were as follows:

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, when using the spot-writing-from-taped-dictation method than will be achieved by students using the traditional method.

H_2: Students will develop greater skill in taking dictation of new material, as measured by the number of correct words on a criterion test, when using the spot-writing-from-taped-dictation method than will be achieved by students using the reading method.

H_3: Students will develop greater skill in taking dictation of new material, as measured by the number of correct words on a criterion test, when using the traditional approach than will be achieved by students using the reading approach.

H_4: All three methods of out-of-class practice will produce better results, as measured by the number of correct words on a criterion test, in the second half of the experiment.

ANALYSIS

A computer-run test of basic statistics was done to provide simple correlations between a number of factors,

including the dependent and the independent variables. The resulting correlations were used in determining covariates.

Frequently grades earned in English and a student's success in shorthand are thought to be quite related, so English grades were considered. However, the School and College Ability Test (SCAT) scores of students in the study correlated slightly higher with the shorthand take scores achieved in the study than did their first-quarter English grades; Table 3.4 shows this.

TABLE 3.4

SIMPLE CORRELATIONS BETWEEN SELECTED FACTORS

	English	SCAT Verbal	SCAT Total
Take I	.23840	.33485	.33639
Take II	.40482	.46313	.48153
Take III	.16109	.38530	.51574

Therefore, SCAT scores were used as covariates. The scores for Take I and Theory Test I, administered at the beginning of the study, also were used as covariates. To further verify the use of the four items as covariates, a regression analysis was done.

Analysis of covariance was used to test for the differences in classes, effects of the treatments, and the interaction of classes with treatments (for both the full groups and the no-extra-study groups.) As mentioned in

the discussion of the sample, the covariates equated the two classes.

A repeated measures analysis of variance was done with the results from Class I to test for immediate and delayed effects of the treatments.

Student reports of the amount of time spent doing out-of-class shorthand practice were submitted daily, and comparisons were made between all the methods of study used.

Opinionnaires submitted by students upon completion of the experiment provided the final information for analysis.

SUMMARY

Students making up the sample in this investigation were the members of the two intermediate shorthand classes taught during the spring quarter, 1971, at Ferris State College. Both classes were composed of young women whose ages ranged from 18 to 21; and their shorthand background ranged from the completion of one quarter of college shorthand to the completion of two years of shorthand in high school.

Classroom procedures for the two groups were kept as identical as possible by using one teacher, the researcher, who followed the same lesson plans in both classes. The classes were taught in back-to-back periods in late morning.

The textbook used in the course was Gregg Shorthand for Colleges, Diamond Jubilee Series, Volume Two. In addition, one subgroup in each class used specially prepared tapes of the text lessons in their out-of-class practice.

A two-by-two design was followed in which members of one class did their out-of-class practice by one of the three experimental methods specified during the first half of the study while the other class used a holding method. During the second half of the study the procedures were reversed. Students in each class were randomly assigned to the method of study to be used out of class, and the class to receive the treatment first was randomly selected.

The three experimental out-of-class practice methods were as follows: (1) traditional study of the text lesson by one-time reading and one-time writing from self-dictation; (2) study the lesson by reading only; and (3) one-time study by watching the text while spot-writing the lesson from taped dictation. The holding method (4) consisted of studying the lesson by one-time reading and one-time spot-writing the lesson from self-dictation.

Dictation-transcription tests and theory tests given at the beginning of the study, the end of Part I, and the end of Part II were used to measure and compare student achievement. The beginning dictation-transcription test and theory test were used as covariates, along with School and College Ability Test scores, Verbal and Total.

In addition to equating the two classes, the analysis of covariance used tested the effects of the treatments and also the interaction of classes with treatments. A repeated measures analysis of variance was done on the results from Class I to test for immediate and delayed treatment effects.

The daily reports submitted by students of the time used in studying shorthand were used to compare this factor. At the end of the quarter, students completed an opinionnaire in which they gave their reactions to the experiment.

Chapter 4

FINDINGS

The findings of this study were divided into the following areas and are presented in the order listed:

I. Verification of the covariates.

II. Analysis of covariance tests for differences in three factors:

   A. Classes.

   B. Treatments. Also, immediate and delayed treatment effects were tested by a repeated measures analysis of variance and reported here.

   C. Interaction of classes with treatments.

III. Comparisons of the amount of time of out-of-class practice reported by students in the experimental and holding phases of the study.

IV. Comparative analyses of the following items:

   A. 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 three practice methods.

   B. The correlation between student attitude toward the method of out-of-class practice used and the success achieved in taking dictation.

   C. The correlation between success achieved in taking dictation and the ability of students as measured by scores (Total) on the School and College Ability Tests.

V. Student opinions of several other factors pertaining to their out-of-class practice.

VI. Summary.

VERIFICATION OF THE COVARIATES

Based on simple correlations, as discussed in Chapter 3, SCAT Verbal, SCAT Total, Take I, and Theory I scores were used as covariates; they were verified further by regression analysis. A chi-square test of the hypothesis of no association between the dependent and the independent variables produced a highly significant correlation. The hypothesis was rejected and the decision was made to retain the covariates.

For this test of the covariates, $\chi^2 = 90.0863$ with 16 degrees of freedom and was significant at less than .0001. Each of the dependent variables was tested against the covariates in the same way with very similar, significant results. The specific multiple R's were as presented in Table 4.1.

TABLE 4.1

REGRESSION ANALYSIS WITH FOUR COVARIATES

Dependent Variable	Multiple R	Squared Multiple R	F	P less than
Take II	.8265	.6831	21.5582	.0001
Theory II	.8394	.7046	23.8516	.0001
Take III	.8099	.6560	19.0668	.0001
Theory III	.7318	.5355	11.5298	.0001

ANALYSIS OF COVARIANCE

The equality of the classes, effects of the treatments, and the interaction between classes and treatments were all tested by an analysis of covariance.[1]

Equality of the Classes

In the discussion in the preceding chapter of the sample chosen for this study, the differences existing in the amount of prior shorthand work were pointed out, and inequality between the classes was expected. However, after equating them with the covariates, the null hypothesis of no significant difference between the two classes was retained. See Table 4.2.

Effects of the Treatments

Three methods of doing out-of-class shorthand practice were compared in this study. The results expected were stated in the first three primary hypotheses as follows:

> 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, when using the spot-writing-from-taped-dictation method than will be achieved by students using the traditional method.

---

[1]The computer program for this analysis was Jeremy D. Finn's Univariate and Multivariate Analysis of Variance and Covariance, A Fortran IV Program (Version 4; State University of New York at Buffalo, June, 1968): modified for the Control Data Corporation 3600 computer by David J. Wright, "Occasional Paper No. 9" (East Lansing: Michigan State University, College of Education, School for Advanced Studies, Office of Research Consultation, March, 1970). (Mimeographed.)

H_2: Students will develop greater skill in taking dictation of new material, as measured by the number of correct words on a criterion test, when using the spot-writing-from-taped-dictation method than will be achieved by students using the reading method.

H_3: Students will develop greater skill in taking dictation of new material, as measured by the number of correct words on a criterion test, when using the traditional approach than will be achieved by students using the reading approach.

The analysis of covariance used to test these treatment effects grouped the like methods together, disregarding the class from which the results came, and found no statistically significant difference. The probability was less than 0.5504, with 8 and 74 degrees of freedom, and the F-ratio for the multivariate test of equality of mean vectors was 0.8643, as shown in Table 4.2. From these results, it was not possible to accept any of the above hypotheses and conclude one method to be better than the others for doing out-of-class shorthand practice.

TABLE 4.2

ANALYSIS OF COVARIANCE FOR CLASSES, TREATMENTS, AND INTERACTION OF CLASSES WITH TREATMENTS

Source of Variation	df	Multivariate F	P Less Than
Class	4,37	0.7403	.5706 (NS)
Treatment*	8,74	0.8643	.5504 (NS)
Interaction	8,74	1.1358	.3499 (NS)

* Since this is a multivariate test, it simultaneously tests the first three primary hypotheses.

A repeated measures analysis of variance was used on the results from Class I to check for immediate and delayed effects. Only Class I received the treatment, use of the three out-of-class study methods, without the possible contamination of the fourth, or holding, method of study.

Box's chi-square tests of homogeneity were used to test the assumption of equal off-diagonal elements[2] in the variance-covariance matrix. With 20 degrees of freedom, the $\chi^2 = 23.840$ in the test across groups and is not significant at the .05 level ($\chi^2_{.05} = 31.410$ at 20 df). For the pooled variance-covariance matrix test, $\chi^2 = 142.64$ with 8 degrees of freedom and is significant at the .05 level ($\chi^2_{.05} = 15.507$ at 8 df). See Table 4.3.

TABLE 4.3

BOX'S CHI-SQUARE TEST OF HOMOGENEITY

Test	χ^2	DF	
Variance-Covariance Matrices Across Groups	23.840	20	(NS)
Pooled Variance-Covariance Matrix	142.64	8	(Sig)

Because one of the tests was significant, the Greenhouse-Geisser Conservative F Test was used to interpret

[2]One of the assumptions of a repeated measures design is equal off-diagonal elements in this matrix. The Box test tests that assumption, and significance demonstrates that the assumption has been violated. Such a violation requires the use of a conservative F test (using conservative estimates of degrees of freedom so that the tabled F will be smaller).

the findings of the analysis of variance. No statistically significant differences were found, either between the subgroups in Class I or between the accomplishments in Part I and Part II for this class, as noted in Table 4.4.

TABLE 4.4

GREENHOUSE-GEISSER CONSERVATIVE F TEST

Sources	DF	SS	MS	F	Conservative
Groups	2	3615.35	1807.68	.486	
Subject-Groups	24	89240.33	3718.35		
Repeated Measures	3	393711.44	131237.15	145.041*	1,24
RM/G	6	2745.61	457.60	.506**	2,24
RM/S-G (error)	72	65147.44	904.83		
Total	107	554460.19			

* $F_{1,24;.05} = 249.1$

** $F_{2,24;.05} = 19.45$

Interaction Between Classes and Treatments

For purposes of this study, the lesson assignments of both classes were divided into two parts: Part I contained 15 out-of-class assignments, and Part II had 14 such assignments. As stated in the fourth primary hypothesis, which follows, it was anticipated that the Part II work would be more productive.

H_4: All three methods of out-of-class practice will produce better results, as measured by the number of correct words on a criterion test, in the second half of the experiment.

Also wanted was an awareness of whether any study method worked best in the first half, or in the second half, or whether there were any significant differences in treatments because of the time at which the treatments were administered.

The interaction test reported in Table 4.2 helps provide the answers; it tests the mid-term evaluations against each other, and also tests the final evaluations against each other. As indicated, the differences were not significant, since the probability was only .3499. Because the only difference in the final tests was the time at which each group was experimental, hypothesis four was rejected.

It was believed, however, that the effects of the holding treatment used by Group I during the latter part of the study might have affected the results compared in the interaction test. So a comparison of group mean gain scores was made. Both the holding pattern and the experimental methods of study appeared to produce greater results in the last half than they had been able to do the first half, as shown in the following four tables (4.5, 4.6, 4.7, and 4.8).

TABLE 4.5

FULL GROUP WORD-GAIN SCORES ON TAKES, CLASS I

Group	n	Part I		Part II		Total Study	
		Words Gained	Mean Gain	Words Gained	Mean Gain	Words Gained	Mean Gain
I-A	9	185	20.55	62	6.89	247	27.44
I-B	9	46	5.11	315	35.00	361	40.11
I-C	9	66	7.33	172	19.11	238	26.44
	27	297	11.00	549	20.33	846	31.33

TABLE 4.6

FULL GROUP WORD-GAIN SCORES ON TAKES, CLASS II

Group	n	Part I		Part II		Total Study	
		Words Gained	Mean Gain	Words Gained	Mean Gain	Words Gained	Mean Gain
II-A	8*	56	7.00	199	24.87	255	31.87
II-B	6	0	0	255	42.50	255	42.50
II-C	8	135	16.88	234	29.25	369	46.13
	22	191	8.68	688	31.27	879	39.95

*One student did not do Take II.

TABLE 4.7

NO-EXTRA-STUDY GROUPS WORD-GAIN SCORES ON TAKES, CLASS I

Group	n	Part I		Part II		Total Study	
		Words Gained	Mean Gain	Words Gained	Mean Gain	Words Gained	Mean Gain
I-A	6	142	23.67	11	1.83	153	25.50
I-B	8	43	5.38	280	35.00	323	40.38
I-C	9	66	7.33	172	19.11	238	26.44
	23	251	10.91	463	20.13	714	31.04

TABLE 4.8

NO-EXTRA-STUDY GROUPS WORD-GAIN SCORES ON TAKES, CLASS II

Group	n	Part I		Part II		Total Study	
		Words Gained	Mean Gain	Words Gained	Mean Gain	Words Gained	Mean Gain
II-A	5	47	9.40	137	27.40	184	36.80
II-B	3	56	18.67	81	27.00	137	45.67
II-C	4	32	8.00	147	36.75	179	44.75
	12	135	11.25	365	30.42	500	41.67

Only subgroup I-A (traditional) made more gain the first half of the study than in the last; the other five subgroups all made the major portion of their word gains in the last half. This was true for both the full group and for the subgroups when the extra-study people were removed (these groups are discussed more fully in the following section, Reported Out-of-class Practice Time). This one reverse by subgroup I-A may be due to a sampling error rather than a real treatment effect. Or it may have happened because they used the familiar method of study in Part I.

Comparison of the results of the two classes in the study revealed that Class II made the larger total mean gain, both in the full groups and in the no-extra-study groups. Although the differences were not statistically significant, in the full groups Class II averaged 8.62

words more per student. In the no-extra-study groups, Class II members averaged 10.63 words more gain than the members in Class I.

REPORTED OUT-OF-CLASS PRACTICE TIME

As part of the daily assignment, each student turned in a report (samples given in Appendix B) of the time devoted to shorthand study done out of class between class sessions. The information gathered from these reports provided the basis for this section of the study. "Extra" study did not get reported on these daily slips, though students were asked to report all study being done out of class relative to shorthand. Additional study time was indicated by a number of students, however, in the opinionnaires collected from students at the conclusion of the experiment. This extra study time was not reported by all students in minutes per day. Therefore, it was not included with the average daily study time indicated in this report; additional comments will be made later concerning the extra study.

The amounts of time spent in out-of-class practice on shorthand varied considerably within a given method group as well as between the groups. Students' figures were used for all time reports, including the C groups who studied from researcher-prepared tapes of the text lessons. Only the time used in actual study was to be included; getting ready, going to and from buildings, and such related

activities were not to be counted. The study times reported were rounded to the nearest minute and are given in Table 4.9.

TABLE 4.9

MINUTES OF REPORTED DAILY STUDY TIME FOR FULL GROUP, ALL METHODS

Group	n	Study Time During Treatment				Grand Mean Study Time During Treatment	Mean Study Time During Holding	Grand Mean Study Time During Holding
		Low	Median	High	Mean			
I-A	9	19	28	100	38		25	
II-A	9	17	25	30	23		21	
A	18					31		
I-B	9	20	30	53	33		22	
II-B	6	16	20.5	32	22		19	
B	15					29		
I-C	9	9	11	13	11		15	
II-C	8	11	11	13	12		28	
C	17					11		
A-B-C	50							22

With a grand mean of 11 minutes, those in the C groups who studied by spot-writing from taped dictation of the lesson while reading the lesson, used the least amount of time for out-of-class practice. Those in the reading-only groups (B) had a mean of 29 minutes out-of-class practice

time; and those in the A groups who were reading and writing the lesson once in the traditional way spent a mean time of 31 minutes. It should be noted that for those using the holding method of spot-writing from self-dictation, which was really a fourth type of shorthand practice, the mean time for study was 22 minutes. All students in the experiment, as indicated in Table 4.9, were included in this holding pattern. Also it should be noted that students used almost as much time to study by reading-only (B) when doing the lesson as they used when reading and writing the lesson once (A).

Although the total assignment to be done was definitely specified, the time taken to accomplish the assignments varied considerably within groups as well as between groups. As indicated in Table 4.9, the widest range reported was in group I-A during Part I; the fewest minutes taken by a student to read and write the lesson averaged 19 minutes, and the most time spent in similar study was 100 minutes. Those who reported deviations from what appeared to be the "norm" for their group during the experiment were questioned casually to determine whether or not they were doing the out-of-class practice as assigned.

Some students did do extra work which fact they reported in the opinionnaire submitted upon completion of the course. It was believed that leaving these extra-study students in the calculations would provide a more real-world situation--if such assignments were made in non-experimental

classes, there would be those who would most likely deviate in similar manner from the assignments. Therefore, the figures above, also presented in Table 4.9, do reflect the entire group.

One of the subgroups, I-C, had no members who reported doing additional study, as indicated in Table 4.10.

TABLE 4.10

SUMMARY OF STUDENTS REPORTING EXTRA STUDY BY CLASSES AND METHODS FOR FULL GROUP

Group	Subjects in Study	Number Reporting Extra Study	Number Not Reporting Extra Study
I-A	9	3	6
I-B	9	1	8
I-C	9	0	9
I	27	4	23
II-A	9	4	5
II-B	6	3	3
II-C	8	4	4
II	23	11	12
I & II	50	15	35

Group II, who did the experimental phase of the study the last half of the quarter, had the most members report

having done additional study. As expected, more extra study was reported during the second part of the experiment than the first part; in fact, Group I had only one student report additional study during Part I, the time they did experimental out-of-class practice. Both subgroups II-B and II-C had half their members reporting additional study, and almost half the members in subgroup II-A reported extra work. By comparison, the subgroup in the first class to have the most members indicate additional study was I-A (traditional) with three students, or one-third, reporting extra study.

When those who indicated additional study were removed, there were some changes in the means of out-of-class practice time reported. These new means are recorded in Table 4.11.

TABLE 4.11

MINUTES OF REPORTED DAILY STUDY TIME BY THOSE NOT REPORTING EXTRA STUDY, ALL METHODS

Group	n	Study Time During Treatment				Grand Mean Study Time During Treatment	Mean Study Time During Holding	Grand Mean Study Time During Holding
		Low	Median	High	Mean			
I-A	6	19	21.5	60	30		17	
II-A	5	17	27	29	24		24	
A	11					27		
I-B	8	20	33	53	34		24	
II-B	3	16	18	23	19		24	
B	11					30		
I-C	9	9	11	13	11		15	
II-C	4	11	11	12	11		30	
C	13					11		
A-B-C	35							21

The no-extra-study subgroups of the classes compared with the total groups, by methods, as follows: those doing Method A (traditional) studied four minutes less per assignment during the experimental part of the course; those doing Method B (read-only) averaged one minute more; and the Method C (taped dictation) groups were identical. During the holding portion of the experiment, the no-extra-study group averaged one minute less per assignment.

When the method of study used was disregarded, the grand mean study time for Part I was 25.34 minutes, and for Part II it was 19.98 minutes. For both parts of the study, the computer-run tests of the basic statistics showed all negative correlations between study times and the results in the takes and the theory tests, though none of them was very high. See Table 4.12.

TABLE 4.12

CORRELATION BETWEEN REPORTED STUDY TIME AND TAKES AND REPORTED STUDY TIME AND THEORY TESTS FOR FULL GROUP

Test	Study Time			
	Part I		Part II	
	r	r^2	r	r^2
Take I	-.47794	.22843	-.44014	.19372
Theory I	-.48670	.23687	-.55822	.31161
Take II	-.27030	.07306	-.32351	.10466
Theory II	-.39828	.15863	-.34144	.11658
Take III	-.27440	.07530	-.39227	.15387
Theory III	-.29629	.08779	-.32774	.10741

An examination of the amount of study done when the two classes are divided into three subgroups according to the method of out-of-class practice used, revealed that the mean amount of study done in Part II was less in each group than the mean amount spent in study by that group in Part I, as shown in Table 4.13.

TABLE 4.13

MEAN MINUTES OF REPORTED DAILY STUDY TIME FOR FULL SUBGROUPS, ALL METHODS

Group	n	Part I	Part II
A	18	29.28	24.39
B	15	27.60	22.13
C	17	19.18	13.41

Only the correlations, which were all negative, between study time and the results of pre-check Take I and Theory I, Method A, were high enough to be considered significant.[3] Most other correlations in these subgroups were low, as

[3]John W. Best in Research in Education (2d ed.; Englewood Cliffs: Prentice-Hall, Inc., 1970), p. 257, presents the following "general criterion for the evaluation of the significance of coefficients."

Coefficient (r)	Relationship
00 to ± .20	negligible
± .20 to ± .40	low or slight
± .40 to ± .60	moderate
± .60 to ± .80	substantial or marked
± .80 to ±1.00	high to very high

indicated in Tables 4.14, 4.15, and 4.16. All of the correlations for Subgroup A were negative; all but one of the correlations for Subgroup B were negative; and for Subgroup C, half the correlations in Part I were negative and all the correlations in Part II were negative. One in Part I, Theory I by Subgroup C, had a zero correlation of determination (r^2) as defined by Armore.[4]

TABLE 4.14

CORRELATION BETWEEN REPORTED STUDY TIME AND TAKES AND REPORTED STUDY TIME AND THEORY TESTS FOR SUBGROUP A

Test	Study Time			
	Part I		Part II	
	r	r^2	r	r^2
Take I	-.73011	.53305	-.81278	.66061
Theory I	-.73838	.54521	-.74763	.55894
Take II	-.25535	.06520	-.46602	.21717
Theory II	-.51297	.26313	-.48671	.23688
Take III	-.37627	.14158	-.58330	.34024
Theory III	-.28877	.08339	-.32990	.10883

[4]Sidney J. Armore, Introduction to Statistical Analysis and Inference for Psychology and Education (New York: John Wiley & Sons, Inc., 1966), p. 429.

TABLE 4.15

CORRELATION BETWEEN REPORTED STUDY TIME AND TAKES AND REPORTED STUDY TIME AND THEORY TESTS FOR SUBGROUP B

Test	Study Time			
	Part I		Part II	
	r	r^2	r	r^2
Take I	-.26581	.07066	.00979	.00010
Theory I	-.42808	.18325	-.30052	.09031
Take II	-.27776	.07715	-.22316	.04980
Theory II	-.51749	.26779	-.12907	.01666
Take III	-.42427	.18001	-.25505	.06505
Theory III	-.39937	.15949	-.16886	.02851

TABLE 4.16

CORRELATION BETWEEN REPORTED STUDY TIME AND TAKES AND REPORTED STUDY TIME AND THEORY TESTS FOR SUBGROUP C

Test	Study Time			
	Part I		Part II	
	r	r^2	r	r^2
Take I	-.25943	.06730	-.11813	.01395
Theory I	-.00126	.00000	-.54903	.30144
Take II	.02196	.00048	-.07858	.00618
Theory II	-.07969	.00635	-.37239	.13867
Take III	.00609	.00004	-.12137	.01473
Theory III	.08939	.00799	-.55974	.31331

CORRELATION BETWEEN THEORY KNOWLEDGE AND ABILITY TO TAKE DICTATION

The relationship between the ability to write shorthand according to theory, as determined by a criterion test, and the ability to record and transcribe dictation of new material is not a clear-cut one. Therefore, it was decided to check the relationships of these factors in this study, particularly as the relationships might be affected by the out-of-class practice methods.

For the total group, the correlation between theory test results and the ability to record and transcribe dictation was the highest on the first, or pre-check, tests. It went lower with each succeeding test, as indicated in Table 4.17.

TABLE 4.17

CORRELATION BETWEEN THEORY AND TAKES FOR THE FULL GROUP

	Theory I		Theory II		Theory III	
Take	r	r^2	r	r^2	r	r^2
I	.65945	.43488	.60985	.37192	.57264	.32792
II	.57132	.32641	.56754	.32210	.59049	.34868
III	.53383	.28498	.57786	.33392	.54851	.30086

However, it may be noted that the correlation between Theory II and each of the three takes was approximately the

same; this was also true for Theory III. The correlation between Theory I and the takes varied more than the other theory test correlations, decreasing from the first to the third take.

The correlation between theory and takes according to the method of study used is shown in Table 4.18.

TABLE 4.18

CORRELATION BETWEEN THEORY AND TAKES FOR THE SUBGROUPS BY METHODS

	Take I/Theory I		Take II/Theory II		Take III/Theory III	
Method	r	r^2	r	r^2	r	r^2
A	.81076	.65734	.64793	.41982	.49533	.24535
B	.51684	.26712	.61853	.38258	.59631	.35558
C	.61675	.38038	.42244	.17845	.53587	.28715

At the outset, the correlation between the test results of those assigned to study by the traditional method (A) was the highest; the coefficient of determination was .65734. Those assigned the reading method of study (B) had the lowest coefficient, .26712, in the pre-check tests.

In the tests at the end of Part I, Take II and Theory II, those who used Method A were again the ones whose scores showed the highest correlation, .41982. Those who studied by spot-writing-from-taped-dictation method (C) had the lowest correlation in their second tests, .17845.

Those using Method B achieved the highest coefficient of determination, .35558, between their final tests; and the lowest coefficient between Take III and Theory III was .24535, result of the scores made by those using Method A.

CORRELATION BETWEEN STUDENT ATTITUDE TOWARD STUDY METHOD AND SUCCESS ACHIEVED IN TAKING DICTATION

To determine the effect that might occur on the final results if students liked one method better than another, all students were asked on the opinionnaire to indicate how well they liked their study method in both Parts I and II. Their responses are summarized in Tables 4.19 and 4.20.

TABLE 4.19

ATTITUDE TOWARD OUT-OF-CLASS PRACTICE METHODS USED IN PART I

Response Choices	Class, Methods, and Number Responding			
	Class I			Class II
	Method A	Method B	Method C	Method D*
Like extremely well	3			1
Like	3		2	5
Mildly dislike	1	7	5	8
Strongly dislike	1	1	2	5
Indifferent	1	1		3

*One student in this class did not answer an opinionnaire.

TABLE 4.20

ATTITUDE TOWARD OUT-OF-CLASS PRACTICE METHODS USED IN PART II

	Class, Methods, and Number Responding					
	Class II			Class I		
Response Choices	Method A*	Method B	Method C	Method D (Part I Method A)	Method B	Method C
Like extremely well	3			2		
Like	4	1	2		3	4
Mildly dislike		2	3	2	5	2
Strongly dislike		3	2	2	1	1
Indifferent	1		1	3		2

*One student in this group did not answer an opinionnaire.

To indicate their attitude toward the method of doing out-of-class practice assigned them, students were given five choices from "like extremely well" to "strongly dislike." "Mildly dislike" was the most-checked item in Part I for all methods except Method A, the traditional method of study.

In Class I, where the experimental methods were being used, three students indicated that they liked the traditional method of study (A) very well; no one in either of the other two groups did so. Three also liked Method A; and two liked spot-writing-from-taped-dictation (Method C). No one liked the reading method (B). One student indicated a mild dislike for Method A compared to seven and five, respectively, for Method B and Method C. Two students strongly disliked Method C; one person in each of the other groups did so.

The results in Class II, the one using the holding method (D) during this part of the experiment, had at least one response in each of the possible choices. However, over half the class indicated either a mild dislike or strong dislike for the holding method.

The responses for Part II of the study were similar to those of Part I. In Class I, the group who used the holding method (D), there were two or more checks for every choice. Because these students used this fourth method after using one of the other three, their replies for Method D are summarized on Table 4.20 according to the method used in Part I. Once again the dominant choice indicated a mild dislike for the method. More students who had used the reading method (B) during Part I disliked Method D than did students who used the other two methods.

Students who used the treatment methods in Part II of the study were in Class II. Only Subgroup A, those studying by the traditional method, had any students indicate the study method was liked extremely well. No one in this subgroup indicated disliking the method. In the B and C subgroups, however, more students indicated a dislike for the method used than indicated liking, as shown previously in Table 4.20. The computer analysis of Basic Statistics indicated very little correlation between reported student attitude and Take results, though it had been assumed that if students liked a study method, they would achieve more. As presented in Table 4.21, the attitudes indicated for Part I showed more correlation with all Takes than did the attitudes recorded for Part II.

TABLE 4.21

FULL GROUP CORRELATION BETWEEN STUDENT ATTITUDE TOWARD STUDY METHOD AND ACHIEVEMENT IN TAKING DICTATION

Student Attitude	Take 1		Take II		Take III	
	r	r^2	r	r^2	r	r^2
Part I	.29189	.08520	.40337	.16271	.34138	.11654
Part II	.06510	.00424	.15603	.02435	.10709	.01147

A comparison of Take results and student attitude toward the method of study used by the three subgroups showed that only Subgroup C (spot-writing from taped dictation) in Part I produced a correlation which might be noteworthy; r equaled .71093. See Tables 4.22, 4.23, and 4.24. Correlations were higher in Part I than in Part II.

TABLE 4.22

CORRELATION BETWEEN STUDENT ATTITUDE TOWARD STUDY METHOD AND ACHIEVEMENT IN TAKING DICTATION, SUBGROUP A

Student Attitude	Take I		Take II		Take III	
	r	r^2	r	r^2	r	r^2
Part I	.19025	.03619	.30698	.09424	.36525	.13341
Part II	-.03431	.00118	.06882	.00474	.23625	.05581

TABLE 4.23

CORRELATION BETWEEN STUDENT ATTITUDE TOWARD STUDY METHOD AND ACHIEVEMENT IN TAKING DICTATION, SUBGROUP B

Student Attitude	Take I		Take II		Take III	
	r	r^2	r	r^2	r	r^2
Part I	-.01406	.00020	.29382	.08633	.10270	.01055
Part II	.00126	.00000	.36092	.13027	.08760	.00767

TABLE 4.24

CORRELATION BETWEEN STUDENT ATTITUDE TOWARD STUDY METHOD AND ACHIEVEMENT IN TAKING DICTATION, SUBGROUP C

Student Attitude	Take I		Take II		Take III	
	r	r^2	r	r^2	r	r^2
Part I	.58797	.34571	.71093*	.50542	.66829	.44661
Part II	.14649	.02146	.11527	.01329	.08503	.00723

*Substantial relationship

CORRELATION BETWEEN SUCCESS ACHIEVED IN TAKING DICTATION AND STUDENT ABILITY AS MEASURED BY SCAT TOTAL SCORES

As indicated previously, the Total scores on the School and College Ability Tests taken by the subjects in this study when enrolling in Ferris State College were of significance as a covariate when used together with other factors. The question raised at the outset of the study was "What is the correlation between success achieved in taking dictation and the ability of students as measured by scores (Total) on the School and College Ability Tests?" Could students enrolling in shorthand classes be given more assistance if greater attention were paid to the SCAT scores that are available for students entering the college?

The computer-figured correlations between the Takes in the study and the Total SCAT scores, as presented in

Table 4.25, were not high enough to be of reliable predictive use though Takes II and III showed a moderate relationship.

TABLE 4.25

FULL-GROUP CORRELATION BETWEEN SUCCESS ACHIEVED IN TAKING DICTATION AND SCAT TOTAL SCORES

		SCAT Total Scores	
Take	n	r	r^2
I	49	.33639	.11316
II	48	.48153	.23187
III	49	.53037	.28129

Did the method used for out-of-class practice make any difference in the correlations between Takes and the Total SCAT scores? Specifically, did those who used a traditional method of study (Method A) have a higher correlation? If so, SCAT Total might be used predictively with the "usual" classes. The answers to these questions appear to be negative, as indicated in Table 4.26.

TABLE 4.26

CORRELATION BETWEEN SUCCESS ACHIEVED IN TAKING DICTATION AND SCAT TOTAL SCORES IN SUBGROUPS A, B, AND C

	SCAT Total Scores					
	Method A		Method B		Method C	
Take	r	r^2	r	r^2	r	r^2
I	.26384	.06961	.29803	.08882	.37910	.14372
II	.40852	.16689	.59377	.35256	.58062	.33711
III	.52334	.27389	.28104	.07899	.63848	.40765

Results from Subgroup C (spot-writing from taped dictation) seem to have the most correlation with SCAT Total scores. None of the correlations, however, appear high enough to use SCAT Total scores as a reliable predictor of shorthand success, given the out-of-class practice method to be used.

Subgroups A and C had their highest correlations at the end of the experiment, and Subgroup B's (read-only) highest correlation was at the end of Part I, or Take II. The traditional subgroup (A) never achieved the highest-of-the-three correlations at any check point; each of the other methods did.

STUDENT OPINIONS OF SEVERAL OTHER FACTORS PERTAINING TO OUT-OF-CLASS PRACTICE

A number of questions asked on the opinionnaire have not been discussed thus far; some of the responses to the questions are analyzed in this section.

Amount of Present Study Compared with Previous Work

During the experimental portion of the study, no one in either class indicated having used more time in out-of-class practice than she had used in previous shorthand courses; however, 22 of the 48 who answered this question indicated they had spent much less time. Eight indicated they spent about as much time in such study as they had in previous courses. This information is given in Table 4.27, according to the method of out-of-class practice used.

TABLE 4.27

COMPARISON OF OUT-OF-CLASS PRACTICE TIME IN THIS STUDY WITH SIMILAR PRACTICE TIME IN PREVIOUS COURSES

Response Choices	Method of Out-of-class Practice Used			
	A	B	C	D
Considerably more time				1
Some more time				1
About the same amount of time	6		2	8
Some less time	6	6	6	12
Much less time	4	9	9	26

The majority of students, 31 out of 49, reported they kept an exact record of time studied. The other 18 recorded approximations of time studied immediately after the study. Also, 38 people either liked or were indifferent to keeping a record of time studied; and 11 people disliked doing so.

The majority of students, 38 out of 48, also indicated spending less time on shorthand study during the holding phase. Two students using the holding method in Part II did indicate spending more time studying in this part than in previous courses. The holding-phase out-of-class practice is indicated in Table 4.29 as Method D.

Contribution Practice Made to Students' Progress

Because of the experiment, students seemed more aware of their out-of-class efforts than in prior shorthand courses.

Did they believe the out-of-class practice contributed to their skill? Did they progress as they expected? Responses to these questions are summarized in Tables 4.28 and 4.29.

TABLE 4.28

STUDENT SELF-EVALUATION OF CONTRIBUTION OUT-OF-CLASS PRACTICE MADE TOWARD SHORTHAND SKILL ATTAINED DURING EXPERIMENT

Response Choices	Method of Out-of-class Practice Used			
	A	B	C	D
Method contributed greatly	5		1	7
Method contributed very little	8	10	11	31
Method made no difference	2	5	5	9

TABLE 4.29

STUDENT SELF-EVALUATION OF PROGRESS FOR THE QUARTER

Response Choices	Method of Out-of-class Practice Used		
	A	B	C
Progress greater than expectations	1	1	1
Progress same as expectations	4	3	2
Progress less than expectations	12	11	12

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 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. Furthermore, most believed their progress was less than their expectations. One person in each experimental method-of-study group believed she had attained more than her expectations, however.

Most- and Least-Liked Aspects of the Study Methods

The following are examples of the comments students made about what was most liked and what was least liked while using the experimental methods A, B, and C. The method group(s) from which the comment came is given in parentheses.

Liked most:

Same method as used previously. (A)

Could choose own time to do it. (C)

Writing out assignment. (A)

Didn't take long. (Most frequent comment.) (A,B,C)

Nothing at all. (A,B,C)

Writing shorthand out--could read it. (A)

Forcing of spot dictation. (C)

Able to write in same way would take in office. (A)

Liked least:

Too limited practice. (A,B,C)

Lost speed, should have written more. (A,B,C)

Didn't feel getting much out of it. (A,B,C)

Having to do assignment. (A)

Time taken to walk over and listen to tape. (C)

Tape was too fast, couldn't keep up. (C)

Nothing. (C)

Spot writing. (C)

Amount of practice should be left up to student. A,C)

No writing. (B)

Made for sloppier writing; harder to read notes. (C)

Same assignment as always and doesn't seem to help. (A)

Although the holding pattern was not set up to be a specifically tested and measured part of the study, it was a fourth method of doing homework. Because of the design of the study, Method D was reacted to separately. Many of the same comments also were made for this method as for the three experimental ones. The following comments are different from those listed for A, B, and C above and pertain to the holding method, D.

Liked most:

Builds speed faster than usual method.

Learned to spot write--a fun method.

Eliminated need for careful copying.

Looking at book allowed learning of words.

Easy (when in a hurry).

Got to write again.

Liked least:

Did not contribute to speed.

Spot writing difficult; writing faster than I could read.

Couldn't read back.

Learned to get something down but couldn't read back.

Wasn't learning to form words.

General Comments

In addition to the remarks pertaining to the most-liked and least-liked facets of the study, students were asked for general comments. Many of the same points mentioned above appeared again in this section of the opinionnaire; those that follow are examples of some of the comments made that were not previously given:

If an A in here, boost my grade--that's terrific. (A)

I hope you have gained something from this to help others in the future. (B)

I don't mind doing shorthand out-of-class practice if it will help me build speed. (C)

Each person should be able to pick which kind of experiment she should be able to do. (C)

Intermediate one of the most important classes; theory fresh in mind, student should really be pressured into getting up their speed. All the extra work and class work should be put on the student now. (C)

Outside work on tapes should be encouraged not discouraged. (A)

Experiments are fine when used in right way, but paid tuition to learn speed in shorthand. (A)

Like this method of teaching because my speed has never gone as fast as it has been this quarter. (A)

> Methods used this quarter might be good ones for people who already have a high speed in taking dictation, but it has no value for me because I didn't get enough practice. (B)
>
> Liked the class, but I must admit this type of homework did not seem to improve my ability. The only way to learn something is to practice it, and I do not think reading a lesson is practicing. (B)
>
> Wish I had been in a group that was able to do their shorthand homework in the privacy of their own room. (C)
>
> Not best to use spot writing all the time--a little variety. (C)
>
> Variety in shorthand homework is needed. (C)

A general comment that was not recorded in the opinionnaire but was made orally to the instructor on the last day of class seemed worthy of inclusion. One student who had done well in achieving speed in dictation in the course made the unsolicited comment that it would help to work harder sooner. When asked whether she meant in or out of class, she replied, "In class, by really trying to get the dictation the way you do at the end of the quarter." (The information in her opinionnaire, checked at a later date, revealed that this student had done extra shorthand study during the course of the experiment.) (C)

DISCUSSION

Although the analysis of covariance test found no statistically significant differences in the three methods of doing out-of-class practice, the time used for study is important. As there was a decided variance in the amount of

time spent by individuals in out-of-class practice in both Subgroup A (traditional) and Subgroup B (read-only), mean study time for the groups seemed most useful for comparison purposes.

The grand mean study times for the full groups revealed that those studying by a traditional method spent almost three times as long on their out-of-class work as did those studying by the spot-writing-from-taped dictation (31 minutes compared to 11 minutes). Those who studied by the reading-only method spent approximately two and one-half times as long on out-of-class practice as did the spot-writers from taped dictation (29 minutes compared to 11 minutes). And the spot-writing from self-dictation (the holding method which everyone in the experiment did for half of the experiment) took twice as long to do the assignments as did the spot-writing from taped dictation (22 minutes compared to 11 minutes).

When the times of the extra-study students were removed, the ratios remained about the same--two to three times as long for the other methods as compared to the spot-writing-from-taped-dictation method. These figures seem to indicate that though the spot-writing-from-taped-dictation method did not produce the results hypothesized, it did produce comparable results in much less time. Upon learning that the methods of study were to be changed the next day, one student commented that she was disappointed because she was just getting used to spot-writing from the taped

dictation. Perhaps this "getting used to" is a factor which should be given further consideration; students were familiar at the outset with both the other methods--reading and writing from self-dictation (Method A), and reading only (Method B).

Although they changed to spot-writing from self-dictation, the "getting used to" may partially account for why the students in Subgroup I-C did not report doing any extra study, even in Part II.

The correlations between reported study times and test results (take and theory) were nearly all negative. Few of them were high enough to be statistically significant, but the fact that most of them were negative seems to indicate that personalized out-of-class assignments are advisable; all students do not need to spend the same amount of time studying shorthand.

During the course of the experiment, and in the responses to the opinionnaire, students indicated almost no faith in the use of reading-only as a study technique. Yet a look at the word-gain scores of the full groups and the no-extra-study groups seem to indicate such lack of faith was not justified by the results obtained. In Class I, in both the full group and the no-extra-study groups, the students who had used the reading-only method (B) gained the most words for the quarter. The major portion of their gain came in the second part of the experiment. With this in mind, it should be noted that for the full subgroup (B)

their SCAT Total scores and Take II scores had a correlation of .59377 while Take III scores and SCAT Total scores had a correlation of .28104. This lower correlation when Take scores increased may indicate that those with less ability were able to gain more having used the read-only method for out-of-class practice.[5] In the other subgroups (A & C) the correlations went up with each succeeding test.

In Class II the students who studied by reading-only in the full group followed the students who had studied by spot-writing from taped dictation in the number of words gained for the quarter. However, in the no-extra-study groups, the reading-only students had a slightly higher mean gain for the quarter. Therefore, reading-only may be effective when used in conjunction with spot-writing from self-dictation. Further, the reading-only practice may be more effective when it precedes the spot-writing practice. In all but the Class I full group, those students who had studied by Method A (traditional) achieved the least number of mean words gained for the quarter; Method A was, however, the method for which students indicated the greatest liking.

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[5]Mary S. Campbell in "Ability Levels of Ferris State College Freshmen Fall Quarter 1970-71" (Big Rapids: Ferris State College, Educational Counseling Center, March, 1971), p. 1, (Mimeographed), stated as follows: "The SCAT is included in the placement battery since it is a device primarily for predicting academic success. The test was developed to help estimate the capacity of an individual student to undertake the academic work of the next higher level of schooling and tends to correlate better than most comparable tests with grades earned in college. With the results of a general ability test like the SCAT, it is possible to make some determination of a student's ability to achieve."

As was pointed out earlier in this chapter (p. 87), Class II, in both the full groups and in the no-extra-study groups, had greater total mean gain in words achieved in dictation than did Class I. The differences were not statistically significant, but significance is hard to achieve with small groups. None of the analyses performed found a significant difference in giving the treatment methods of practice in the first part or in the second part of the experiment. However, the greater achievement by Class II may be an indication that the last part of the quarter, or session of school, was the more productive portion.

The correlations between theory and takes were not high enough to be statistically significant, though for the full group they were more even from one test to the next than for the subgroups. The correlations between takes and theory tests for those who studied by Method A (traditional) decreased considerably from one set of tests to the next (from .81 to .65 to .50). The comparable correlations for the Method B (read-only) students increased perceptably and then decreased slightly (from .52 to .62 to .60). Correlations of the Method C (spot-writing from taped dictation) students decreased considerably and then rose (from .62 to .42 to .54). Perhaps in total, these correlations say that limited study, when part of it is spot-writing, adversely affects one's ability to write theoretically correct shorthand, except for the combination of reading-only (Method B) and spot-writing from self-dictation (Method D). The

combination for practice of Method C and Method D appears slightly more effective than the combination of Method A and Method D.

An examination of the attitudes expressed by students toward the study method used showed that one factor does not come through as it might. Most students were very unhappy in having the amount of study they were allowed to do limited, and it is the researcher's belief that this fact definitely affected their reactions to the method of study used. They seemed to be more unhappy with having to limit their study than they were with the particular study method to be used. This may be part of the reason the correlations between student attitude and success achieved in taking dictation were not higher.

SUMMARY

The results of the three methods of doing out-of-class practice for intermediate shorthand compared in this study were tested by an analysis of covariance. It had been hypothesized that Method C (spot-writing from taped dictation) would produce greater results in taking and transcribing dictation than would either Method A (the traditional read once and write once) or Method B (read-only). Further, it was hypothesized that Method A would be more productive than Method B. The analysis of covariance test of treatments, a multivariate test, found the probability to be less than .5504. Therefore, it was not possible to accept any of the

first three hypotheses and conclude one method to be better than the others for doing out-of-class shorthand practice.

A repeated measures analysis of variance test was done on the results from Class I to check for immediate and delayed effects of the three study methods. No statistically significant differences were found, either between the subgroups in Class I or between the accomplishments in Part I and Part II for this class.

Differences in accomplishments in Parts I and II were also checked in the analysis of covariance for both groups because it was hypothesized that all practice methods would produce better results in the second part. Here again, no significant differences were found; the probability was only .3499.

The correlation between being able to write shorthand correctly, as measured by theory tests, and the ability to take dictation was not high enough for any of the methods of study to be considered significant. The correlations tended to decline from one take to the next for all but those who studied by the reading-only method.

Basically, students did not like having the amount of practice they could do limited; nor did many of them like the method of practice assigned. Method A, the traditional way, was the most-liked method.

The relationship between success in taking dictation and the School and College Ability Test, Total, was not high

enough to be used predictively. The highest correlation, r = .53037, was achieved on the final take by the full group.

Simple comparisons were made of the amount of time used for out-of-class practice as reported by the students. Those studying by Method C (spot-writing from taped dictation) used from one-third to one-half the time of those who studied by other methods as follows: Method A, 31 minutes; Method B, 29 minutes; Method C, 11 minutes; and Method D (the holding method of spot-writing from self-dictation), 22 minutes.

Students indicated that they thought the amount of practice was too limited, but they liked the fact that it did not take long.

Results for the full groups and the no-extra-study groups tended to be very similar.

Chapter 5

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

SUMMARY

Enthusiastic beginning shorthand students frequently become less eager after they have learned the theory of the system and the daily assignments are done in the same way day after day. Variety is needed in their out-of-class practice. This study was undertaken in an effort to compare the effectiveness of two methods of homework study with the one generally used by intermediate shorthand pupils.

Need for the Study

Educators express considerable concern with out-of-class practice, yet only limited research effort has been applied to this education area. A survey of the literature revealed that considerable attention has been given to what goes on in the shorthand classroom, but only a very limited amount of attention has been concerned with the out-of-class practice. Further, the intermediate shorthand area seemed to have received much less attention than the beginning or ending stages.

Purposes of the Study

The primary purpose of this study was to compare the effectiveness, under controlled conditions, of three

different methods of doing out-of-class practice in intermediate Gregg shorthand at the college level.

All methods of out-of-class practice compared were based on the textbook used in the course. Method A was the traditional method in which students were asked to read the entire lesson once and then write all of it legibly once from self-dictation. In Method B, the assignment was to limit the study of the lesson to reading it, although the lesson could be read two or three times. The third way, Method C, made use of tapes prepared especially for this study. The dictation was recorded at a speed-forcing rate, and the student was asked to spot-write the lesson once from the taped dictation while reading and keeping her eyes on the copy.

In addition, there were several secondary purposes:

1. To compare the study time required by each of the out-of-class-practice methods.

2. To determine whether 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 takes.

3. To assess student reaction to the methods to determine whether there is a significant correlation between liking a method and the ability to take dictation.

4. To determine whether there is significant correlation between the SCAT Total score and the ability to take dictation.

Hypotheses Tested

The effectiveness of the three methods of out-of-class practice was checked by testing the following directional hypotheses in their null forms, based on the mid-term and final achievements of students in the two classes:

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, when using the spot-writing-from-taped-dictation method than will be achieved by students using the traditional method.

H_2: Students will develop greater skill in taking dictation of new material, as measured by the number of correct words on a criterion test, when using the spot-writing-from-taped-dictation method than will be achieved by students using the reading method.

H_3: Students will develop greater skill in taking dictation of new material, as measured by the number of correct words on a criterion test, when using the traditional approach than will be achieved by students using the reading approach.

H_4: All three methods of out-of-class practice will produce better results, as measured by the number of correct words on a criterion test, in the second half of the experiment.

Procedures Used

All of the students (56 at the outset) enrolled in Intermediate Shorthand at Ferris State College during the

spring quarter, 1971, were the subjects in this study. Two classes were taught, back-to-back, by the same instructor using the same lesson plans in both classes as controls of these variables.

The SCAT Verbal and Total scores, and the two pretests, Take I and Theory I, were used as covariates and were found to be highly significant. Although the students in the two classes had quite different backgrounds in shorthand, there were no significant differences between the classes after equating them with the covariates.

The textbook used in the study was Gregg Shorthand for Colleges, Diamond Jubilee Series, Volume Two.

A two-by-two design was followed in which each of the members of one class did the out-of-class practice by one of the three experimental methods randomly assigned during the first half of the study while the other class used a holding method. The procedures in the two classes were reversed during the second half of the study. The holding method consisted of studying the lesson by one-time reading and one-time spot-writing the lesson from self-dictation; it was used to negate any residual effects of the three out-of-class practice methods being compared. The class to receive the treatment first was randomly selected.

Dictation-transcription tests and theory tests given at the beginning of the study, the end of Part I, and the end of Part II were used to measure and compare student achievement by methods of study.

The analysis of covariance, in addition to equating the two classes, tested the effects of the treatments and also the interaction of classes with treatments. A repeated measures analysis of variance was done on the results from Class I to test for immediate and delayed treatment effects.

Each student submitted a report daily of the time used in studying shorthand; these were used to compare this item. At the end of the quarter, students completed an opinionnaire in which they gave their reactions to the experiment.

Findings

The results from 50 students (27, Class I; 23, Class II) were included in the analysis of covariance test. Other students either dropped from the course or did not study in the way assigned. Of the 50 included in the analysis, 15 reported in their opinionnaires submitted at the end of Part II that they had done considerable extra study. When the scores of these "extra study" people were removed and the tests re-run on those remaining, the tendency was for the scores to be higher than for the full group; there were no major changes in any test results.

The analysis of covariance test of treatments, a multivariate test, found the probability to be less than .5504 for the full group. Therefore, it was not possible to accept any of the first three hypotheses and conclude one method to be better than the others for doing shorthand out-of-class practice.

A repeated measures analysis of variance was done on the results from Class I to check for immediate and delayed effects. Here, too, there were no significant differences found between the subgroups or between the accomplishments in Part I and Part II for this class.

Differences in accomplishments in Part I and II were also checked in the analysis of covariance for both groups because it was hypothesized that all practice methods would produce better results in the second part. However, no significant differences were found; the probability was only .3499. It was believed, though, that the holding treatment used by Group I during the second part of the study may have affected the results compared in the interaction test. A comparison of group mean gain scores on the transcription tests was made. Five of the six subgroups made the major portion of their word gains during the second part of the study, and the total gain for the quarter by all six groups was similar though not evenly divided over the quarter. Although the differences were not significant statistically, Class II (used the experimental methods of study the second part) averaged 8.62 more words gained per student during the experiment.

The following findings pertain to the secondary purposes:

Those who used Method C (spot-writing from taped dictation) studied considerably less time (11 minutes daily), than did any of the others. Those who used Method A (the

traditional) averaged 31 minutes; those who used Method B (reading) averaged 29 minutes; and students using Method D (holding) averaged 22 minutes. The amount of study done in Part II was less for every group but those using Method C. There tended to be a negative correlation, though not significant, between the amount of study time and results from transcription tests.

The correlations between takes and theory tests were not high enough to be considered significant. The highest full-group correlation was r^2=.43488 on the first set of tests. For the full group, the correlations went down from one set of tests to the next.

Basically, student attitude was that they did not like any of the methods of study, though there was more positive reaction for the traditional method than for any other. Those using Method C (spot-writing from taped dictation) had the highest correlation between attitude and achievement in taking dictation, r^2=.50542. The highest correlation by those using Method A was r^2=.13341; and for those using Method B, r^2=.13027 was the highest.

The correlations between the Takes and the SCAT Total scores were all low; the highest coefficient of determination (r^2) was .28129.

CONCLUSIONS

The following conclusions are based on the findings, including the statistical treatment of the data, obtained

from this out-of-class shorthand practice experiment conducted by the researcher and are not claimed to apply to shorthand classes in general.

1. Since Method C, spot-writing from taped dictation, required so much less time than the other methods with which it was compared in this study to produce comparable results, it may be used more extensively by time-conscious educators.

2. Achievement in taking dictation is likely to be greater during the last half of the term of school than in the first half, though the difference is not statistically significant, regardless of the out-of-class practice method used. In a given school term, there seems to be a maximum amount of gain in taking dictation a student may expect to achieve.

3. Personalized out-of-class practice assignments are needed in intermediate shorthand, based on the reports of extra work done, as those students not doing well were mainly the ones who did more.

4. Limited study and extensive use of spot-writing tend to reduce the correlation between Theory tests and Take results.

5. School and College Ability Test Total scores are not likely predictors of success in shorthand, though combining SCAT Verbal and Total scores with the results of a Take and a Theory test provides a measure for predicting success in intermediate shorthand.

6. Although students like having to do only a very limited amount of out-of-class practice, they are apt to be highly distressed at having the amount of study they may do severely limited.

7. Students seem able to achieve even though they do not like the method of study being used.

RECOMMENDATIONS AND RESEARCH IMPLICATIONS

The following recommendations made are based on the findings and conclusions of this study.

Methodology

1. A variety of methods of studying text materials should be used; no one method should be used exclusively. All the methods of out-of-class practice used in this study, including the one used in the holding period, may be used confidently for homework study in intermediate shorthand classes at the college level. Attention should be given to the varying time required to accomplish the several methods.

2. Spot-writing from taped dictation could be most advantageously used when students are provided the easiest access possible to the tapes. A dial access system which would enable students to dial in by phone from their homes and listen to the desired tape, several times between class sessions if desired, would undoubtedly assure maximum use.

3. Meaningful reading of shorthand plates should be encouraged, with this reading being the only assignment of

the text material on occasion. Reading-only assignments, followed by spot-writing assignments, should produce some of the best results.

4. All students do not need the same homework assignment in shorthand, and an effort should be made to personalize the out-of-class practice intermediate shorthand students are asked to do. Ideally, students should have considerable freedom in deciding what homework and how much is best for them.

5. The four methods of out-of-class practice which were investigated in this study may provide ample study of the text material, but it may be well to provide additional dictation work out of class at the intermediate level to achieve maximum results.

6. Students should be encouraged to work earnestly, in class, all during the course and not just during the last week or two.

7. It should be possible to make use of the combined information provided by the SCAT Verbal, SCAT Total, a Theory test, and a Take to help guide students entering college, intermediate Gregg shorthand classes.

8. Because time will be at a premium as efforts are made to individualize instruction in the new block programs, consideration should be given to using spot-writing from taped dictation at speed-forcing rates with non-beginning shorthand students. As this method requires much less time, students could be asked to use the tape for each lesson two or three times as needed for skill development.

Further Research

The following questions requiring further research are based on the results of this study.

1. What would be the results obtained with these out-of-class practice methods if students were allowed to select the method of study to be used; use that method, but only that method, as long and as often as desired?

2. What would be the result obtained with these out-of-class practice methods if there were enough students and enough time to use a Latin-square design whereby each student would, at some time during the experiment, study by each method? This might also show the order in which the methods could best be used and give an indication of a study pattern which would help reduce attrition.

3. What research results would there be if these methods of out-of-class practice of the text material were combined with the use of commercially prepared dictation tapes?

4. What would be the research results of using Method C, spot-writing from taped dictation, if the speed of the dictation were lower at the start of the experiment and increased gradually with the highest rate being used the last part of the study?

5. What would be the results of research developed to investigate why the correlations between takes and theory tests went down from one test to the next for the full groups in this study? Was it because of the extensive use of spot-writing?

6. What would be the results of research developed to determine what is the normal gain in taking dictation in college level intermediate shorthand classes for a given time, such as a term?

7. What research results would there be if some means were devised to get shorthand students to accept the end-of-the-quarter pressure throughout the entire quarter?

8. What would be the results of further research to determine the relationship between the ability to write shorthand correctly and the ability to take dictation if the design of this study were used with more subjects and for a longer period?

9. What would be the results if further research were conducted along the lines of this study to gain results in less time at all levels of non-beginning shorthand by using the various out-of-class practice methods with student selection of methods?

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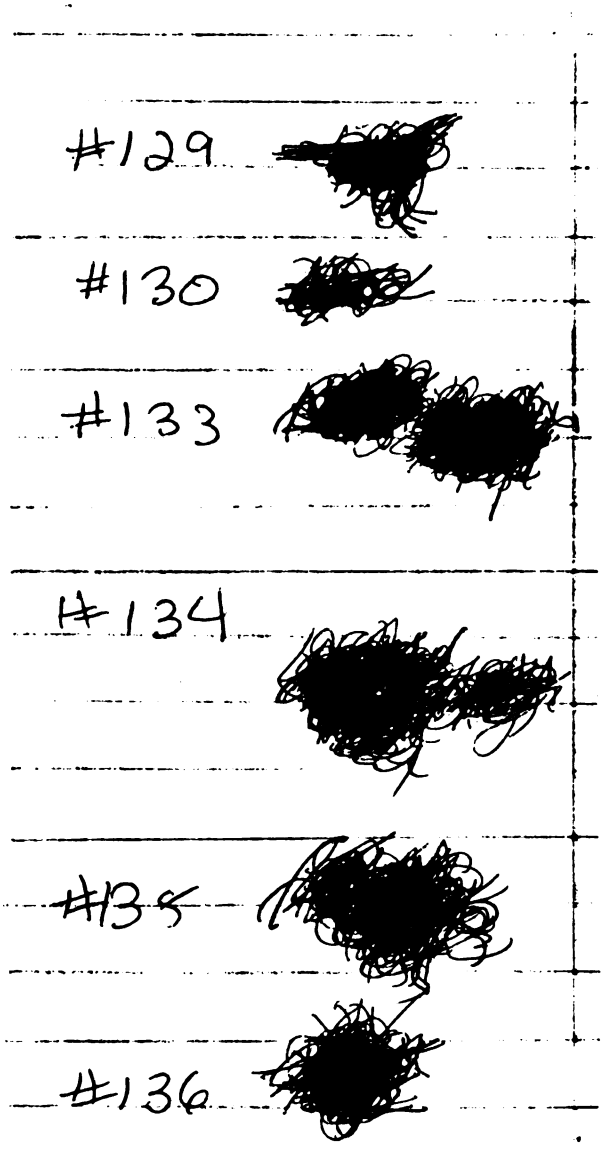
APPENDICES

APPENDIX A

SPOT-WRITING EXAMPLES



APPENDIX B

TIME-REPORT FORMS

Name _____ Class Number _____

Date Done _____ Lesson _____

Study Time
for
Reading and Self-dictation
from Text
(One time only)

From	To	Total
a.m. / p.m. _____	a.m. / p.m. _____	_____

Place study was done _____

Comments:

Name _____ Class Number _____

Date Done _____ Lesson _____

Study Time For Reading Method
(Two or three times)

	From	To	Total
1st Reading	a.m. / p.m. _____	a.m. / p.m. _____	_____
2nd Reading	a.m. / p.m. _____	a.m. / p.m. _____	_____
3rd Reading	a.m. / p.m. _____	a.m. / p.m. _____	_____

Minutes of Total Study Time _____

Place study was done _____

Comments:

Name _____ Class Number _____

Date Done _____ Lesson _____

Study Time
for
Spot-writing-from-taped
Dictation
(One time only)

From	To	Total
a.m. / p.m. _____	a.m. / p.m. _____	_____

Place study was done _____

Comments:

Name _____ Class Number _____

Date Done _____ Lesson _____

Study Time
for
Spot-writing from Self-Dictation
(One time only)

From	To	Total
a.m. / p.m. _____	a.m. / p.m. _____	_____

Place study was done _____

Comments:

APPENDIX C

THEORY TESTS

Theory Test I

about, majority, yesterday, what, business, came, change, locality, planned, harder, only, occasion, losses, mislead, failure, chemical, exported, meetings, entrance, attention, people, either, complaint, payment, voice, meter, encouragement, attempt, continued, difficult, fame, next, electric fan, fine, assume, consequently, employment, ability, come, empty, become, regulate, begun, quietly, ink, if you want, I should be able, Dear Sir, to have, to know

Theory Test II

after, book, convenient, quick, examine, mental, $300,000, making, impressed, facilities, efficiency, find, enterprise, park, mark, practical, railroad, free, certainly, president, transferred, ounce, people, few, preach, later, however, supervise, continue, difficulties, electric motor, enjoyed, telegram, may, resume, personality, submit, employment, merchant, idea, become, privilege, supervisor, sing, named, one of the, there has been, days ago, to me, of course

Theory Test III

age, editor, quit, introduction, tables, tired, quarterly, saves, $17, claims, basis, figure, settled, trained, misprint, throughout, although, articles, raid, serious, assignment, mother, certain, impressed, now, observe, enlarge, estimate, seldom, avenue, appreciate, stay, contribute, brotherhood, within, submit, frequent, membership, specifications, public, nearly, drink, possibility, rang, newspaper, to be, we hope, your order, to make, you want

APPENDIX D

DICTATION TESTS

Take I-1, 100 words per minute

Dear Mr. Ashley: I attended a conference of retail managers last week in Washington, D.C., and your name was mentioned several / times as a leader in the field of retail credit.

At one of the meetings, the speaker discussed several methods of handling poor credit / risks. He spoke highly of the outstanding record you have made in collecting overdue accounts.

I am writing to you now because we / have a serious collection problem facing us. I am the credit manager of a furniture store which has been in business for many (1) years. We have never had any difficulty with collections until recently. Perhaps the increased cost of living has created the / problems we are now experiencing. A number of our customers have moved away from the city leaving large unpaid balances. / Unfortunately, it is almost impossible to find some of these people. As I am sure you know from your own business, unpaid bills can make / a big difference in the profit picture. Our own margin of profit is a small one, and the only way we can stay in business is to (2) reduce the number of outstanding bills.

As credit manager, I have followed the usual procedure of sending letters calling attention / to overdue payments and stating that legal action would be taken unless bills were paid immediately. Many of my letters / are returned with the notation that the person has moved and left no forwarding address. Even when I place these bad accounts with collection / agencies, the results are sometimes unsatisfactory.

I would be grateful for any help you can give me.

Yours very truly, (3)

Take I-2, 80 words per minute

Dear Mr. Grant: As a college graduate, you can qualify for a special low-cost auto insurance / program that might not otherwise be available to you.

This program is offered by Country Auto Insurance, / the world's second largest automobile insurance firm. You can save up to 30 percent a year on your car / insurance and still pay the premiums in convenient monthly payments.

Here are three major reasons why you can (1) save with Country Auto Insurance:

1. You can buy your insurance directly from us and eliminate the / salesman's commission. As a result, this savings is passed along to you.

2. We insure many responsible / people like you. On the average, college-trained people are careful drivers and have few accidents. This helps to keep / premiums low.

3. We provide more benefits than most other companies at no extra cost. We also give you (2) fast claim service. Over half of all claims are settled within 24 hours.

You would be wise to find out how / much Country Auto Insurance can save you. Just mail the enclosed card today, and we will be happy to send you / a booklet that outlines our various insurance programs. Do it now before you lose this opportunity / to save up to 30 percent on your car insurance. There is, of course, no obligation.

Very truly yours, (3)

Take I-3, 60 words per minute

Dear Editor: I am submitting the enclosed news release for your consideration / because I believe that the information about our new product will interest / your readers. Home Owners Glue is simple and easy to use. It is also / extremely strong, safe, and odorless, and ideal for many household tasks. Since temperature (1) and dampness do not affect it in any way, it can be used inside or outside / the home. Another important factor is that the glue is available in three / convenient sizes.

To support the statements made in the release, complete technical / data is provided in the enclosed folder.

Should you need any special materials, (2) additional information, or pictures, please let me know. I will be glad to / send them to you.

I hope that you will consider this item worthy of publication. / If you decide to use it in your magazine in the near future, I would / appreciate having a copy of the issue in which it appears.

Sincerely yours, (3)

Take II-1, 100 words per minute

Dear Miss Hope: You are probably aware that many business organizations need to employ top-level personnel for short periods / of time. We are aware that many highly-skilled individuals also seek employment for short periods of time. Bringing these / individuals and businesses together is the function of our agency.

Perhaps you are looking for a permanent job but would like to / supplement your income in the meantime. Perhaps you have recently retired and would like to develop new interests. Your reason for wanting (1) to work on a temporary or part-time basis is immaterial.

You have been recommended to us because of your past / experience, and we would like you to consider registering with our agency. We assure you that you will receive a higher salary / from us than you would from any other personnel agency. As a matter of fact, there is no other agency in the city / exactly like ours.

Formed only one year ago, our firm has placed over 5,000 men and women in temporary and part-time positions. (2) Our reputation in the business world has grown so

rapidly that we now have many positions open that we are unable to fill. / Hundreds of positions are available in all fields, but the demand is greatest in publishing, advertising, and public relations. /

If you are interested in our service now or think you might be at some future date, please fill out and return the enclosed form. We will contact / you within one week to make arrangements for a personal interview. Let us assure you that there is no fee for this service.

Sincerely yours, (3)

Take II-2, 80 words per minute

Dear Mr. Williams: Ellen Smith has been a student of mine for the past two years. During this time, I have seen her / skills progress rapidly. Her long-term career goal is to be an executive secretary. With her / determination and ability, I am sure she will succeed.

You might be interested to know that she has worked / part time as a secretary in our school secretarial service bureau and is well liked by all her co-workers. (1) Her unusual skills of 70 words a minute in typing and 120 in shorthand / will make her an asset to any employer.

Besides her abilities in these areas, she is / also very talented in music. For the past three years, she has been with the state youth orchestra as a pianist. / She has won first place in the state contest for the last two years.

She is also an enthusiastic reader and (2) finds any new ideas or avenues of interest exciting and challenging.

As you already know, Ellen / plans to enroll in your school this fall to further qualify herself for the business world. I would very / highly recommend her for the achievement scholarship you offer. She has the potential for success in her / elected field.

I am glad to be able to write this letter of recommendation for her.

Sincerely yours, (3)

Take II-3, 60 words per minute

Dear Neighbor: The fine furnishings in your home deserve careful cleaning and maintenance. / Their beauty and durability depend on the care they receive.

Superior / Cleaners offers you the quality service your furnishings deserve. Our well-trained staff / uses only the very latest equipment in cleaning carpets, rugs, and draperies. (1)

During twenty-five years of service to this community, we have developed / many unique cleaning methods. For example, we have a new moisture process which / enables us to do an unusually thorough cleaning job on all types of / rugs and carpets. Difficult stains, of course, are specially treated. After the rugs are (2) cleaned, they are brushed to make them look like new again. These services can be performed / either in your home or at our plant.

We also clean draperies with the same fine care. / Cleaning formulas are selected on an individual basis according to / the fabric used.

Why not call on us to help with your cleaning chores?

Very truly yours, (3)

Take III-1, 100 words per minute

Dear Miss Fox: At each monthly meeting of our organization, a guest is invited to discuss a subject of special interest to our / members. The meeting next month will be on Tuesday, October 26, one week before Election Day. Our program committee, therefore, has / decided that a discussion of the city election would be timely.

We would feel privileged to have a representative of your / publication lead such a discussion for us. We understand that you have a number of writers on your staff who have followed the campaigns of (1) the major political parties quite closely. Most important, they have presented their findings to their readers in an objective manner. /

We realize, of course, that many demands are made on your writers' time. However, a great deal of preparation would not be required. We / have found in the past that a presentation of about ten to fifteen minutes is enough. This serves to stimulate the minds of those in the / audience, who can then raise questions in the discussion period that follows.

Our meetings are held at the Chamber of Commerce Building, which (2) is located on Park Avenue at Ninth Street. We usually ask our guests to arrive at 7:30 p.m. If this is not a / convenient time, the usual order of events of our meeting can be changed without a great deal of difficulty. Arrangements could then / be made for our guest to arrive at 8 or 8:30 p.m.

If you have any questions or would like additional information, please / do not hesitate to call us. We would be happy to hear from you. In the meantime, thank you for considering this request.

Sincerely, (3)

Take III-2, 80 words per minute

Dear Mr. Wilson: In a recent conversation with Miss Clark of your office, she suggested that I send you / some information about our fund-raising program.

As you know, during the past ten years, the general public / has become more and more interested in the world of art. Auctions and sales have been steadily increasing in / popularity. Fine art is now within the reach of the average person.

You can combine the interest of the (1) public in art with their interest in the good work of your organization. Furthermore, you can benefit from our / years of experience by letting us conduct a sale of this nature for you.

We have on hand an inventory / of over $1,000,000 in works of fine art. We can afford to offer them for sale at modest prices / because of the large volume in which we deal. You would receive about 20 percent of the purchase price on (2) each item that is sold.

Our experienced staff takes over all responsibility for the success of such / an event. They select the pieces of art and organize the display. In addition, they handle all of the / publicity, including writing press releases, printing and mailing invitations, and preparing the / programs.

Let one of our representatives help you to adapt these fund-raising techniques to meet your needs.

Sincerely, (3)

Take III-3, 60 words per minute

Gentlemen: The charge plate you issued to me was stolen on Friday, January / 31. The day the theft occurred I immediately notified your credit / department of the loss. Miss Esther Jones, a clerk in that department, took the / necessary information and assured me that no additional charges would be (1) accepted. She also told me that if the card were presented in the store, the person / presenting it would be held for questioning.

Nevertheless, I feel that a written / report should be on record, and I would like you to verify that the account has / definitely been closed.

At the same time, I would appreciate your opening (2) another charge account in my name. I assume a different account number will prevent / application of charges from the old charge plate to the new account. I do hope / the new account can be opened promptly.

I should appreciate your assurance that / purchases not authorized by me will not be charged to my account.

Sincerely yours, (3)

Take III-4, 120 words per minute

Dear Mr. Bates: The art director for our city schools, Mr. Frank Johnson, suggested that we contact you and enlist your cooperation in connection with our / service project in your area.

This project, which is already in effect at City Hospital, is sponsored by the League of Women as well as by this organization. / Its purpose is to encourage the people in the community to take advantage of the facilities available at the clinic. Toward this end, / efforts are being made to make the clinic a more friendly and pleasant place to visit.

You can help us to reach these goals by asking your students to design posters to (1) be placed on exhibition at the clinic. Approximately two to three dozen posters would be needed. The theme of the posters should be the importance of regular / medical care. Besides being

attractive to look at, these posters would be of educational value to visitors.

We would acknowledge and thank you and your / students for their cooperation at the reception marking the formal opening of this project. The reception will be held on Sunday afternoon, April 5, / at the hospital. This would give you and your students an opportunity to meet officials of city and state government as well as members of the press.

As a further (2) incentive for your students, we have considered making this a contest. We would appoint a panel of judges who would choose three winners on the day of the / reception and present them with prizes. Their selections would be based on the attractiveness of the posters as well as their educational value.

To give you some / ideas for the theme, I am enclosing some of our educational literature. We would be pleased to furnish you with enough copies for all your students. It might / also be helpful to have one of our staff members visit with your students to discuss their ideas, make suggestions, and perhaps show one of our films.

Very truly yours, (3)

APPENDIX E

OPINIONNAIRE USED IN THE STUDY

SHORTHAND OUT-OF-CLASS PRACTICE OPINIONNAIRE

_____ :
Name/Class Number

To make our out-of-class practice experiment in shorthand this quarter as meaningful as possible, please answer all questions as honestly as you can. Your answers will have no bearing on your grade in the class. (The opinionnaires will not be looked at until after your grades have been submitted.) If you have any questions, please ask for clarification.

1. Please indicate which of the out-of-class practice methods you used during Part I of the experiment.
   ___Reading and self-dictation from text
   ___Reading only
   ___Spot-writing from taped-dictation
   ___Spot-writing from self-dictation

2. Check the following statement which most closely describes your attitude toward the method of doing your out-of-class practice during Part I of the experiment.
   ___Like extremely well
   ___Like
   ___Mildly dislike
   ___Strongly dislike
   ___Indifferent

3. During Part I of the experiment, did you study shorthand outside of class in any way other than the method to which you were assigned?
   ___Yes
   ___No

4. If you did other than assigned study, approximately how much time did you spend on any/all other methods during Part I of the experiment?
___Dictation from tapes
___Minutes per assignment or
___Minutes per week
___Dictation from records
___Minutes per assignment or
___Minutes per week
___Dictation by a person
___Minutes per assignment or
___Minutes per week
___Extra reading of shorthand
___Minutes per assignment or
___Minutes per week
___Other (Please specify what you did below.)

5. For how many weeks did you do extra study during Part I?
___Weeks

6. Check the statement which most closely shows the amount of time spent doing your shorthand out-of-class practice during Part I of the experiment as compared with what you did for your shorthand classes prior to this quarter.
___Considerably more time
___Some more time
___About the same amount of time
___Some less time
___Much less time

7. Check the statement which most closely describes your evaluation of the contribution your out-of-class practice made toward the shorthand skill you attained during Part I of the experiment.
___Method used for doing out-of-class practice contributed greatly toward your skill.
___Method used for doing out-of-class practice contributed very little toward your skill.
___Method used for doing out-of-class practice made no difference toward your skill.

8. What did you <u>like most</u> about the shorthand out-of-class practice method you used during Part I of the experiment?

9. What did you <u>like least</u> about the shorthand out-of-class practice method you used during Part I of the experiment?

10. Please indicate which of the out-of-class practice methods you used during Part II of the experiment.
___Reading and self-dictation from text
___Reading only
___Spot-writing from taped-dictation
___Spot-writing from self-dictation

11. Check the following statement which most closely describes your attitude toward the method of doing your out-of-class practice during Part II of the experiment.
___Like extremely well
___Like
___Mildly dislike
___Strongly dislike
___Indifferent

12. During Part II of the experiment, did you study shorthand outside of class in any way other than the method to which you were assigned?
___Yes
___No

13. If you did other than assigned study, approximately how much time did you spend on any/all other methods during Part II of the experiment?
___Dictation from tapes
___Minutes per assignment or
___Minutes per week
___Dictation from records
___Minutes per assignment or
___Minutes per week
___Dictation by a person
___Minutes per assignment or
___Minutes per week
___Extra reading of shorthand
___Minutes per assignment or
___Minutes per week
___Other (Please specify what you did below.)

14. For how many weeks did you do extra study during Part II?
___Weeks

15. Check the statement which most closely shows the amount of time spent doing your shorthand out-of-class practice during Part II of the experiment as compared with what you did for your shorthand classes prior to this quarter.
___Considerably more time
___Some more time
___About the same amount of time
___Some less time
___Much less time

16. Check the statement which most closely describes your evaluation of the contribution your out-of-class practice made toward the shorthand skill you attained during Part II of the experiment.
___Method used for doing out-of-class practice contributed greatly toward your skill.
___Method used for doing out-of-class practice contributed very little toward your skill.
___Method used for doing out-of-class practice made no difference toward your skill.

17. What did you <u>like most</u> about the shorthand out-of-class practice method you used during Part II of the experiment?

18. What did you <u>like least</u> about the shorthand out-of-class practice method you used during Part II of the experiment?

19. In terms of your ability and your past experience with shorthand, check the statement which most closely describes your evaluation of your progress this quarter.
___Your progress was greater than your expectations. (You attained greater skill than you realistically expected to attain.)
___Your progress was in keeping with your expectations. (You attained as much skill as you realistically expected to attain.)
___Your progress was less than your expectations. (You attained less skill than you realistically expected to attain.)

20. Check the statement which most closely describes the method which you would prefer to use for your out-of-class practice.
___Reading and self-dictation from text
___Reading only
___Spot-writing from taped-dictation
___Spot-writing from self-dictation
___Other (specify)

21. Check the statement which describes the method of doing out-of-class practice through which you think you would gain the greatest amount of skill. (This has nothing to do with the manner you were required to use nor the one that you prefer--only the one through which you think you could make the most progress.)
___Reading and self-dictation from text
___Reading only
___Spot-writing from taped-dictation
___Spot-writing from self-dictation

22. Check the statement which most closely describes the method in which you usually timed your out-of-class practice.
___Exact time was kept and recorded.
___Approximations of time studied were recorded immediately upon completion of study.
___Approximations of time studied were recorded later, (several hours after the study was completed).

23. Check the statement which most closely describes your attitude toward keeping a record of time studied.
___Like extremely well
___Like
___Mildly dislike
___Strongly dislike
___Indifferent

24. Check the statement which most closely describes your attitude toward doing shorthand out-of-class practice, (in general and not just this quarter).
___Like extremely well
___Like
___Mildly dislike
___Strongly dislike
___Indifferent

25. Comments: