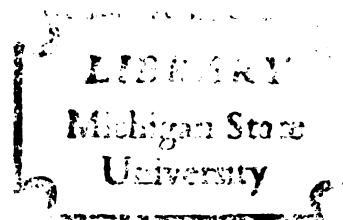


AN ANALYSIS OF THE NEED FOR AND
USE OF SHORTHAND BY SECRETARIES
IN LARGE BUSINESSES AS INDICATED BY
SECRETARIES, MANAGERS, AND
PERSONNEL DIRECTORS

Dissertation for the Degree of Ph. D.
MICHIGAN STATE UNIVERSITY
SAMUEL MAURICE SCAMMON
1974



This is to certify that the

thesis entitled

AN ANALYSIS OF THE NEED FOR AND USE OF SHORTHAND BY
SECRETARIES IN LARGE BUSINESSES AS INDICATED
BY SECRETARIES, MANAGERS, AND PERSONNEL DIRECTORS

presented by

Samuel Maurice Scammon

has been accepted towards fulfillment
of the requirements for

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Major professor

Helen H. Green

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ABSTRACT

AN ANALYSIS OF THE NEED FOR AND USE OF SHORTHAND BY SECRETARIES IN LARGE BUSINESSES AS INDICATED BY SECRETARIES, MANAGERS, AND PERSONNEL DIRECTORS

By

Samuel Maurice Scammon

Statement of the Problem

The problem was to determine if secretaries employed by large businesses need and use the skill of manual shorthand to perform their secretarial duties.

Methods and Procedures

The Million Dollar Directory, 1972, was used to locate 117 large businesses which were stratified by six Standard Industrial Classifications (SICs): Manufacturing Industries; Transportation, Communication, and other Public Utilities; Wholesale Trade; Retail Trade; Finance, Insurance, and Real Estate; and Services. All firms were headquartered in Detroit, Highland Park, and Hamtramck, Michigan. A population of 2953 secretaries was identified in the 117 large businesses and was stratified into two classifications: *top management* and *other management* secretaries.

Personal interviews were held with 72 secretaries who were randomly selected from the population, 72 managers to whom the 72 secretaries in the sample reported, and 40 personnel directors who represented the large businesses from which the secretaries were selected. Interview guides, constructed by the investigator, were used during all interviews.

Nine hypotheses were tested for significance by using the statistical techniques of two-way and one-way analysis of variance, chi-square analysis, and Pearson product-moment and Spearman's rank difference correlation.

Summary of Findings

(1) Shorthand was used by 76.4 percent of the secretaries.

(2) Both symbol and alphabet shorthand systems were used by secretaries. Of 55 secretaries who used shorthand, 98.2 percent used symbol shorthand. The Gregg shorthand system was used by 96.3 percent of those who used symbol shorthand.

(3) There was no significant difference at the .05 level in the degrees of manual shorthand proficiency needed by secretaries as perceived by secretaries who worked for *top management* and the degrees of manual shorthand proficiency needed by secretaries as perceived by secretaries who worked for *other management*.

(4) There was a significant difference at the .05 level in the degrees of manual shorthand proficiency needed by secretaries as perceived by secretaries who worked for large businesses classified within any one of the SICs of business when compared to the degrees of manual shorthand proficiency needed by secretaries as perceived by secretaries who worked for large businesses within any one of the other SICs of business. Scheffé post hoc analysis suggested that secretaries employed by large businesses in the Wholesale Trade SIC perceived the levels of manual shorthand proficiency needed by secretaries to be significantly different from the levels of manual shorthand proficiency needed by secretaries as perceived by secretaries in the other SICs of business.

(5) There was no significant difference at the .05 level in the minimum manual shorthand speeds required of secretaries at the time they were hired as indicated by personnel directors who represented large businesses within any one of the six SICs of business and the minimum manual shorthand speeds required of secretaries as indicated by personnel directors who represented large businesses within any of the other SICs of business.

(6) There was no significant relationship at the .05 level between the maximum manual shorthand speeds which secretaries perceived were needed on the job and the minimum manual shorthand speeds which personnel directors indicated were required of secretaries at the time they were hired for secretarial positions.

(7) A grand mean indicated that secretaries perceived shorthand speeds of 60 up to 80 words per minute to be needed on the job.

(8) Of 55 secretaries who used shorthand on the job, an overall mean indicated that shorthand speeds of 80 up to 100 words per minute were equal to dictation rates which they encountered.

(9) A weighted grand mean estimated for the population of 2953 secretaries indicated that secretaries needed shorthand speeds of 60 up to 80 words per minute to match dictation rates on the job.

(10) A grand mean indicated that shorthand speeds of 60 up to 80 words per minute were required of secretaries by large businesses as indicated by personnel directors.

(11) The mode of the distribution of shorthand speed ranges which personnel directors indicated were required of secretaries was 80 up to 100 words per minute with 44 or 60.1 percent of the personnel directors indicating this speed range.

(12) Six or 8.3 percent of the personnel directors indicated that shorthand was not required of secretaries.

(13) There was a significant relationship at the .05 level between minimum shorthand speeds required of secretaries at the time they were hired as indicated by secretaries and maximum shorthand speeds which secretaries perceived were essential for their secretarial positions.

(14) There were significant positive relationships at the .05 level between: [a] methods which managers practiced and methods which they

preferred to practice, [b] methods which managers practiced and methods secretaries preferred managers to practice, and [c] methods managers indicated they preferred to practice and methods secretaries indicated they preferred managers to practice when replying to correspondence.

(15) Of 72 secretaries, 44 percent said managers "frequently" dictated to them, 19.4 percent said "sometimes," and 12.5 percent said "rarely," while they recorded the dictation by writing manual shorthand.

(16) Of 72 managers, 41.7 percent said they "frequently" dictated to secretaries, 23.6 percent said "sometimes," and 11.1 percent said "rarely," while the secretaries recorded the dictation by writing manual shorthand.

(17) Fifty or 69.4 percent of the secretaries indicated a preference for recording dictation from managers by writing manual shorthand as a method of replying to correspondence.

(18) Fifty-two or 72.2 percent of the managers indicated a preference for dictating to secretaries who recorded dictation by writing manual shorthand as a method of replying to correspondence.

(19) Of 72 managers, 33.3 percent said they would hire while 66.7 percent said they would not hire a secretary who had no shorthand proficiency.

Conclusions

(1) Shorthand should be retained in the secretarial-training curriculum.

(2) Candidates for secretarial positions in large businesses who attain shorthand speeds in the speed range of 80 up to 100 words per minute should qualify on the basis of speed attainment for these positions.

(3) Shorthand speeds in excess of 120 words per minute are not essential for the majority of secretaries in large businesses.

(4) Technological advancements such as dictating/transcribing machines have not displaced the need for manual shorthand by secretaries.

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By
Samuel Maurice Scammon

A DISSERTATION

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for the degree of

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College of Education

1974

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1974

DEDICATED

with thankfulness and love to my parents

Gerald and Mary Scammon

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CHAPTER I
BACKGROUND OF THE STUDY

I. INTRODUCTION

In a word-association exercise, it might be expected that the stimulus of the word "secretary" would elicit the word "shorthand" as one of the responses. In a constantly changing business environment, however, should shorthand be associated with the modern-day secretary? One of the motivating forces for this investigation, which deals with the need for and use of shorthand by secretaries, evolved from current literature which pertained to training personnel for vocations with projected demand and which advocated on-going assessment of curriculum inputs that are germane to career paths.

The importance of relevance in office education was recognized and supported by Congress with the passage of the Vocational Act of 1963 (P.L. 88-210) and the Vocational Amendments of 1968 (P.L. 90-576). This Act and its amendments were designed to improve and extend vocational education so that all persons would have vocational training or retraining opportunities consistent with the nation's manpower and employment needs and to assure flexibility in training programs to keep them up to date.

A recent survey by the U. S. Department of Labor revealed that of 232 specific occupations, the greatest demand was for secretaries and stenographers with a projected annual need of 237,000 throughout the 1970s.¹

¹"Where the Jobs Will be in the 70s," U. S. News & World Report, LXXIII, (September 6, 1971), pp. 68-69.

With the advent of dictating/transcribing machines, which have been vastly improved to provide greater fidelity of voice reproduction, the setting of today's office may feature extensive use of automated equipment. More recently, word-processing centers have been credited with significantly reducing the turnaround time from word originator to finished document. Perhaps the need for shorthand by secretaries has diminished to the extent that economy-conscious management is concerned with spiraling office costs and has exchanged the traditional dictator-secretary team, which takes the time of two people to originate correspondence, for the convenience of such technological devices as dictating/transcribing machines and word-processing systems.

It is possible that the customary emphasis on the development of highly skilled shorthand writers is becoming obsolete as more secretaries, fortified with expertise in language skills, have been delegated the responsibility of composing much of the office correspondence.

Perhaps the requirement for shorthand proficiency of secretaries is merely a screening device retained by personnel department policy as a secretary-selection scheme. Only those who have survived the rigors of a shorthand-training program and who have demonstrated, thereby, their above-average language skills are chosen for secretarial employment, but their selection is not predicated on the basis that shorthand is a needed prerequisite for secretaries to perform their daily secretarial duties. If the knowledge of shorthand is being used essentially as a personnel-selection device by employers, this criterion is an expensive selection system for the aspirant to a secretarial position in terms of time and money spent to acquire this knowledge. If shorthand is not needed by secretaries on the job, perhaps perfected language skills could be

acquired more efficiently by those who desire to become secretaries if they took courses designed principally to strengthen language skills rather than courses designed principally to teach a shorthand system.

Traditionally, though, manual shorthand has been an integral component of a secretarial curriculum. However, keeping in mind the inevitable changing needs and practices of business and being cognizant of the clear mandate to business educators to keep abreast of these changes, this researcher deemed it expedient to probe again the need for shorthand as perceived by secretaries, managers, and personnel directors.

Perhaps there still is an intense need for the use of shorthand by secretaries in order for them to perform adequately on the job, and perhaps employers are willing to pay wage premiums based on shorthand proficiency. These economic rewards might provide incentives for students to acquire high-level shorthand proficiency.

The final evaluation of the importance of shorthand in the secretarial curriculum should surely be based on the need for this skill in order for the secretary to succeed on the job. If the need for shorthand has declined greatly or has become nonexistent, the paramount position which shorthand has customarily occupied in the secretarial-training program is no longer justified.

II. STATEMENT OF THE PROBLEM

The problem of this study was to determine if secretaries employed by large businesses need and use shorthand to perform their secretarial duties.

Questions Related to the Problem

As facets and derivatives of the principal problem of this study, the following questions posed subproblems:

What are the differences in the degrees of manual shorthand proficiency needed by secretaries as perceived by secretaries who work for *top managers* and the degrees of manual shorthand proficiency needed by secretaries as perceived by secretaries who work for *other managers*?

What are the differences by Standard Industrial Classification of business in the degrees of manual shorthand proficiency needed by secretaries as perceived by secretaries who work for large businesses within these classifications?

What are the differences by Standard Industrial Classification of business in the degrees of manual shorthand proficiency required of secretaries who work for large businesses within these classifications as indicated by personnel directors?

What are the differences between the degrees of manual shorthand proficiency required of secretaries at the time that they are hired as indicated by personnel directors and the degrees of manual shorthand proficiency which secretaries perceived were needed on the job?

What are the differences between the levels of manual shorthand proficiency which secretaries indicated were required of them at the time that they were hired and the levels of manual shorthand proficiency which secretaries perceived that they needed on the job?

What systems of manual shorthand are utilized by secretaries?

What methods do managers utilize to reply to correspondence and what are the correlations between: (1) the methods managers utilize and the methods they would prefer to utilize, (2) the methods managers utilize and the methods their secretaries would prefer that managers would utilize, and (3) the methods managers would prefer to utilize and the methods their secretaries would prefer that the managers would utilize?

Are there differences in starting salaries for secretaries based on manual shorthand proficiency which is in excess of the minimum manual shorthand proficiency requirement?

Solutions to these questions were sought by seeking responses from secretaries, managers, and personnel directors employed by large businesses in the Michigan cities of Detroit, Highland Park, and Hamtramck.

III. PURPOSE OF THE STUDY

The purpose of this study was to provide information which could lead to improved secretarial-training programs by ascertaining the need for and use of shorthand by secretaries so that business education teachers and guidance counselors could be provided with information which would enable more effective guidance to those individuals who are thinking about choosing or changing careers in the next few years.

Acquisition of high-level shorthand proficiency ordinarily takes from one to two years of study. In the curriculum of today, however, there are many demands on a secretarial student's time for courses, other than shorthand, which have been designed to train students to adequately meet the demands of secretarial positions. It was the contention of this investigator that emphasis on the development of a high degree of shorthand expertise should be de-emphasized if high shorthand speeds are not needed by a secretary. Furthermore, shorthand should be dropped from the secretarial curriculum if shorthand is not needed or used by secretaries.

IV. DELIMITATIONS OF THE STUDY

Only large businesses with a net asset value of \$1 million, minimum annual sales of \$5 million, a minimum of 250 employees, and headquartered

in the Michigan cities of Detroit, Highland Park, and Hamtramck were included in this study.

Only large businesses in the six Standard Industrial Classifications of Manufacturing Industries; Transportation, Communication, and other Public Utilities; Wholesale Trade; Retail Trade; Finance, Insurance, and Real Estate; and Services were included in this study.

Large businesses not included in this study were foreign corporations; professional and consulting organizations, such as hospitals and engineering services; credit agencies; and some types of financial and insurance institutions since these types of businesses were generally not included in the Million Dollar Directory, 1972.

This study was not an effort to compile a list of the duties and responsibilities of secretaries.

No effort was made in this study to rate successful versus unsuccessful secretaries nor did the study seek to determine the job satisfaction of secretaries based on their use or nonuse of shorthand.

Only two stratifications of management were used for this study: *top management* and *other management*. *Other management* was not further stratified because management classifications, below the level of top management, vary considerably among companies and because it was thought that management at lower echelons, such as first-line management, might not have personal secretaries assigned to them.

V. LIMITATIONS OF THE STUDY

There is a lack of agreement, both in the literature and in company practice, as to the definition and classification of both secretaries and management. Therefore, classification of individuals interviewed in a

particular large business may have varied considerably from the classifications these individuals might have had in another large business in this study.

Bias may have been introduced into the findings by misinterpretation or misunderstanding on the part of either the interviewer or the respondent during the personal interview process.

Error may have been introduced into the findings through weaknesses in the construction of the interview guides.

The possibility exists, although it was assumed remote, that all large businesses in the Michigan cities of Detroit, Highland Park, and Hamtramck may not have been included in the Million Dollar Directory, 1972, which was used as the source document to identify the large businesses included in this study.

Although confidential treatment of the responses received from those interviewed was assured and emphasized by the investigator at the start of the personal interviews, and it was assumed that all responses were accurate and reliable, dishonest or untruthful answers may have distorted the findings.

The variability between shorthand speeds needed on the job as perceived by secretaries versus measured (clocked) shorthand dictation speeds remains unknown in this study. Perceived shorthand speeds needed were used in this study because of the impracticalities of measuring actual shorthand dictation speeds as experienced by previous researchers. It was felt, also, that if companies did permit observation and measurement of the dictation process by the dictator-secretary team, the situation would be unnatural and contrived.

VI. DEFINITION OF TERMS

The following terms are used in this study and are defined to provide a common base for understanding.

Bias is "the intrusion of unwanted or unplanned interviewer influence in the interviewer process."²

A *dictating-transcribing machine* (also known as a voice recorder) is a machine designed to record dictation which can subsequently be played back to a transcriptionist who types that which has been dictated.

Proficiency is an indication of manual shorthand skill or competency. Zero proficiency would indicate no manual shorthand skill or ability.

A *large business* is a business with a net asset value of \$1 million,³ a minimum annual sales of \$5 million, and a minimum of 250 employees.

Machine shorthand is "the system of writing shorthand notes with the aid of a keyboard device which types the notes on a tape."⁴ *Stenotype* and *Stenograph* are two common trade names of these mechanical devices.

Manual shorthand (also known as pen shorthand) may be either symbol or alphabet shorthand.

Symbol shorthand is "a method of rapid handwriting using extremely simple strokes in place of letters often with other abbreviating devices."⁵ Examples of symbol shorthand systems include the methods of *Gregg*, *Pitman*, and *Thomas*.

²Robert L. Kahn and Charles F. Cannell, The Dynamics of Interviewing, (New York: John Wiley & Sons, 1957), p. 59.

³Million Dollar Directory, 1972 (New York: Dun & Bradstreet, Inc., 1971), p. iv.

⁴Herbert A. Tonne, Principles of Business Education (New York: Gregg Publishing Division, McGraw-Hill Book Company, Inc., 1961), p. 393.

⁵The American College Dictionary (New York: Random House, 1955), p. 1120.

Alphabet shorthand is a shorthand system in which the a b c alphabet is used with the shortening effected by arbitrary contractions and a few extra characters are obtained by modification of existing letters. Alphabet shorthand, like symbol shorthand, gives a phonetic representation of the spoken word. Examples of alphabet shorthand systems include the methods of *Forkner*, *Speedwriting*, and *Stenoscript ABC*.

The *Standard Industrial Classification (SIC)* is a system of classifying businesses by type of activity in which they are engaged. Businesses are classified according to a numbering system to facilitate collecting, tabulating, presenting, and analyzing data relating to these businesses.

The purpose of the SIC classification is to promote uniformity and comparability in the presentation of statistical data collected by various agencies of the United States Government, state agencies, trade associations, and private research organizations.⁶

The *managers* of a business are those individuals who coordinate and integrate the activities of the nonmanagerial employees. Managers have the responsibility of getting things done by and through others. Their role is supervisory in nature. The functions of management include creating, planning, organizing, motivating, communicating, and controlling.⁷

Top management (also known as administrative management) refers to those managers responsible for establishing top-level or basic policies in an organization. This level of management includes the president and the vice-presidents of a business.

⁶The Directory of Michigan Manufacturers (Detroit: Manufacturer Publishing Company, 1971), p. 399.

⁷Herbert G. Hicks and C. Ray Gullett, Modern Business Management (New York: McGraw-Hill Book Company, 1974), p. 79.

Other management (middle and first-line management) includes all management personnel of large businesses with the exception of the top management.

A *secretary* is any employee who was classified as a *secretary* by the personnel departments of the large businesses in this study.

The National Secretaries Association defined a secretary as "an assistant to an executive, possessing mastery of office skills and ability to assume responsibility without direct supervision, who displays initiative, exercises judgment, and makes decisions within the scope of her authority."⁸ In the judgment of this investigator, this definition by the NSA typifies an "ideal" secretary, but does not describe in practice all who are classified as "secretaries."

VII. RESEARCH HYPOTHESES

The following hypotheses, stated as research hypotheses, were tested for this study.

Hypothesis 1: There will be a difference in the degrees of manual shorthand proficiency needed by secretaries as perceived by secretaries who work for *top management* and the degrees of manual shorthand proficiency needed by secretaries as perceived by secretaries who work for *other management* levels.

Hypothesis 2: There will be a difference in the degrees of manual shorthand proficiency needed by secretaries as perceived by secretaries who are employed by large businesses classified within any one of the six

⁸National Secretaries Association cited by J. Marshall Hanna, Estelle L. Popham, and Esther Kihn Beamer, Secretarial Procedures and Administration (5th ed; Cincinnati: South-Western Publishing Company, 1968), p. 3.

Standard Industrial Classifications of business used in this study when compared to the degrees of manual shorthand proficiency needed by secretaries as perceived by secretaries employed by large businesses classified within any one of the five remaining Standard Industrial Classifications of business used in this study.

Hypothesis 3: There will be a difference in the degrees of manual shorthand proficiency required of secretaries as indicated by personnel directors representing large businesses classified within any one of the six Standard Industrial Classifications of business used in this study when compared to the degrees of manual shorthand proficiency required of secretaries as indicated by personnel directors representing large businesses in any one of the five remaining Standard Industrial Classifications of business used in this study.

Hypothesis 4: There will be a positive relationship between the degrees of manual shorthand proficiency needed by secretaries as perceived by secretaries on the job and the degrees of manual shorthand proficiency required of secretaries at the time they were hired as indicated by personnel directors.

Hypothesis 5: There will be a positive relationship between the degrees of manual shorthand proficiency required of secretaries at the time that they were hired by their employers as indicated by secretaries and the degrees of manual shorthand proficiency needed by secretaries on the job as perceived by secretaries.

Hypothesis 6: There will be a difference in the number of secretaries who use a symbol shorthand system and the number of secretaries who use an alphabet shorthand system in their secretarial positions.

Hypothesis 7: There will be a positive relationship between the methods practiced by managers to reply to their correspondence and the methods preferred by managers to reply to their correspondence.

Hypothesis 8: There will be a positive relationship between the methods which managers practice to reply to their correspondence and the methods which their secretaries would prefer that the managers would practice to reply to their correspondence.

Hypothesis 9: There will be a positive relationship between the methods which managers would prefer to practice when replying to their correspondence and the methods which their secretaries would prefer that the managers would practice when replying to their correspondence.

VIII. PROCEDURES

The Million Dollar Directory, 1972, a publication of the well-known research organization of Dun & Bradstreet, Inc., was used as the source document to identify the large businesses included in this investigation.

A large business was identified as one with a net asset value of \$1 million, a minimum annual sales of \$5 million, and a minimum of 250 employees. One hundred forty-six businesses headquartered in the Michigan cities of Detroit, Highland Park, and Hamtramck were classified as large businesses using these restrictions. Of these 146 large businesses, 117 remained in the study, and these businesses were stratified into one of the following Standard Industrial Classifications by SIC number: Manufacturing Industries; Transportation, Communication, and other Public Utilities; Wholesale Trade; Retail Trade; Finance, Insurance, and Real Estate; and Services.

The management of each of the 117 large businesses was stratified into two levels of management: *top management* and *other management*. Secretaries employed by the 117 large businesses, as identified by the personnel departments of these businesses, were stratified into two categories: *top management secretaries* and *other management secretaries*.

Selection of the Sample of Secretaries

Six *top management secretaries* and six *other management secretaries* were randomly selected from the total secretaries employed by the large businesses in each of the six Standard Industrial Classifications. For example: Of the 1301 secretaries employed by large businesses in the Manufacturing Industries SIC, 6 secretaries were randomly selected from the 262 secretaries classified as *top management secretaries* and 6 secretaries were randomly selected from the 1029 secretaries classified as *other management secretaries*.

A similar random selection process was employed for each of the remaining Standard Industrial Classifications used in this study until a sample of 72 secretaries was drawn from the total population of 2953 secretaries.

Personal Interviews

The normative-survey method, using personal interviews as the data-collecting technique, was selected for this study. Data were collected from a total of 184 personal interviews.

These interviews were held with the 72 randomly selected secretaries and with the 72 managers to whom these secretaries reported. Personal interviews were also held with a minimum of five personnel directors in each of the six Standard Industrial Classifications for a total of 40 interviews with personnel directors.

Interview Instruments

Three interview instruments, which are referred to as the *Interview Guide - Secretaries* (IG-S), the *Interview Guide - Managers* (IG-M), and the *Interview Guide - Personnel Directors* (IG-PD), were constructed and used as guides during the interviews. These guides were developed to promote standardization and objectivity in the interviews.

Analysis of the Data

Two-way analysis of variance was used to determine if there was a difference in the need for shorthand proficiency as perceived by secretaries who worked for top management and the need for manual shorthand proficiency as perceived by the secretaries who worked for other levels of management. This analysis of variance test also statistically revealed any differences in the need for manual shorthand proficiency as perceived by the secretaries who worked for the different Standard Industrial Classifications of business.

One-way analysis of variance was used to test differences in the need for manual shorthand proficiency required of secretaries by personnel directors representing the businesses in the six Standard Industrial Classifications of business.

A Pearson product-moment correlation was calculated to assess the relationship between the need for manual shorthand as perceived by secretaries and the need for manual shorthand required of secretaries by personnel directors at the time secretaries were hired.

A Pearson product-moment correlation was calculated to determine the relationship between the need for manual shorthand proficiency required

of secretaries at the time they were hired by their employers and the need for manual shorthand proficiency required on the job as perceived by secretaries.

Chi-square analysis was utilized to determine whether there was a difference in the number of secretaries who used symbol shorthand and the number of secretaries who used alphabet shorthand.

Spearman's rank-difference correlation coefficients were calculated to determine relationships between preferences and practices of managers and of secretaries when replying to correspondence.

A broader and more detailed description of the methods and procedures followed to collect and analyze the data for this study is presented in Chapter III.

IX. ORGANIZATION OF THE STUDY

Chapter I introduces the study, states the problem and presents questions related to the problem, gives the purpose of the study, indicates the delimitations and limitations, defines terms used in this research project, indicates the research hypotheses to be tested, and gives a brief overview of the procedures.

Chapter II presents a review of related research. The format of the footnotes varies in Chapter II from the format of the footnotes in the remaining chapters of this study. The standard practice of placing at the bottom of each page all of the footnotes for citations on that page is followed in Chapters I, III, IV, and V of this study. However, because of the numerous references to be found in Chapter II, a modified references-cited format of footnoting is followed to provide for a clear communication of the findings of the related research.

In his style manual for thesis writing, Campbell stated the following in Chapter 3 - "Footnote and Bibliographical References":

Consistency in form is a virtue to the extent that it achieves the purposes stated above [1. To amplify the ideas of information beyond the point deemed sufficient for the text. 2. To establish the validity of evidence. 3. To acknowledge indebtedness.] in a way that communicates clearly and briefly to the anticipated reading audience. No single form can satisfy all demands. What follows, therefore, reflects a variety of practices, with some apparent advantages and disadvantages of alternative choices. . . .⁹

Chapter III describes in detail the methods and procedures followed to organize the research study, collect the data, and indicates the manner by which the data were processed.

Chapter IV contains a two-part analysis of the data.

Chapter V presents the summary of the study, conclusions drawn, and recommendations based upon the findings of this research.

⁹William Giles Campbell, Form and Style in Thesis Writing (3d. ed; Boston: Houghton Mifflin Company, 1969), p. 23.

CHAPTER II

FINDINGS OF RELATED RESEARCH

I. INTRODUCTION

Chapter II contains findings from 45 research projects which were deemed related to this research. Of the 45 studies, 13 were completed on the doctoral level, 26 were completed to fulfill requirements for masters' degrees, and 6 were independent research studies.

All studies referred to in this review are dated 1960 or later since it was felt that studies dated prior to 1960 would lack sufficient relevancy to be compared with this study.

Most of the studies, which were either typed or microfilmed copies, were made available to the reviewer through the facilities of the Inter-library Loan Division of the Michigan State University Libraries.

To aid the reader in making comparisons of the findings of the various researchers which pertained to similar areas of investigative interest, many of these findings were organized in tabular form in Chapter II.

A modified references-cited format of footnotes, using the author-and-number system, is used in Chapter II to provide for a clear communication of the findings of the 45 studies which are reviewed for this chapter. An alphabetical listing of the research references, which have been numbered sequentially, is shown on pages 52 through 55 of this chapter. Items in this enumerated listing, under the heading of References Cited, are referred to in the text and in the tables by use of the identifying numbers which

are enclosed by parentheses and which are located adjacent to the names of the researchers. Digests of the 45 research studies referred to in this chapter are contained in Appendix E.

Although standardization of research questions was not necessarily expected, the findings shown in the tables in this chapter are limited by the lack of standardization of questions in the survey instruments of the various researchers. Dissimilarity in methods of reporting the findings also handicapped the interpretation of the studies. This lack of standardization in the survey instruments and the dissimilarity in reporting findings may have caused distortions in the figures reported in the tables included in Chapter II.

Four examples of variation in the related research studies follow:

(1) Some researchers seemed to have equated the responses of "seldom, if ever" with "never."

(2) There was considerable lack of uniformity in reporting shorthand speed requirements in words-per-minute groupings.

(3) One researcher, who specifically asked that "only secretaries who use shorthand on the job" be asked to complete the questionnaire, found that 100 percent of the secretaries said that they used shorthand on the job and concluded that shorthand was used by 100 percent of the secretaries in that survey. Without the researcher's specific directive that "only secretaries who use shorthand on the job" be asked to complete the questionnaires, might the findings regarding the use of shorthand by secretaries have been different in that survey?

(4) Some researchers reported "current use of shorthand on the job" percentages based on the total number of respondents to the study rather than basing the percentages on the number of those respondents who reported that they were currently working at the time of their responses.

II. NAME OF SHORTHAND SYSTEM STUDIED OR UTILIZED ON THE JOB

Most researchers did not indicate the name of the manual shorthand system which had been studied by former students nor did other researchers indicate the name of the manual shorthand system used on the job by the respondents. This information would have been of particular interest to this researcher.

However, Fujii (13) reported in her study of secretaries in Honolulu, Hawaii that when 83 secretaries were asked to indicate the system of shorthand that they used on the job, 91.6 percent indicated Gregg, 3.6 percent indicated Pitman, 2.4 percent indicated ABC or Briefhand, while the remaining 2.4 percent indicated "other."

III. USE OF SHORTHAND BY SECRETARIES AS INDICATED BY SECRETARIES

Research studies by Cook and Shapiro (10); Fujii (13); Justis (22); Lanham, Lanham, Herschelmann, and Cook (27); Levine (29); Lloyd (30); McKee (34); Paddock (36); Wagoner (41); and Webster (44) contained findings pertaining to the use of shorthand by secretaries as indicated by respondents who were secretaries.

Justis (22) and Fujii (13) reported that 100 percent of the secretaries who responded to their studies used shorthand on the job, while Lanham, Lanham, Herschelmann, and Cook (27) reported a 60 percent utilization of shorthand by secretaries and stenographers in the 16 to 24 year-old group, which was the lowest percentage of utilization reported in the ten studies.

Table 2:1 indicates the findings of these ten research studies, which were listed in chronological order by date of study in an effort to discern trends regarding the use or nonuse of shorthand by secretaries over the years of these studies.

TABLE 2:1
USE OF SHORTHAND BY SECRETARIES AS INDICATED BY SECRETARIES
AS REVEALED BY TEN RESEARCH STUDIES

(arranged in chronological order by date of study)

Name of Researcher	Institution Granting Degree & Date of Study	Geographical Focal Point of Research	Number of Respondents	Respondents Who Used Shorthand	Findings
Paddock (36)	Indiana U. (1967)	State of Indiana	50	45	90.0% high-level secretaries used shorthand to take dictation
Wagoner (41)	U. of Iowa (1967)	State of Indiana	145	133	91.7% secretaries used shorthand for dictation
Cook and Shapiro (10)	Independent Study (1968)	Detroit, MI	149	111	74.5% secretaries said shorthand was necessary to function effectively
McKee (34)	U. of Nebraska (1968)	U.S.-Canada Seventh-Day Adventist Church Offices	285	194	68.0% secretaries used shorthand for dictation and transcription
Webster (44)	Utah State U. (1968)	Cedar City H.S. Cedar City, UT	26	19	73.1% graduates now employed as secretaries rated shorthand as valuable to very valuable in their jobs
Justis (22)	Brigham Young U. (1970)	Brigham Young U.	64	64	100% of secretaries used shorthand on the job

TABLE 2:1 (continued)

Name of Researcher	Institution Granting Degree & Date of Study	Geographical Point of Research	Number of Respondents	Respondents Who Used Shorthand	Findings
Lloyd (30)	Brigham Young U. (1970)	Utah	168	157	93.5% secretaries and stenographers indicated use of shorthand
Fujii (13)	U. of Montana (1971)	Honolulu, HI	83	83*	100% of secretaries used shorthand on the job
Levine (29)	Michigan State (1972)	Washington, DC	196	190	96.9% secretaries used shorthand for dictation and transcription
Lanham Lanham Herschelmann & Cook (27)	Independent Study (1972)	State U. of New York (Albany) U. of California at Los Angeles U. of Georgia U. of Minnesota Wayne State U.	285	172	60.4% secretaries and stenographers in 16 to 24 year-old age group indicated task "types dictation from shorthand"
TOTAL			1451	1168	80.5% secretaries used shorthand

*Fujii requested personnel directors to select a secretary who "takes dictation using manual (written) shorthand" to respond to the questionnaires.

Note: Complete citations of the sources of the findings contained in this and in the other tables found in Chapter 11 may be located by referring to the References Cited portion of this chapter (pages 52-55) where references are arranged alphabetically by authors' names and with identifying numbers, shown in parentheses, which are the same identifying numbers, shown in parentheses, which are next to the names of the researchers shown in the tables.

Of the 1451 respondents who were employed as secretaries, as shown in the totals of Table 2:1, 1168 or 80.5 percent indicated that they used shorthand on the job.

No trend regarding the increased or decreased use of shorthand over the years included by the dates of the ten research studies appeared discernable in Table 2:1.

Two studies revealed findings (not included in a table) regarding the importance of shorthand and the length of time spent in the study of shorthand as indicated by secretaries. Weber (43) found that 83 secretaries, who were members of the National Secretaries Association, rated taking and transcribing shorthand as the single most important fundamental secretarial skill. Hershey (18), in a study of 198 academic secretaries who were employed at Indiana State University, found that 47.0 percent of the secretaries had taken no more than one year of shorthand and that 17.2 percent of the secretaries had taken no courses in shorthand. It was assumed by this investigator that those secretaries who had not taken any courses in shorthand did not use shorthand on the job.

IV. USE OF SHORTHAND BY FORMER STUDENTS WHO HAD STUDIED SHORTHAND AT THE POST HIGH SCHOOL LEVEL AS INDICATED BY FORMER STUDENTS

It is recognized at the outset of this division of the chapter that not all students who study shorthand at the high school or post high school levels intend to become secretaries nor do they intend to use the skill of shorthand for any vocational purpose. However, it was assumed by this researcher that a majority of those students who had studied shorthand from one to two years had intended to acquire this skill for vocational use.

Table 2:2, page 23, indicates the use of shorthand by former students who had studied shorthand at the post high school level as revealed in seven research studies.

TABLE 2:2

USE OF SHORTHAND BY FORMER STUDENTS WHO HAD STUDIED SHORTHAND AT POST HIGH SCHOOL LEVEL
AS REVEALED IN SEVEN STUDIES

(arranged in chronological order by date of study)

Name of Researcher	Institution Granting Degree & Date of Study	Geographical Focal Point of Research	Number of Respondents	Respondents Who Used Shorthand	Use or Nonuse of Shorthand USE% NONUSE%
Powell (37)	U. of North Dakota (1964)	State School of Science Wahpeton, ND	222	150	67.6 32.4
Ashworth (2)	San Diego State College (1965)	Grossmont College El Cajon, CA	68	43	63.2 36.8
Drexler (12)	New York U. (1967)	Two-year colleges New York State	120	91	75.8 24.2
Gray (17)	Brigham Young U. (1968)	Brigham Young U. Provo, UT	151	131	86.8 11.3*
Adams (1)	Indiana U. (1969)	Indiana U. Bloomington, IN	114	97	85.1 14.0**
Battist (5)	Wisconsin State U. Eau Claire (1969)	North Central Technical Institute, Wausau, WI	46	27	58.7 41.3
Geller (14)	Boston U. (1971)	Thomas College Waterville, ME	60	42	70.0 30.0
TOTAL			781	581	74.4% used shorthand

*11.3% responded that shorthand was of "Little or No Use"; 2.0% gave no response to use of shorthand

**No response to question regarding use of shorthand by 1 respondent or .9%

The seven studies shown in Table 2:2 by Adams (1), Ashworth (2), Battist (5), Drexler (12), Geller (14), Gray (17), and Powell (37) were arranged in chronological order by date of study to note any upward or downward trend in the percentage of use of shorthand by the former post high school students. There appears to be an increase in the percentage of use of shorthand from 1964 through 1968, but then there appears to be a decline in the percentage of use of shorthand from 1968 until 1971 as revealed in the findings of the seven research studies shown in Table 2:2.

The lowest percentage of utilization of shorthand by former post high school students was found by Battist (5) in her study of former students of the North Central Technical Institute of Wausau, Wisconsin. Battist (5) found that 58.7 percent of the former students who responded to her study utilized shorthand on the job. The highest utilization of shorthand by former post high school students was reported by Gray (17) in her follow-up study of former Brigham Young University students. Gray (17) found that 86.8 percent of the former students who responded to her study used shorthand on the job.

Of the 781 former post high school level students who responded to the seven studies shown in Table 2:2, 581 or 74.4 percent indicated that they used shorthand on the job.

V. USE OF SHORTHAND BY FORMER HIGH SCHOOL STUDENTS AS INDICATED BY FORMER HIGH SCHOOL STUDENTS IN TEN RESEARCH STUDIES

Table 2:3, pages 25 and 26, shows the vocational use of shorthand by former high school students as indicated by these former students. Findings from ten research studies by Behl (6), Baron (3), Colvin (8), Drexler (12), Kalchoff (23), Kelly (25), Marcellis (32), Statler (39), Vrieze (40), and Webster (44) are shown in Table 2:3.

TABLE 2:3

USE OF SHORTHAND BY FORMER HIGH SCHOOL STUDENTS AS INDICATED BY
FORMER HIGH SCHOOL STUDENTS IN TEN RESEARCH STUDIES

(arranged in chronological order by date of study)

Name of Researcher	Institution Granting Degree & Date of Study	Geographical Focal Point of Research	Number of Respondents	Respondents Who Used Shorthand	Use or Nonuse of Shorthand $\frac{\text{USE}\%}{\text{NONUSE}\%}$
Statler (39)	Catholic U. of America (1960)	St. Vincent Ferrer H.S. New York City, NY	214	95	44.4 35.5*
Kalchoff (23)	Illinois State U. (1962)	Granite City H.S. Granite City, IL	178	109	61.2 38.8
Colvin (8)	Mankato State College (1965)	Steele County, MN	34	23	67.6 32.4
Marcellis (32)	Catholic U. of America (1966)	St. Peter H.S. New Brunswick, NJ	73	42	57.5 42.5**
Drexler (12)	New York U. (1967)	New York City High Schools Upstate New York and Long Island High Schools	135 122	55 46	40.7 59.3 37.7 62.3

*43 respondents or 20.1 percent did not respond to question on vocational use of shorthand

**No response to question regarding use of shorthand from 2.7 percent of respondents who were currently working

TABLE 2:3 (continued)

Name of Researcher	Institution Granting Degree & Date of Study	Geographical Point of Research	Number of Respondents	Respondents Who Used Shorthand	Use or Nonuse of Shorthand USE% NONUSE%
Kelly (25)	Catholic U. of America (1968)	Notre Dame H.S. Moylan, PA	120	111	92.5 7.5
Webster (44)	Utah State U. (1968)	Cedar City H.S. Cedar City, UT	86	37	43.0 57.0*
Behl (6)	Wisconsin State U. Whitewater (1969)	Lake Mills H.S. Lake Mills, WI	69	25	36.2 55.1**
Baron (3)	Wisconsin State U. Whitewater (1970)	Racine High Schools Racine, WI	42	28	67.0 33.0
Vrieze (40)	U. of Wisconsin Eau Claire (1971)	Rice Lake H.S. Rice Lake, WI	82 57	32 38	39.0 61.0*** 66.7 33.3****
TOTAL			1212	641	50.7% used shorthand

*respondents rated one-year shorthand program of "little or no value" for vocational purposes
 **9.0 percent of respondents did not reply to question regarding use of shorthand skill after graduation

***respondents completed one-year shorthand program

****respondents completed two-year shorthand program

The percentage of utilization of shorthand on the job by former students who had studied shorthand at the high school level ranged from a high of 92.5 percent as reported by Kelly (25) to a low of 36.2 percent as reported in the study by Behl (6).

Overall, out of 1212 respondents, 641 or 50.7 percent of the former high school students utilized the skill of shorthand on the job as revealed in the findings of the ten research studies shown in Table 2:3.

VI. USE OF SHORTHAND BY FORMER SHORTHAND STUDENTS, SECRETARIES, AND FEMALE OFFICE WORKERS AS INDICATED BY PERSONNEL DIRECTORS AND SUPERVISORS

Sixteen studies revealed findings pertaining to the use of shorthand by former shorthand students, secretaries, and female office workers as indicated by personnel directors, supervisors, and employers. The findings of these studies have been grouped into five subtopics.

Use of shorthand in office work. Lawrence (28) found in his survey that 60 percent of the female office workers used shorthand on the job. Baron (3) found that 60 percent of the employers who responded to his study said that shorthand was not necessary for employees in the early phases of office work. However, Baron (3) also found that only 33.3 percent of the former high school students who responded felt that shorthand did not apply to their beginning office work.

Firms which did not require shorthand skills of employees. Four studies contained findings pertaining to firms which did not require employees to have shorthand skills or in which the shorthand skills of employees were not utilized. Colvin (8) reported 35.5 percent, Biggers (7) reported 23.7 percent, Fujii (13) reported 17.5 percent, and Wagoner (41) reported 9.0 percent of the firms in their surveys did not require shorthand skills as reported by personnel directors in these firms.

Importance of shorthand for secretarial success when hiring and when promoting secretaries. James (21) reported that accurate dictation and transcription was ranked in first place among technical skills by personnel directors when hiring and when promoting stenographers and secretarial workers.

Cook and Shapiro (10) concluded from their independent study in Detroit that skill in shorthand was necessary to attain success as a secretary.

Shorthand requirements and indicated use of shorthand by secretaries as revealed by personnel directors. Lamb (26) and Scalamogna (38) both reported that shorthand was required of beginning stenographers and of secretaries by 100 percent of the personnel directors who responded to their inquiries regarding this requirement.

Cook and Lanham (9) found from an independent study that employers required shorthand in 96 percent of 4752 projected positions for secretaries and stenographers.

Biggers (7) reported that personnel directors indicated that 81.4 percent of 1102 secretaries used shorthand on the job.

Importance of shorthand for secretaries as indicated by executives. Wagoner (41) found that 95 percent of executives indicated that they expected secretaries to take dictation in shorthand and to transcribe.

Paddock (36) found that 12 percent of the executives who responded to her study did not feel that shorthand was an essential skill for secretaries while 88 percent of the executives thought it was essential.

Table 2:4 shows findings regarding the use of shorthand by former shorthand students, secretaries, and female office workers as indicated by personnel directors, supervisors, and employers.

TABLE 2:4

USE OR NONUSE OF SHORTHAND BY FORMER SHORTHAND STUDENTS, SECRETARIES, AND FEMALE OFFICE WORKERS
AS INDICATED BY PERSONNEL DIRECTORS AND SUPERVISORS IN FINDINGS OF SIXTEEN RESEARCH STUDIES

(arranged in chronological order by date of study)

Name of Researcher	Institution Granting Degree & Date of Study	Geographical Focal Point of Research	Number of Respondents	Findings
Lawrence (28)	Mankato State College (1962)	Minnesota businesses	380	Shorthand was used by 228 or 60.0% of office workers. Of those who had taken shorthand courses in high school only, 50.0% used shorthand; business school or college only, 77.9% used shorthand; high school and college, 80.0% used shorthand.
James (21)	New York U. (1963)	New York City	100	Accurate dictation and transcription (80 to 90 w.p.m.) ranked in first place in technical skills by personnel directors when hiring and when promoting secretaries.
Colvin (8)	Mankato State College (1965)	Steele County, MN	31	64.5% firms employed employees who used manual shorthand while 35.5% of firms did not employ shorthand-trained office workers.
Kanger (24)	Catholic U. of America (1965)	The College of St. Mary, Omaha, NE	40	Employers said 17 or 42.5% beginning secretaries performed duty of "take and transcribe dictation."

TABLE 2:4 (continued)

Name of Researcher	Institution Granting Degree & Date of Study	Geographical Focal Point of Research	Number of Respondents	Findings
Cook and Lanham (9)	Independent Study (1966)	Detroit, MI	572	Employers required shorthand for 96.0% of 4752 projected positions for secretaries and stenographers.
Paddock (36)	Indiana U. (1967)	State of Indiana	50	88.0% of executives felt shorthand was essential skill for secretaries while 12.0% did not feel skill was necessary for secretaries.
Wagoner (41)	U. of Iowa (1967)	State of Indiana	145	95.0% executives expected secretaries to be able to take shorthand dictation and to transcribe.
			145	8.0% secretaries said they did not use shorthand.
			250	9.0% firms had no secretaries.
Cook and Shapiro (10)	Independent Study (1968)	Detroit, MI	326	Skill in shorthand is necessary to attain "success" as a secretary as indicated by 67.4% of supervisors, 74.5% of secretaries, and by 86.7% of other clerical workers.
Kelly (25)	Catholic U. of America	Notre Dame H.S. Moylan, PA	118	Personnel directors said 109 or 92.4% former graduates used shorthand.
Behl (6)	Wisconsin State U. - Whitewater (1969)	Lake Mills H.S. Lake Mills, WN	48	Employers indicated that 11 or 28.0% former shorthand students used shorthand on the job.

TABLE 2:4 (continued)

Name of Researcher	Institution Granting Degree & Date of Study	Geographical Focal Point of Research	Number of Respondents	Findings
Biggers (7)	The Ohio State U. (1969)	Columbus, OH	95	Personnel directors said 81.4% of 1102 secretaries used shorthand, which was a decline in use of shorthand when compared to two previous studies (Welsh and Lower). <u>Shorthand not used in 23 or 23.7% of firms.</u>
Lamb (26)	Indiana U. (1969)	Prominent U.S. Business Firms	55	100% personnel directors said shorthand required of beginning stenographers.
Olson (35)	Wisconsin State U. - Eau Claire (1969)	Minneapolis and St. Paul, MN	339	Personnel directors in 27.0% of firms said shorthand writers were not employed.
Scalamogna (38)	U. of Houston (1969)	Houston, TX	152	Either manual or machine shorthand required of 100.0% of beginning stenographers and secretaries.
Baron (3)	Wisconsin State U. - Whitewater (1970)	Racine High Schools Racine, WI	45	60.0% employers said shorthand is not applicable in beginning office work.
			42	<u>33.3% of former shorthand students (all had completed advanced shorthand) said shorthand did not apply to beginning office jobs.</u>
Fujii (13)	U. of Montana (1971)	Honolulu, HI	114	Personnel directors said 17.5% of firms did not employ secretaries who used manual shorthand.

VII. SHORTHAND SPEED REQUIREMENTS OF SECRETARIES AS INDICATED BY PERSONNEL DIRECTORS

Research studies by Biggers (7), Graves (16), Kanger (24), Olson (35), Scalamogna (38), and Wiswell (45) contained findings regarding manual shorthand speed requirements of secretaries as indicated by personnel directors.

Due to considerable variation in the style of questions and choices offered to the respondents in the survey instruments of the six researchers, the groupings of the shorthand speed requirements reported by the researchers varied.

Five of the six research studies revealed findings which indicated that of 402 personnel directors, 254 or 63.2 percent said that their companies required shorthand speed requirements of 80 up to 100 words per minute of secretaries and stenographers.

Five studies stated that of 388 personnel directors, 72 or 18.6 percent responded that secretaries and stenographers with manual shorthand speeds of 60 up to 80 words per minute met acceptable speed requirements for employment.

Secretaries with manual shorthand speeds of 60 to 100 words per minute met the speed requirements of 326 or 79.1 percent of 412 personnel directors in the six research studies. Shorthand speeds in excess of 100 words per minute were required of secretaries by 86 or 20.9 percent of the 412 personnel directors.

Table 2:5, page 33, shows the manual shorthand speed requirements of secretaries as indicated by 412 personnel directors in six research projects. It was not possible to calculate percentages for each of the shorthand-words-per-minute groupings because of differences in shorthand speed choices offered respondents in the six survey instruments.

TABLE 2:5

SHORTHAND SPEED REQUIREMENTS OF SECRETARIES AND STENOGRAPHERS
AS INDICATED BY PERSONNEL DIRECTORS IN FIVE RESEARCH STUDIES

Shorthand Speeds in Words Per Minute								
Name of Researcher	Number of Respondents	60-80 w.p.m.	70-80 w.p.m.	80-100 w.p.m.	100-120 w.p.m.	120 + w.p.m.	60-100 w.p.m.	80 w.p.m.
Biggers (7)	41	46.8%	--%	58.5%	12.2%	2.4%	85.3%	--%
Graves (16)	10	--	100.0	--	--	--	--	80.0
Kanger (24)	24	--	--	87.5	--	12.5	87.5	25.0
Olson (35)	168	11.9	--	51.8	29.8	6.6	63.7	50.6
Scalamogna (38)	20	55.0	--	45.0	--	--	100.0	--
Wiswell* (45)	149	13.4	--	75.8	10.7	--	89.2	--

*Wiswell reported shorthand speeds as follows: 60 to 69, 70 to 79, 80 to 89, etc.

VIII. OTHER FINDINGS REGARDING ACCEPTABLE SHORTHAND SPEEDS FOR EMPLOYMENT

Research studies by Hershey (18), Kalchoff (23), Scalamogna (38), and Wiswell (45) reported findings regarding manual shorthand speeds required of secretaries and stenographers which were acceptable to business teachers as indicated by secretaries, former students, and beginning office workers.

Hershey (18) reported the top manual shorthand speeds passed on pre-employment tests given to secretaries employed at Indiana University and found that 90 percent of those secretaries indicated their top tested shorthand speed to be less than 100 words per minute.

Kalchoff (23) conducted a follow-up study of former high school students and found that 87.2 percent of them qualified for employment with shorthand speeds of 70 to 100 words per minute.

Scalamogna (38) found in a study of beginning office workers in Houston, Texas, that nearly 89 percent of the respondents felt that shorthand speeds needed on the job fell within the range of 60 to 100 words per minute. Of the nearly 89 percent who indicated that shorthand speeds of 60 to 100 words per minute were adequate for employment, one-half of the respondents said shorthand speeds of 60 to 80 words per minute were adequate, while the other one-half of the respondents indicated that shorthand speeds of 80 to 100 words per minute were necessary.

Wiswell (45) found in her study that, in general, shorthand speeds acceptable to business teachers when training students for stenographic positions were higher than the shorthand speeds required for stenographic positions by personnel directors.

Table 2:6, page 35, shows findings of four research studies regarding acceptable shorthand speeds for employment as indicated by secretaries, former students, beginning office workers, and business teachers.

ACCEPTABLE MANUAL SHORTHAND SPEEDS FOR EMPLOYMENT AS INDICATED BY SECRETARIES, FORMER STUDENTS, BEGINNING OFFICE WORKERS, AND BUSINESS TEACHERS IN FOUR RESEARCH STUDIES

*Hershey reported beginning shorthand speeds as "less than 70 w.p.m.," 70 w.p.m., 80 w.p.m., etc.
 **Wiswell reported shorthand speeds as follows: 60 to 69, 70 to 79, 80 to 89, etc.

Although the number of experimental research studies pertaining to attainment of shorthand speeds considered acceptable for employment when using alphabet versus symbol shorthand systems was somewhat limited, findings from two studies are included in this review of related research.

Experimental research pertaining to attainment of shorthand speeds acceptable for employment. Studies by Horlacher (19) and Weber (42) compared shorthand speed attainment when using alphabet shorthand systems with symbol shorthand systems.

Horlacher (19) compared Gregg (DJ) symbol shorthand with Stenoscript alphabet shorthand and found that after two semesters of study that the Stenoscript alphabet shorthand students achieved higher than the Gregg group at shorthand dictation speeds of 60, 70, 80, and 90 words per minute. At shorthand speeds of 50 and 100 words per minute, Horlacher found there was no significant difference between the achievement of the two groups. He concluded that Stenoscript alphabet shorthand students were superior to Gregg (DJ) symbol shorthand students after two semesters of study and recommended that Stenoscript alphabet shorthand be included in the stenographic curriculum.

Weber (42) conducted experimental research with students enrolled in beginning Gregg shorthand and Stenoscript ABC shorthand and concluded that since shorthand speeds of 80 words a minute with 90 percent accuracy are acceptable business standards, Stenoscript ABC shorthand should be incorporated into the curriculum to train students for vocational use.

IX. USE OF SHORTHAND TO TAKE DICTATION OF MINUTES OF MEETINGS

Studies by Ashworth (2), Justis (22), and Powell (37) contained findings pertaining to the use of shorthand to take dictation of minutes of meetings.

Table 2:7 depicts findings pertaining to the use of shorthand for taking dictation of minutes of meetings as indicated by former students who had studied shorthand at the post high school level.

TABLE 2:7

USE OF SHORTHAND TO TAKE DICTATION OF MINUTES OF MEETINGS
BY FORMER STUDENTS WHO HAD STUDIED SHORTHAND AT THE
POST HIGH SCHOOL LEVEL

Name of Researcher	Total Respondents	Number Using Shorthand for Minutes	Percent Using Shorthand for Minutes
Ashworth (2)	68	31	45.6
Justis (22)	64	39	60.9
Powell (37)	222	32	14.4
TOTAL	354	102	28.8

Table 2:7 shows that of 354 respondents, 102 or 28.8 percent used shorthand to take minutes of meetings.

X. USE OF SHORTHAND TO TAKE DICTATION OVER THE TELEPHONE

Findings regarding the use of manual shorthand to take dictation via the telephone were reported in the research studies of Ashworth (2) and Powell (37).

Of the 290 respondents who had studied shorthand at the post high school level as reported in these two studies, 125 or 43.1 percent used shorthand to take dictation over the telephone.

Table 2:8, page 38, shows findings regarding the use of shorthand to take dictation over the telephone.

TABLE 2:8

USE OF SHORTHAND TO TAKE DICTATION OVER THE TELEPHONE

Name of Researcher	Total Respondents	Number Using Shorthand for Telephone Dictation	Percent Using Shorthand for Telephone Dictation
Ashworth (2)	68	38	55.9
Powell (37)	222	87	39.2
TOTAL	290	125	43.1

The next portion of this review of related research deals with methods and machines used by respondents when replying to correspondence.

Daniel D. Howard Associates, Inc. (11), a Chicago headquartered management consulting firm, concluded as a result of a survey that many board chairmen or company presidents in Chicago waste or misuse their time. The management consulting firm found of 179 board chairmen or company presidents, only 21 percent used dictating machines, 58 percent dictated to secretaries, and 40 percent used longhand when answering letters or when putting out memorandums and other forms of writing.

Howard Associates felt that executives used more time than was necessary to execute paperwork responsibilities by writing in longhand rather than dictating.

XI. USE OF DICTATING/TRANSCRIBING MACHINES AS INDICATED BY FORMER SHORT-HAND STUDENTS IN TWELVE RESEARCH STUDIES

Studies by Ashworth (2), Battist (5), Behl (6), Colvin (8), Geller (14), Gray (17), Kalchoff (23), Kanger (24), Kelly (25), Marcellis (32), Powell (37), and Vrieze (40) contained findings regarding the use of

dictating/transcribing machines (also known as voice recorders) by former shorthand students. Table 2:9 depicts these findings and shows that of 1207 former shorthand students who responded to these research studies, 484 or 40.1 percent reported that they used dictating/transcribing machines on the job.

TABLE 2:9

USE OF DICTATING/TRANSCRIBING MACHINES AS INDICATED
BY FORMER SHORTHAND STUDENTS IN TWELVE RESEARCH STUDIES

Name of Researcher	Total Respondents	Number Using Transcriber	Percent Using Transcriber
Kelly (25)	120	72	60.0
Ashworth (2)	68	40	58.8
Vrieze* (40)	57	31	54.4
Geller (14)	60	29	48.3
Powell (37)	222	94	42.3
Colvin (8)	34	14	41.2
Kanger (24)	47	19	40.4
Battist (5)	46	17	37.0
Gray (17)	151	52	34.4
Kalchoff (23)	178	58	32.6
Behl (6)	69	21	30.4
Vrieze** (40)	82	21	25.6
Marcellis (32)	73	16	21.9
TOTAL	1207	484	40.1

*Former students had completed Shorthand I only.

**Former students had completed Shorthand I and Shorthand II.

XII. USE OF DICTATING/TRANSCRIBING MACHINES BY FORMER STUDENTS, SECRETARIES, AND STENOGRAPHERS AS INDICATED BY PERSONNEL DIRECTORS IN FIVE RESEARCH STUDIES

Research studies by Behl (6), Biggers (7), Kanger (24), Kelly (25), and Lamb (26) revealed findings regarding the use of dictating/transcribing machines by secretaries, stenographers, and former students as indicated by personnel directors.

Table 2:10 shows that personnel directors said that of 1363 secretaries, stenographers, and former students, 600 or 44.0 percent used dictating/transcribing machines.

TABLE 2:10

USE OF DICTATING/TRANSCRIBING MACHINES BY FORMER STUDENTS, SECRETARIES, AND STENOGRAPHERS AS INDICATED BY PERSONNEL DIRECTORS

Name of Researcher	Total Respondents	Number Using Transcriber	Percent Using Transcriber
Kelly (25)	118	72	61.0
Lamb (26)	55	33	60.0
Kanger (24)	40	21	52.5
Biggers (7)	1102	456	41.4
Behl (6)	48	18	38.0
TOTAL	1363	600	44.0

XIII. USE OF DICTATING/TRANSCRIBING MACHINES IN FIRMS AS INDICATED BY PERSONNEL DIRECTORS IN FOUR RESEARCH STUDIES

Research by Colvin (8), Fujii (13), Kalchoff (23), and Olson (35) contained findings about firms which hired dictating/transcribing machine operators who were not necessarily secretaries.

Table 2:11 depicts findings regarding firms which employed dictating/transcribing machine transcribers as indicated by personnel directors.

TABLE 2:11

USE OF DICTATING/TRANSCRIBING MACHINES IN FIRMS
AS INDICATED BY PERSONNEL DIRECTORS IN FOUR RESEARCH STUDIES

Name of Researcher	Total Respondents	Firms Which Employed D/T Transcribers	Percent of Firms Which Employed D/T Transcribers
Fujii (13)	92	67	72.8
Colvin (8)	31	21	67.7
Kalchoff (23)	20	12	60.0
Olson* (35)	339	203	60.0
TOTAL	482	303	62.9

*Included in the 339 total respondents of Olson's study were 102 large businesses. Personnel directors indicated that 91 or 89 percent of these large firms employed dictating/transcribing machine operators.

From the findings shown in Table 2:11, it was determined that of the 482 total respondents, 303 or 62.9 percent of the personnel directors indicated that dictating/transcribing machines were used in the firms which they represented.

XIV. USE OF DICTATING/TRANSCRIBING MACHINES BY SECRETARIES AS INDICATED BY SECRETARIES IN SEVEN RESEARCH STUDIES

Findings regarding the use of dictating/transcribing machines by secretaries as indicated by secretaries were reported in research studies by Fujii (13), Justis (22), Levine (29), Lloyd (30), McKee (34), Paddock (36), and Wagoner (41).

Table 2:12 shows that of 991 secretaries, 581 or 58.6 percent said that they used dictating/transcribing machines in the performance of their secretarial duties.

TABLE 2:12

USE OF DICTATING/TRANSCRIBING MACHINES BY SECRETARIES
AS INDICATED BY SECRETARIES IN SEVEN RESEARCH STUDIES

Name of Researcher	Total Secretaries	Number Using Transcriber	Percent Using Transcriber
McKee (34)	285	245	86.0
Justis (22)	64	44	68.8
Lloyd (30)	168	90	53.6
Levine (29)	196	93	47.5
Paddock (36)	50	20	40.0
Wagoner (41)	145	58	40.0
Fujii (13)	83	31	37.3
TOTAL	991	581	58.6

Two other studies (not shown in a table) included findings regarding the use of or expected use of dictating/transcribing machines.

Lawrence (28) found in his study of female office workers that 95 or 25.0 percent used dictating/transcribing machines.

Wagoner (41) found in her study that of 145 executives, 83 or 57.2 percent expected secretaries to be able to use dictating/transcribing machines.

In addition to using dictating/transcribing machines to record dictation, some secretaries recorded dictation directly at the typewriter and some used machine shorthand to record dictation.

XV. USE OF THE TYPEWRITER TO DIRECTLY RECORD DICTATION AS INDICATED BY SECRETARIES IN FOUR RESEARCH STUDIES

The studies of Geller (14), Kanger (24), Powell (37), and Wagoner (41), contained findings indicating that secretaries used the typewriter to directly record dictation.

Table 2:13 shows that of 467 respondents, 235 or 50.3 percent said that they used the typewriter to record dictation.

TABLE 2:13

SECRETARIES WHO INDICATED THEY USED THE TYPEWRITER TO DIRECTLY RECORD DICTATION AS REPORTED IN FOUR RESEARCH STUDIES

Name of Researcher	Total Respondents	Number Who Used Typewriter	Percent Who Used Typewriter
Wagoner (41)	145	103	71.0
Powell (37)	222	101	45.5
Geller (14)	60	26	43.0
Kanger (24)	40	5	12.5
TOTAL	467	235	50.3

Wagoner (41) also found that of 145 executives surveyed, 100 or 69.0 percent expected that their secretaries would be able to use the typewriter to take direct dictation as a method of replying to correspondence.

XVI. USE OF MACHINE SHORTHAND TO RECORD DICTATION

Research findings regarding the use of machine shorthand, *e.g.* Stenotype or Stenograph, were reported by Biggers (7), Drexler (12)

Fujii (13), and Wagoner (41). The findings of these four researchers were not included in a table in this review.

Biggers (7) found that personnel directors in 97 firms indicated that employees used machine shorthand to record dictation in 6 or 6.2 percent of these firms. She also found that of 1874 transcription workers employed by these 97 firms, 32 or 1.7 percent used machine shorthand on the job.

Drexler (12) compared the use of machine shorthand on the job by former students of two-year colleges and high schools located in New York State. She found that of 116 former two-year college students, 63 or 54.3 percent used machine shorthand on the job. Her study also reported that of 132 former students of New York City high schools, 16 or 12.1 percent used machine shorthand, while of 94 former high school students of Upstate and Long Island high schools, 13 or 12.1 percent used machine shorthand on the job.

Fujii (13) found that of 92 personnel directors who responded to her survey, 52 or 56.5 percent reported that employees used machine shorthand for "25 percent or less" of their total dictation. This may possibly have meant that no employees used machine shorthand since personnel directors were not offered a choice like "machine shorthand is not used by employees in this firm."

Wagoner (41) found that of 145 executives who responded to her study, 49 or 33.8 percent expected that their secretaries could take dictation using machine shorthand.

Wagoner (41) also found that of 145 secretaries, 17 or 11.7 percent indicated that they used machine shorthand to some extent in the performance of their secretarial duties.

XVII. COMPOSITION OF LETTERS ON THE JOB BY FORMER SHORTHAND STUDENTS AS INDICATED BY THESE STUDENTS IN EIGHT RESEARCH STUDIES

Research studies by Ashworth (2), Geller (14), Kalchoff (23), Kanger (24), Kelly (25), Marcellis (32), Powell (37), and Vrieze (40), revealed findings pertaining to the composition of letters on the job by former shorthand students who were not necessarily employed as secretaries.

Some investigators made a distinction between letters composed with instructions versus letters composed without instructions, but this distinction is not made in the tables shown in Sections XVII, XVIII, and XIX.

Table 2:14 shows findings of eight researchers. Of 907 former students who responded, 650 or 71.7 percent said they composed letters.

TABLE 2:14

FORMER SHORTHAND STUDENTS WHO SAID THEY COMPOSED LETTERS ON THE JOB AS INDICATED BY EIGHT RESEARCH STUDIES

Name of Researcher	Total Respondents	Number Who Composed Letters	Percent Who Composed Letters
Kelly (25)	120	103	85.8
Vrieze (40)	139	111	80.0
Geller (14)	60	45	75.0
Powell (37)	222	166	74.8
Ashworth (2)	68	46	67.7
Kanger (24)	47	29	61.7
Marcellis (32)	73	44	60.3
Kalchoff (23)	178	106	59.6
TOTAL	907	650	71.7

**XVIII. COMPOSITION OF LETTERS ON THE JOB BY SECRETARIES AND STENOGRAPHERS
AS INDICATED BY SECRETARIES AND STENOGRAPHERS IN FOUR RESEARCH
STUDIES**

Findings regarding the composition of letters on the job by secretaries and stenographers as indicated by secretaries and stenographers were revealed in the studies of Fujii (13), Justis (22), Levine (29), and Wagoner (41).

Table 2:15 shows that of 488 secretaries and stenographers who responded to these four studies, 447 or 91.6 percent indicated that they composed letters on the job.

TABLE 2:15

**COMPOSITION OF LETTERS ON THE JOB BY SECRETARIES AND STENOGRAPHERS
AS INDICATED BY SECRETARIES AND STENOGRAPHERS IN FOUR RESEARCH STUDIES**

Name of Researcher	Total Respondents	Number Who Composed Letters	Percent Who Composed Letters
Justis (22)	64	64	100.0
Wagoner (41)	145	139	96.0
Levine (29)	196	178	90.8
Fujii (13)	83	66	80.0
TOTAL	488	447	91.6

**XIX. FORMER SHORTHAND STUDENTS WHO COMPOSED LETTERS ON THE JOB AS
INDICATED BY PERSONNEL DIRECTORS IN THREE RESEARCH STUDIES**

Research studies by Fujii (13), Kanger (24), and Kelly (25) included findings pertaining to the composition of letters by former shorthand students who were not necessarily employed as secretaries as indicated by personnel directors.

Table 2:16, page 47, shows that personnel directors reported that of 250 former shorthand students, 185 or 74.0 percent composed letters.

TABLE 2:16

FORMER SHORTHAND STUDENTS WHO COMPOSED LETTERS ON THE JOB
AS INDICATED BY PERSONNEL DIRECTORS IN THREE RESEARCH STUDIES

Name of Researcher	Total Respondents	Number Who Composed Letters	Percent Who Composed Letters
Kelly (25)	118	103	87.3
Fujii (13)	92	61	66.3
Kanger (24)	40	21	52.5
TOTAL	250	185	74.0

Two studies reported findings (not included in a table in this review) regarding the composition of letters on the job as an expected job duty of secretaries and stenographers by executives and personnel directors respectively.

Wagoner (41) found in a study of 145 executives, 138 or 95.0 percent expected secretaries to be able to compose letters.

Lamb (26) found that of 55 personnel directors, 38 or 69.1 percent expected that stenographers should be able to compose letters.

The next portion of this review of related research pertains to some methods utilized and preferred by managers when replying to correspondence.

XX. SOME METHODS PREFERRED AND UTILIZED BY MANAGERS WHEN REPLYING TO CORRESPONDENCE

Fujii (13) reported findings of preferred methods of dictation by executives in Honolulu, Hawaii, as indicated by 92 personnel directors who represented that many firms. Her findings, which are presented in an informal table on page 48 of this study, are adapted from Table 8, p. 37 of her study.

<u>Preferred Method of Dictation</u>	<u>Responses of Personnel Directors</u>	<u>Percent</u>
Manual (written) shorthand	55	59.8
Machine shorthand	--	--
Voice transcription	11	12.0
Manual or machine shorthand	2	2.2
Manual shorthand or voice transcription	2	2.2
No preference indicated	18	19.6
No response	4	4.3
	92	100.1

Of the 92 personnel directors who responded to the Fujii (13) survey, 55 or 59.8 percent said that the most preferred method of dictation by executives involved the executive-secretary team where the executive dictated to the secretary who recorded the dictation in manual (written) shorthand.

Manager jotted reply in margin of incoming correspondence, secretary made copy of correspondence with marginal notation on copying machine, and copy or original was returned to sender. Wagoner (41) found that of 145 secretaries, 84 or 57.9 percent said that at times the managers to whom they reported utilized the method of jotting a reply in the margin of incoming correspondence, which they made a copy of and returned to the sender as a method of replying to correspondence.

Wagoner (41) also found that of 145 executives, 97 or 66.9 percent indicated that they expected secretaries to be able to handle replies to correspondence when responses were jotted in the margin of incoming correspondence.

Manager used longhand. Ashworth (2) and Kalchoff (23) reported findings from follow-up studies of former shorthand students while Levine (29) and Wagoner (41) revealed findings from surveys of secretaries regarding the use of longhand by managers when replying to correspondence.

Table 2:17 shows that of 587 secretaries and former shorthand students who responded to the four studies, 493 or 84.0 percent said that managers to whom they reported, wrote out replies in longhand as a method of initiating responses to correspondence.

TABLE 2:17

USE OF LONGHAND BY MANAGERS TO REPLY TO CORRESPONDENCE
AS REVEALED IN FOUR RESEARCH STUDIES

Name of Researcher	Total Respondents	Number of Managers Who Wrote Replies in Longhand	Percent of Managers Who Wrote Replies in Longhand
Wagoner (41)	145	135	93.1
Levine (29)	196	171	87.2
Kalchoff (23)	178	142	80.0
Ashworth (2)	68	45	66.2
TOTAL	587	493	84.0

Wagoner (41) also found that of the 145 executives who responded to her study, 135 or 93.1 percent said they would expect their secretaries to be able to prepare correspondence from their longhand replies.

To conclude this review of related research, a few summary statements are made in the next part of this chapter.

XXI. SUMMARY STATEMENTS

The findings of 45 research studies were included in this review of related research. Seventeen formal tables and one informal table were constructed to assist one in making a comparison of the findings of the various researchers.

Findings which pertained to the use of shorthand by secretaries, shorthand speeds needed by secretaries, and methods preferred by managers when replying to their correspondence as indicated by secretaries, managers, and personnel directors were of greatest interest to this investigator. However, findings from other studies regarding the use of shorthand by office personnel, other than secretaries, were included in this review as well.

Studies pertaining to the use of shorthand by former high school and post high school shorthand students were included since it was assumed that a majority of these students studied shorthand for vocational use.

From the findings of the previous researchers, it would appear that shorthand was used by more of those office personnel who were classified as secretaries than it was used by those office personnel who were otherwise classified. In many of the follow-up studies, findings pertaining to the use of shorthand on the job by former shorthand students were reported, but the use of shorthand by these former students in association with their specific job titles was not reported. That is, some studies revealed general employment statistics of former students, but they did not reveal if those who were employed as secretaries were also those who used shorthand in the performance of their secretarial duties.

Table 2:1 shows that 80.5 percent of the secretaries indicated that they used shorthand on the job. Table 2:2 shows that 74.4 percent of the former post high school students, who were not necessarily employed as

secretaries, used shorthand on the job. Table 2:3 shows that 50.7 percent of the former high school students, who were not necessarily employed as secretaries, used shorthand on the job.

As part of the requirements for his doctoral degree, Barr (4) analyzed, classified, synthesized, and summarized 220 masters' and doctoral theses which were written on the subject of shorthand. Included in his summary of research findings regarding the occupational use of shorthand, Barr concluded that shorthand is not used on the job by many graduates who had completed shorthand courses. Barr based this conclusion on findings contained in research studies which revealed at the one extreme that 47.1 percent of the former shorthand students used shorthand on the job while at the other extreme that 70 percent of the former shorthand students used shorthand on the job. The reasons given by the graduates for not using shorthand included: lack of efficiency, dislike for shorthand, lack of confidence, and change of vocation.

On the basis of the findings regarding the use of shorthand as reported in the research studies reviewed for this chapter, however, one would definitely not agree with Barr's conclusion that shorthand is not used on the job by many graduates who had studied shorthand if they are employed as secretaries. Just over four-fifths of the secretaries who responded to research surveys included in this review indicated that they used shorthand in the performance of their secretarial duties. From this review of related research, therefore, it is concluded that the ability to write shorthand is still an important tool for the secretary.

Chapter III presents the methods and procedures followed to collect the data for this research study.

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CHAPTER III

METHODS AND PROCEDURES

I. INTRODUCTION

The purpose of this chapter is to present the methods and procedures which were followed to collect and to process the data for this research study.

The normative-survey method of research was used since the problem of this study was to determine whether secretaries who work for large businesses in the Michigan cities of Detroit, Hamtramck, and Highland Park currently need and use shorthand to perform their secretarial duties.

One of the first tasks, therefore, was to identify the large businesses headquartered in these cities. To qualify as a large business for this study, a business had to have a net asset value of \$1 million, minimum annual sales of \$5 million, and a minimum of 250 employees.

II. SOURCE OF LARGE BUSINESSES

The Million Dollar Directory, 1972, was selected as the source document to identify the large businesses. It was felt that this publication by the well-known research organization of Dun & Bradstreet, Inc., would provide a reliable and inclusive listing of the large businesses headquartered in the Michigan cities of Detroit, Hamtramck, and Highland Park.

Detroit, which is the nation's fifth largest city in population, was the principal site of this study. The cities of Hamtramck and Highland Park have distinct and discrete political boundaries and are, in fact,

suburbs of Detroit; however, they are nested within the boundaries of Detroit. The research organization of Dun & Bradstreet lists the large businesses located in these three cities under the one heading of Detroit because of their geographical proximity. Hereinafter, therefore, reference will be made only to Detroit even though some of the large businesses were actually located in Highland Park and Hamtramck.

Dun & Bradstreet was established in 1841 and the company has as one of its principal objectives the furthering of national prosperity through the promotion and protection of trade. The Directory contains slightly over one-half of one percent of an estimated 4,200,000 (nonfarm) businesses in the United States.¹

Although Dun & Bradstreet exercises great care to keep the information contained in the Directory correct and up to date, the possibility of human errors inherent in the compilation of a directory of this magnitude exists. However, when errors are detected, the organization makes corrections in the next supplement or edition. The Directory is completely revised annually because changes among the million-dollar businesses are so frequent and extensive.

No charge of any kind is made for listing in the Million Dollar Directory.

In addition to eligible industrial concerns, the Directory lists transportation companies; utilities; stock brokers; banks and trust companies; mutual and stock insurance companies; as well as retailers and wholesalers. However, in an effort to limit the size of the Directory to a "field of maximum usefulness,"² no attempt was made to secure coverage of

¹Million Dollar Directory, 1972, op. cit., p. iv.

²Ibid.

certain classes of business activity. In general, foreign corporations; professional and consulting organizations, such as hospitals and engineering services; credit agencies; and financial and insurance companies other than those previously specified are not included in the Directory.

The basic qualification which a business must meet for listing in a Million Dollar Directory is an indicated net worth of \$1 million. Not included in the \$1 million or more of net worth of each business are intangible assets from a credit standpoint or assets which are not currently used in the operation of the business.

The Directory provides the following information about each of the listed businesses: (1) annual sales figures, (2) number of employees, (3) names and titles of individuals classified as top management.

There were 358 businesses listed in the 1972 edition of the Million Dollar Directory under the heading of Detroit. Of those 358 businesses, 146 (40.7 percent) qualified for inclusion in this study because they had an indicated net worth of \$1 million, minimum annual sales of \$5 million, and a minimum of 250 employees.

The Directory also classified the businesses by Standard Industrial Classification (SIC).

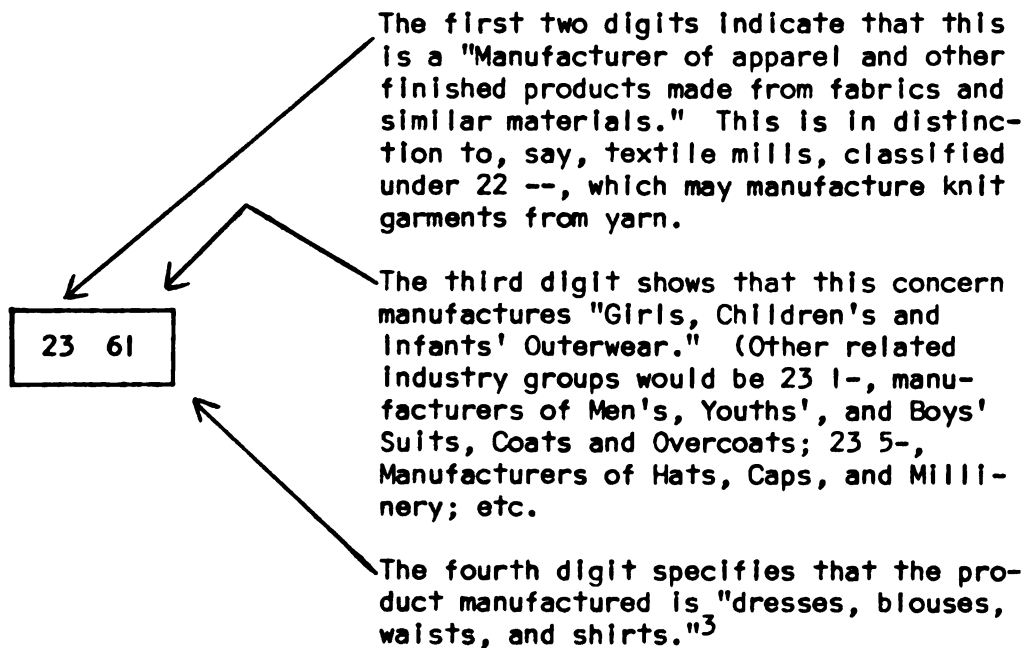
III. STANDARD INDUSTRIAL CLASSIFICATION OF 146 LARGE BUSINESSES

There are nine basic classifications of business according to Standard Industrial Classification: Agriculture, Forestry, and Fisheries; Mining; Contract Construction; Manufacturing Industries; Transportation, Communication, and Other Public Utilities; Wholesale Trade; Retail Trade; Finance, Insurance, and Real Estate; and Services.

The Directory classified the businesses within one or more of the Standard Industrial Classifications by use of a four-digit number. This

numbers(s) identified the specific activity or activities of a business.

For example, the code number 23 61 identifies a business as follows:



If a business qualified for multiple numerical Standard Industrial Classifications in the Directory, only the first SIC number was used to classify the business for this research study since the first SIC number associated with a business identified the principal activity of the firm as explained in the Directory.

Since no large businesses in Detroit were coded 01 12 through 09 89, the SIC code numbers for Agriculture, Forestry, and Fisheries, and since no large businesses were coded 10 11 through 14 99, the SIC code numbers for Mining, these two basic SICs were excluded from this study.

Of the 146 large businesses which met the criteria to be called a large business for this study, 5 or 3.4 percent were classified as Contract Construction; 67 or 45.9 percent were classified as Manufacturing; 14 or 9.6 percent were classified as Transportation, Communication, and Public Utilities; 14 or 9.6 percent were classified as Wholesale Trade; 24 or

³ibid., p. x.

16.4 percent were classified as Retail Trade; 13 or 8.9 percent were classified as Finance, Insurance, Real Estate; and 9 or 6.2 percent were classified as Services according to Standard Industrial Classification. Table 3:1 shows how the 146 large businesses were classified according to SIC.

TABLE 3:1
STANDARD INDUSTRIAL CLASSIFICATION AND PERCENT IN EACH
CLASSIFICATION OF 146 LARGE BUSINESSES IN DETROIT

Classification	Number of Businesses	Percent of Total
Contract Construction	5	3.4
Manufacturing Industries	67	45.9
Transportation, Communication, and Other Public Utilities	14	9.6
Wholesale Trade	14	9.6
Retail Trade	24	16.4
Finance, Insurance, and Real Estate	13	8.9
Services	9	6.2
TOTAL	146	100.0

IV. STRATIFICATION OF TOP AND OTHER MANAGEMENT

The Directory also identified by name and title those individuals who comprised the *top management* in each of the 146 businesses.

Only *top management* and *other management* stratifications of management were used in this study since it was concluded that additional strata of management might pose problems of classification. The literature indicates that there is a lack of standardization among companies

In the classification of managers at levels other than the top management level.

Furthermore, it was thought that managers at lower echelons, such as first-line management, might not be assigned secretaries. Therefore, all managers, other than top management, were allocated to a management category called *other management*.

V. INITIAL CONTACT WITH LARGE BUSINESSES

Attempts were made to contact, by telephone, a representative from the personnel department of each of the 146 companies which had been identified from the Directory and which qualified for inclusion in the study by definition of the investigator. A request was made to speak to the head of the personnel department. Following a brief personal introduction, a short description of the intended research project was made. At times referral was made to another individual in the personnel department who had the specific responsibility of hiring secretaries for that firm.

Following this initial telephone contact, representatives from 117 large businesses agreed to participate in the study. The reasons why 29 names of businesses were removed from the list of 146 businesses are given in the next part of this chapter.

VI. REASONS WHY 29 LARGE BUSINESSES, IDENTIFIED FROM THE MILLION DOLLAR DIRECTORY, 1972, WERE DELETED FROM ORIGINAL LIST OF 146 BUSINESSES

Twenty-nine names of businesses were removed from the list of 146 large businesses as identified from the Million Dollar Directory, 1972, for the following reasons:

(1) Company unwilling to participate in study. Representatives from ten companies indicated they were unwilling to participate in the study.

Of these ten businesses which refused to participate, four were in the Manufacturing SIC, four were in the Wholesale Trade SIC, one was in the Retail Trade SIC, and one was in the Finance, Insurance, and Real Estate SIC.

(2) Two or more companies listed separately in the Million Dollar Directory, 1972, but operated by same management. Two businesses listed separately in the Directory, but which were operated by the same management and which had an identical labor force, were considered as one business in the Retail Trade SIC. Therefore, one business name was deleted from the list of 146 large businesses.

Three businesses listed separately in the Directory, but which were all operated by the same management and which had an identical labor force, were considered as one business in the Transportation, Communication, and Public Utilities SIC. Therefore, two business names were deleted from the list of 146 large businesses.

(3) Company on strike during data-collection period. Two companies in the Manufacturing SIC were on strike throughout the data-collection period and were removed from the list of 146 businesses.

(4) Company moved from Detroit. Two companies had moved from the site of the study; one in the Manufacturing SIC and the other one in the Retail Trade SIC.

(5) Company no longer in business at time of study. Two companies were no longer in business at the time of the study: one was in the Wholesale Trade SIC, and the other was in the Retail Trade SIC.

(6) Company was subsidiary of another company. Five company names were eliminated from the list of 146 large businesses because the companies were subsidiaries of other companies which did participate in the study. These subsidiaries had the same management and the same labor forces as the parent companies. Of the five subsidiaries, three were in the

Wholesale Trade SIC, one was in the Transportation, Communication, and other Public Utilities SIC, and one was in the Finance, Insurance, and Real Estate SIC. The names of these five subsidiaries were deleted from the list of 146 large businesses.

(7) Company willing to participate, but insufficient number of secretaries from which to draw random sample. Although the five large businesses in the Contract Construction SIC were willing to participate, it was found that there were not enough total secretaries from which to draw a random sample. With the elimination of these five contract construction companies, which comprised all of the large businesses in the Contract Construction SIC in Detroit, the Contract Construction SIC was excluded from this study. The next section of this chapter delves more in depth with the reason for excluding the Contract Construction SIC.

VII. REASON FOR EXCLUDING CONTRACT CONSTRUCTION SIC

Five businesses listed in the Million Dollar Directory, 1972, with the Standard Industrial Classification of Contract Construction met the qualifications of a large business as delimited and defined for this study. Interviews with the personnel officers of these firms revealed a total of nine top management secretaries and no other management secretaries in the five large businesses.

Two of the five contract construction companies had only general office workers and no personnel classified as secretaries.

One of the five contract construction companies employed six of the total of nine top management secretaries in this SIC classification. However, this company was in the process of reorganizing the entire office and, although willing to participate at some time in the future, was not willing to participate during the data-collection period.

Therefore, because of an insufficient number of secretaries from which to draw a random sample, data from secretaries, managers, and personnel directors, who were employed by the five large businesses classified in the Standard Industrial Classification of Contract Construction in Detroit, were not collected for this study.

VIII. STANDARD INDUSTRIAL CLASSIFICATION OF 117 LARGE BUSINESSES WHICH AGREED TO PARTICIPATE IN THE STUDY

Table 3:2 shows the Standard Industrial Classification of the 117 large businesses from which data were collected for this study.

TABLE 3:2

**STANDARD INDUSTRIAL CLASSIFICATION OF 117 LARGE BUSINESSES
FROM WHICH DATA WERE COLLECTED**

Classification	Number of Businesses	Percent of Total
Manufacturing Industries	60*	51.3
Transportation, Communication, and other Public Utilities	11	9.4
Wholesale Trade	6	5.1
Retail Trade	20	17.1
Finance, Insurance, and Real Estate	11	9.4
Services	9	7.7
TOTAL	117	100.0

*One large decentralized business agreed to the participation of the personnel in only the Central Office Division.

IX. CONSTRUCTION OF INTERVIEW GUIDES

Three interview guides were developed by the researcher with advice from the Department of Research Consultation at Michigan State University.

These interview guides for secretaries, managers, and personnel directors were constructed to promote standardization and objectivity during the interviews.

Pilot testing of interview guides. The interview guide which was used when interviewing the secretaries was pilot tested by personal interviews with a group of secretaries who belonged to an organization of businesswomen called the Black Secretaries of America, Inc.

The interview guides for the managers and for the personnel directors were pilot tested by personal interviews with personnel in a large school system.

Revisions, resulting from the pilot testing, were incorporated and the interview guides for secretaries, managers, and personnel directors are shown in Appendices A, B, and C respectively.

X. ESTABLISHMENT OF POPULATION OF SECRETARIES

The population of secretaries was established by obtaining information from the personnel officers representing the 117 large businesses. Either personal or telephone interviews were held with the personnel officers representing the participating companies to ascertain the identities and number of *top management* secretaries and the identities and the number of *other management* secretaries in each company.

It is important to reemphasize that a decision had been made to include in the population of secretaries for this study all personnel who were classified as secretaries by the 117 participating large businesses.

The identification of a secretary within a company was sometimes given to the researcher by a number rather than by the name of the secretary. In those situations where secretaries were identified only by numbers, the personnel officer revealed only the specific number which had been assigned to a specific secretary for this study. The personnel officer knew both the specific number and the name of the secretary to whom this specific number had been assigned for this study, but the investigator knew only the assigned numbers. This secretary-number identification procedure was used by some firms as a security measure.

Forms were developed by the researcher to record the identities of the secretaries, either by name or by the assigned number, as revealed by the personnel officers. These identities were listed on the forms (a sample of which is shown in Appendix D) by alphabetical sequence of the names of the companies which employed the secretaries and according to the level of management stratification and SIC. There were 12 categories of secretaries - top management and other management secretaries in each of the 6 Standard Industrial Classifications.

Of the total population of 2953 secretaries, 1301 or 44 percent were employed by the Manufacturing SIC; 527 or 18 percent were employed by the Transportation, Communication, and other Public Utilities SIC; 41 or 1 percent were employed by the Wholesale Trade SIC; 400 or 14 percent were employed by the Retail Trade SIC; 514 or 17 percent were employed by the Finance, Insurance, and Real Estate SIC; and 170 or 6 percent were employed by the Services SIC.

Table 3:3 shows the number and percent of top management and other management secretaries in each of the six Standard Industrial Classifications used in this study.

TABLE 3:3

POPULATION OF TOP MANAGEMENT AND OTHER MANAGEMENT SECRETARIES
EMPLOYED BY 117 LARGE BUSINESSES AND CLASSIFIED BY SIC

Standard Industrial Classification	Secretaries to Top Management		Secretaries to Other Management		Total Secretaries	
	Number	Percent	Number	Percent	Number	Percent
Manufacturing Industries	262	41	1039	45	1301	44
Transportation, Communication, and other Public Utilities	67	10	460	20	527	18
Wholesale Trade	11	2	30	1	41	1
Retail Trade	108	17	292	13	400	14
Finance, Insurance, and Real Estate	133	21	381	16	514	17
Services	60	9	110	5	170	6
TOTAL	641	100	2312	100	2953	100

XI. PERCENTAGE OF TOP MANAGEMENT AND OTHER MANAGEMENT SECRETARIES TO TOTAL SECRETARIES WITHIN EACH STANDARD INDUSTRIAL CLASSIFICATION

Another profile of the secretaries who comprised the population from which the random samples were drawn shows the percentage of top management and other management secretaries compared to the total number of secretaries in each of the six Standard Industrial Classifications.

Top management secretaries. Of the 1301 secretaries in the Manufacturing SIC, 262 or 20 percent were top management secretaries. Of 527 secretaries in the Transportation, Communication, and Public Utilities SIC, 67 or 13 percent were top management secretaries. Of 41 secretaries in the Wholesale Trade SIC, 11 or 27 percent were top management secretaries. Of 400 secretaries in the Retail Trade SIC, 108 or 27 percent were top management secretaries. Of 514 secretaries in the Finance, Insurance and Real Estate SIC, 133 or 26 percent were top management secretaries. Of 170 secretaries in the Services SIC, 60 or 35 percent were top management secretaries.

Other management secretaries. Of 1301 secretaries in the Manufacturing SIC, 1039 or 80 percent were other management secretaries. Of 527 secretaries in the Transportation, Communication, and Public Utilities SIC, 460 or 87 percent were other management secretaries. Of 41 secretaries in the Wholesale Trade SIC, 30 or 73 percent were other management secretaries. Of 400 secretaries in the Retail Trade SIC, 292 or 73 percent were other management secretaries. Of 514 secretaries in the Finance, Insurance, and Real Estate SIC, 381 or 74 percent were other management secretaries. Of 170 secretaries in the services SIC, 110 or 65 percent were other management secretaries.

Table 3:4 shows the percentage of top management and other management secretaries compared to the total secretaries within each of the six SICs.

TABLE 3:4

PERCENTAGE OF TOP MANAGEMENT AND OTHER MANAGEMENT SECRETARIES COMPARED TO
TOTAL SECRETARIES WITHIN EACH STANDARD INDUSTRIAL CLASSIFICATION

Standard Industrial Classification	Total Secretaries in SIC	Top Management Secretaries		Other Management Secretaries	
		Number	Percent in SIC	Number	Percent in SIC
Manufacturing Industries	1301	262	20	1039	80
Transportation, Communication, and other Public Utilities	527	67	13	460	87
Wholesale Trade	41	11	27	30	73
Retail Trade	400	108	27	292	73
Finance, Insurance, and Real Estate	514	133	26	381	74
Services	170	60	35	110	65
TOTAL	2953	641	22	2312	78

XII. SELECTION OF RANDOM SAMPLE OF SECRETARIES

From the population of 2953 secretaries, 72 secretaries were randomly selected to comprise the sample. A table of random numbers⁴ was used to randomly select 6 secretaries from each of the 12 groups of secretaries shown in Table 3:3. For example, 6 top management secretaries were randomly selected from the 262 *top management secretaries* in the Manufacturing SIC, and 6 *other management secretaries* were randomly selected from the 1039 other management secretaries in the Manufacturing SIC. This random selectivity process was continued until 6 top management secretaries had been selected from each of the 6 Standard Industrial Classifications for a total of 36 top management secretaries and 6 other management secretaries had been randomly selected from each of the 6 Standard Industrial Classifications for a total of 36 other other management secretaries.

Since analysis of variance was used to test for differences in the need for shorthand by the secretaries in these 12 groups, the number of secretaries who were randomly selected from each of the groups was the same even though the total number of secretaries in each of the 12 groups varied considerably. Since the ideal design to use for analysis of variance is one of balance where there is an equal number in each cell, this balanced design was achieved by randomly selecting 6 secretaries from each of the 12 groups of secretaries.

Findings weighted. To estimate the overall need for and use of shorthand by the secretaries, however, the findings of the analysis of variance testing procedure were weighted also.

⁴Taro Yamane, Statistics, An Introductory Analysis (New York: Harper & Row, Publishers, 1964) Appendix Tables, Table 13 - Random Numbers.

XIII. SELECTION OF MANAGERS

The managers from whom the data for this study were collected were the 72 managers to whom the 72 randomly selected secretaries reported.

When a secretary reported to more than one manager, only one manager was interviewed. In cases in which the secretary worked for more than one manager, a priority system was used to select the manager to be interviewed. The manager with the longest length of service to the firm received first priority, the manager with the highest organizational rank received the second priority, and a randomly selected manager received the third priority.

XIV. SELECTION OF PERSONNEL DIRECTORS

Personnel directors were interviewed in all companies from which secretaries were randomly selected.

When more than one secretary from a particular company was randomly selected, the responses of the personnel director from that company were weighted by the number of secretaries who were randomly selected from that company. In other words, if two secretaries were randomly selected from a particular company, the responses of the personnel director from that company were tabulated twice in the data collected from personnel directors since it was assumed that the responses of the personnel director represented the policy of the personnel department for both of the secretaries who were employed by that company.

XV. DESIGN OF THE STUDY

Table 3:5 presents the design of the study and shows the number of managers, personnel directors, and randomly selected secretaries in each of the Standard Industrial Classifications from whom the data were collected.

TABLE 3:5

DESIGN OF STUDY SHOWING DATA SOURCES AND NUMBER OF MANAGERS, PERSONNEL DIRECTORS,
AND RANDOMLY SELECTED SECRETARIES WITH WHOM PERSONAL INTERVIEWS WERE HELD

Sources of Data	Standard Industrial Classifications						TOTALS
	Manufacturing Industries	Transportation, and Communication, and Public Utilities	Wholesale Trade	Retail Trade	Finance, Insurance, and Real Estate	Services	
Top Managers	6	6	6	6	6	6	36
Secretaries to Top Management	6	6	6	6	6	6	36
Other Managers	6	6	6	6	6	6	36
Secretaries to Other Management	6	6	6	6	6	6	36
Personnel Directors	11	5	6	6	6	6	40
TOTALS	35	29	30	30	30	30	184

XVI. DATA COLLECTION METHOD

The normative-survey (also called descriptive method) research method was chosen for this study since this method endeavors to answer the question, "What are the real facts with regard to the existing conditions?"⁵ Since this study sought to determine the current use of and need for shorthand by secretaries who were employed by large businesses, which were headquartered in Detroit, the normative-survey method was selected.

Although the normative-survey research method embraces several data-collecting techniques, the personal-interview technique was chosen as the best vehicle to yield the information desired.

Appointments were made with the respondents for the interviews, which were held in offices or conference rooms of the large businesses.

Data were collected from 36 top management secretaries, 36 other management secretaries, 36 top managers, 36 other managers, and personnel directors representing large businesses in each of the 6 Standard Industrial Classifications for a total of 184 personal interviews.

Although the time spent in each of the 184 interviews varied; in general, the elapsed time for each interview was from one to two hours.

At the beginning of each interview, the respondent was assured that the answers or opinions rendered during the interview process would be treated with absolute confidentiality. It was emphasized to the respondents that their answers would be held in strict confidence in an effort to elicit from them complete and honest responses to the questions asked during the interviews.

⁵Carter V. Good, A. S. Barr, and Douglas E. Scates, The Methodology of Educational Research (New York: Appleton-Century-Crofts, Inc., 1941), p. 287.

XVII. PROCESSING OF THE DATA

Coding of the data. After the data were collected, the response possibilities to the interview-guide questions, other than the open-ended questions, were coded according to a predetermined numerical code on computer laboratory data-coding forms. These numerical representations of the data were recorded on the data-coding forms to facilitate the key punching of the code numbers on 80-column IBM data-processing cards.

In Columns 1-4 were punched code numbers to identify the Standard Industrial Classification, the level of management, and the company. For example, a "1" in column one was used to identify the first of the six Standard Industrial Classifications, a "1" in column two was used to identify a response from a respondent in the top management category, and "01" in columns three and four was used to identify the first of the large businesses.

Columns 5-8 contained the code numbers assigned to the responses to the four questions asked of the personnel directors.

Columns 9-21 contained the coded responses of the managers to the first question asked of them, and Columns 22-34 contained the coded responses to their second question. The numbers representing the responses of the managers to their third question were punched in Column 35.

Columns 36-80 contained the numerically coded responses of the secretaries to the questions asked of them in the interviews.

The punched cards containing the data, together with punched cards which contained instructions, became the input for the Control Data Corporation 6500 computer located at the Computer Center on the campus of Michigan State University (MSU).

Statistical techniques. Several statistical techniques were applied to the data by the CDC 6500 computer to compile computer print-outs. The computer used MSU programs, which were stored in its memory, identified as JENN65, UNEQ1, BASTAT, ACT, and PFCOUNT to perform the statistical tests.

The two-way analysis of variance statistical technique (using the MSU program JENN65) was used to analyze differences in the mean scores which were derived from the responses of the secretaries regarding their perceived need for manual shorthand at the two levels of management and within each of the six Standard Industrial Classifications.

The statistical technique of one-way analysis of variance (using the MSU program UNEQ1) was used to analyze differences in the mean scores which were derived from the responses of the personnel directors regarding the manual shorthand requirements of secretaries in the large businesses among the six Standard Industrial Classifications.

The correlational statistical technique of Pearson product-moment correlation (using the MSU program BASTAT) was used to assess the relationship between the need for manual shorthand proficiency as perceived by secretaries and the degree of shorthand proficiency required of secretaries by personnel directors at the time the secretaries were hired by the large businesses. This statistical technique was also used to assess the relationship between the need for manual shorthand proficiency required of secretaries at the time that they were hired by their employers and the need for manual shorthand proficiency required on the job as perceived by the secretaries.

Chi-square analysis (using the MSU program ACT - Analysis of Contingency Tables), which is an appropriate test for data in the form of frequencies, was the statistical technique used to determine whether there was a

difference in the number of secretaries who used symbol shorthand and the number of secretaries who used alphabet shorthand.

The statistical technique of correlation, using Spearman's rank-difference coefficient correlation, was used to determine the degrees of relationship that existed between preferences and practices of managers and secretaries when replying to correspondence.

Computer print-outs of percentages and frequency counts (using the MSU program PFCOUNT) of responses from the respondents were the bases for most of the tables shown in Part II of Chapter IV.

CHAPTER IV
ANALYSIS OF THE DATA
Part I

I. INTRODUCTION

This chapter, which pertains to an analysis of the data, is divided into two parts. Nine null hypotheses are tested for statistical significance in Part I. In Part II, the data are not analyzed for statistical significance, but the responses to the questions in the Interview Guides by those who were interviewed are shown in tabular form with frequency counts and percentages.

All data were collected through personal interviews held with the personnel directors, secretaries, and managers who worked for large businesses.

In Part I, the statistical techniques used to test the null hypotheses are indicated and the results of the tests are presented.

II. NEED FOR MANUAL SHORTHAND AS PERCEIVED BY SECRETARIES

Hypotheses 1 and 2 pertained to the perceived need for manual shorthand as indicated by the 72 secretaries who were interviewed. These 72 secretaries were randomly selected from 2 levels of management and from 6 Standard Industrial Classifications.

Null Hypothesis 1

There will be no difference in the degrees of manual shorthand proficiency needed by secretaries as perceived by secretaries who work for *top management* and the degrees of manual shorthand proficiency needed by secretaries as perceived by secretaries who work for *other management*.

Null Hypothesis 2

There will be no difference in the degrees of manual shorthand proficiency needed by secretaries as perceived by secretaries who work for large businesses within any one of the six Standard Industrial Classifications of business included in this study when compared to the degrees of manual shorthand proficiency needed by secretaries as perceived by secretaries who work for large businesses within any one of the other Standard Industrial Classifications of business included in this study.

The data for Hypothesis 1 and Hypothesis 2 were collected by asking the secretaries to indicate the top manual shorthand speed that they felt was *essential* or *necessary* for their secretarial positions (Question 4, *Interview Guide - Secretaries*, Appendix A).

The analysis of variance on the top manual shorthand speeds which were perceived needed by secretaries at the two levels of management and in the six Standard Industrial Classifications is shown in Table 4:1.

TABLE 4:1

ANALYSIS OF VARIANCE ON TOP MANUAL SHORTHAND SPEEDS PERCEIVED NEEDED
BY SECRETARIES AT TWO LEVELS OF MANAGEMENT AND
SIX STANDARD INDUSTRIAL CLASSIFICATIONS

Source of Variation	Degrees of Freedom	Mean Square	F-ratio	Sig.
Levels of Management	1	0.055556	0.023256	(NS)
Standard Industrial Classifications (SIC)	5	9.100000	3.809302	(S)*
Interaction (Managers x SICs)	5	1.822222	0.762791	(NS)
Error	60	2.388889		

*Significant at the .05 level.

Table 4:1 reveals that there was no significant difference between the mean scores obtained from the responses of the top management secretaries and the mean scores obtained from the responses of the other management secretaries in regard to their perceived need for manual shorthand. These mean scores were obtained from the code numbers which were arbitrarily assigned to the possible answers to Question 4 of the *Interview Guide - Secretaries*. The potential choices of the secretaries were numerically coded for computer analysis as follows:

	Assigned Code Number
a) the use of manual shorthand is not necessary	= 0
b) under 60 words per minute	= 1
c) 60 up to 80 w.p.m.	= 2
d) 80 up to 100 w.p.m.	= 3
e) 100 up to 120 w.p.m.	= 4
f) 120 up to 140 w.p.m.	= 5
g) 140 w.p.m. and above	= 6

Therefore, null Hypothesis 1, which stated that there will be no difference in the degrees of manual shorthand proficiency needed by secretaries as perceived by secretaries who work for *top management* and the degrees of manual shorthand proficiency needed by secretaries as perceived by secretaries who work for *other management*, was not rejected at the .05 level of significance. An $F_{1,60}$ ratio greater than 4.00 was required for significance.

However, null Hypothesis 2, which stated that there will be no difference in the degrees of manual shorthand proficiency needed by secretaries as perceived by secretaries who work for large businesses within any one of the six Standard Industrial Classifications of business included in this study when compared to the degrees of manual shorthand proficiency needed by secretaries as perceived by secretaries who work for large businesses within any one of the other Standard Industrial Classifications of business

Included in this study was rejected at the .05 level of significance since the computed F-ratio of 3.809302 exceeded the $F_{5,60}$ value of 2.37. It was concluded, therefore, that there were significant differences in the need for manual shorthand proficiency as perceived by the secretaries who worked for large businesses within one or more of the six Standard Industrial Classifications of business.

The analysis of variance test concerning the need for manual shorthand as perceived by secretaries indicated that there were significant differences in the mean scores which were calculated from the responses of the secretaries in each of the six Standard Industrial Classifications. However, the analysis of variance test is an overall test of mean scores and, therefore, it was not known which of the mean scores differed significantly from the other mean scores.

Therefore, an additional statistical technique, the Scheffé post hoc technique, was applied to the data in an attempt to determine which of the mean scores differed significantly from the other mean scores. The Scheffé post hoc test may be used to compare or contrast specific means with combinations of other means or the test may be used to compare or contrast combinations of means with other combinations of means.

Table 4:2 shows the column means of 2.67 for the secretaries in the Manufacturing SIC; 2.50 for the secretaries in the Transportation, Communication, and Public Utilities SIC; .67 for the secretaries in the Wholesale Trade SIC; 2.50 for the secretaries in the Retail Trade SIC; 3.25 for the secretaries in the Finance, Insurance, and Real Estate SIC; and 2.42 for the secretaries in the Services SIC. The Scheffé post hoc statistical technique was used to compare and contrast these six mean scores and six of these contrasts are shown in Table 4:3 on page 82.

TABLE 4:2

MEAN SCORES DERIVED FROM RESPONSES OF SECRETARIES REGARDING
TOP MANUAL SHORTHAND SPEEDS PERCEIVED ESSENTIAL FOR SHORTHAND POSITIONS

Secretaries	Standard Industrial Classifications						ROW MEANS
	Manufacturing Industries	Transportation, Communication, and Public Utilities	Wholesale Trade	Retail Trade	Finance, Insurance and Real Estate	Services	
Top Management Secretaries	3.00	2.00	.83	2.67	2.83	2.83	2.36
Other Management Secretaries	2.33	3.00	.50	2.33	3.67	2.00	2.30
COLUMN MEANS	2.67	2.50	.67	2.50	3.25	2.42	2.33*

*Grand Mean

TABLE 4:3

SCHEFFÉ POST HOC CONTRASTS OF COLUMN MEANS DERIVED FROM RESPONSES OF SECRETARIES REGARDING PERCEIVED NEED FOR MANUAL SHORTHAND FOUND IN SIX STANDARD INDUSTRIAL CLASSIFICATIONS

	95.0% Confidence Interval Around Population Parameter		
Contrast	Lower Limit	Upper Limit	Sig.
<u>Contrast 1*</u>			
$\bar{X}_3 - \frac{\bar{X}_1 + \bar{X}_2 + \bar{X}_4 + \bar{X}_5 + \bar{X}_6}{5}$	-3.6819	- .3177	(S)**
<u>Contrast 2</u>			
$\bar{X}_5 - \frac{\bar{X}_1 + \bar{X}_2 + \bar{X}_3 + \bar{X}_4 + \bar{X}_6}{5}$	- .5823	2.7819	(NS)
<u>Contrast 3</u>			
$\frac{\bar{X}_1 + \bar{X}_5}{2} - \frac{\bar{X}_2 + \bar{X}_4 + \bar{X}_6}{3}$	- .9151	1.8886	(NS)
<u>Contrast 4</u>			
$\frac{\bar{X}_1 + \bar{X}_2 + \bar{X}_4 + \bar{X}_6}{4} - \bar{X}_3$	.1372	3.5708	(S)**
<u>Contrast 5</u>			
$\bar{X}_1 - \frac{\bar{X}_2 + \bar{X}_4 + \bar{X}_6}{3}$	-1.5780	1.9684	(NS)
<u>Contrast 6</u>			
$\frac{\bar{X}_1 + \bar{X}_2 + \bar{X}_4}{3} - \bar{X}_6$	-1.6334	1.9130	(NS)

- * $\bar{X}_1$ = Manufacturing Industries SIC column mean
 $\bar{X}_2$ = Transportation, Communication, and Public Utilities SIC column mean
 $\bar{X}_3$ = Wholesale Trade SIC column mean
 $\bar{X}_4$ = Retail Trade SIC column mean
 $\bar{X}_5$ = Finance, Insurance, and Real Estate SIC column mean
 $\bar{X}_6$ = Services SIC column mean

** Significant at .05 level.

Six Scheffé post hoc contrasts were tested in an effort to determine which of the six column means shown in Table 4:2 differed significantly from the other column means.

The first contrast compared the column mean score which was derived from the responses of the secretaries in the Wholesale Trade SIC regarding the top manual shorthand speeds they perceived necessary for their secretarial positions with the column mean scores which were derived from the responses of the secretaries in the other five Standard Industrial Classifications included in this study regarding the top manual shorthand speeds which they perceived were needed. In this contrast, the lowest mean score of .67, which was the column mean score for the Wholesale Trade SIC, was contrasted with a combination of the other five column mean scores of 2.67, 2.50, 2.50, 3.25, and 2.42 found in the five remaining SICs. Based on this Scheffé post hoc contrast, it was concluded that there was a significant difference in the contrast of the mean score of the Wholesale Trade SIC and the combination of the mean scores found in the other five SICs at the .05 level of significance.

The second contrast compared the column mean score which was derived from the responses of the secretaries in the Finance, Insurance, and Real Estate SIC to the combination of the column mean scores which were derived from the responses of the secretaries in the other five SICs regarding the top manual shorthand speeds they perceived necessary for their secretarial positions. In this contrast, the computer-calculated column mean score of 3.25, which was the highest of the six column mean scores shown in Table 4:2, was contrasted with the combination of the other five column mean scores of 2.67, 2.50, .67, 2.50, and 2.42. The second contrast indicated that there was no significant difference between the

highest column mean score found in the Finance, Insurance, and Real Estate SIC and the combination of the column mean scores found in the other five SICs at the .05 level of significance.

The third contrast did not include the lowest column mean of .67, the column mean found in the Wholesale Trade SIC, shown in Table 4:2. Of the five remaining column means, the two highest column means which were derived from the responses of the secretaries in the Finance, Insurance, and Real Estate SIC and in the Manufacturing SIC, were compared to the column means found in the three remaining SICs. In this contrast, the combination of the two highest column mean scores of 3.25 and 2.67 were contrasted with the combination of the remaining column mean scores of 2.50, 2.50, and 2.42. It was concluded from the third contrast that there was no significant difference between the combination of the two highest column mean scores and the combination of the three remaining column mean scores at the .05 level of significance.

The fourth contrast did not include the column mean score of 3.25, the mean score found in the Finance, Insurance, and Real Estate SIC. In the fourth contrast, the lowest column mean score of .67, the mean score found in the Wholesale Trade SIC, was contrasted with the combination of the four remaining column mean scores found in the other SICs. Therefore, the lowest of the column mean scores (.67) found in Table 4:2, which was derived from the responses of the secretaries regarding the top manual shorthand speeds perceived necessary for their secretarial positions, was contrasted with the combination of the four remaining mean scores of 2.67, 2.50, 2.50, and 2.42. It was concluded from the fourth contrast that there was a significant difference between the column mean score of .67 found in the Wholesale Trade SIC and the combination of the column mean scores found in the four other SICs at the .05 level of significance.

The fifth contrast excluded the highest column mean score of 3.25, the column mean in the Finance, Insurance, and Real Estate SIC and also excluded the lowest column mean score of .67, the column mean in the Wholesale Trade SIC. In the fifth contrast, the second highest of the six column mean scores shown in Table 4:2 was contrasted with the three remaining column mean scores. In this contrast, the column mean score of 2.67, which was derived from the responses of the secretaries in the Manufacturing SIC, was contrasted with the combination of the column mean scores of 2.50, 2.50, and 2.42 which were the column mean scores of Transportation, Communication, and Public Utilities; Retail Trade; and Services SICs respectively. It was concluded from the fifth contrast that there was no significant difference between the column mean score of 2.67 and the combination of the three remaining column mean scores at the .05 level.

The sixth contrast did not include the lowest of the six computer-calculated column mean scores shown in Table 4:2. Neither did this contrast include the highest of the column mean scores which was calculated from the responses of the secretaries in the Finance, Insurance, and Real Estate SIC. Therefore, the column means of .67 and 3.25 were not included in the sixth contrast. In this contrast, the column mean score of 2.42, which was the lowest of the four remaining column mean scores, was contrasted with the combination of the column mean scores of 2.67, 2.50, and 2.50 - the column mean scores found in the Manufacturing; Transportation, Communication, and Public Utilities; and Retail Trade SICs respectively. The sixth contrast indicated that there was no significant difference between the Services SIC column mean score of 2.42 and the combination of the three remaining column mean scores at the .05 level of significance.

It is emphasized that the six contrasts shown in Table 4:3 do not exhaust the possible contrasts which could have been tested. Only those contrasts which were thought to be the most meaningful were tested.

Of the six contrasts shown in Table 4:3, significant differences were found in the means contrasted in Contrast 1 and in Contrast 4. Both in Contrast 1 and in Contrast 4, it was found that the column mean of .67, the column mean derived from the responses of the secretaries in the Wholesale Trade SIC regarding the top manual shorthand speeds they considered necessary for their secretarial positions, differed significantly, at the .05 level of significance, from the combination of column means with which it was contrasted.

The significant differences found in the means contrasted in Contrast 1 and in Contrast 4 suggest that perhaps the column mean score derived from the responses of the secretaries in the Wholesale Trade SIC differed significantly from the five other column mean scores derived from the responses of the secretaries in the five other SICs regarding the top manual shorthand speeds they perceived were needed for their secretarial positions.

Perhaps the significant differences found in the contrast of means in Contrast 1 and in Contrast 4 of Table 4:3 identified a column mean score of the six column mean scores shown in Table 4:2 which caused the F test in the analysis of variance shown in Table 4:1 to indicate that there were significant differences in the need for manual shorthand proficiency as perceived by the secretaries who worked for large businesses within one or more of the six Standard Industrial Classifications of business when compared to the need for manual shorthand proficiency as perceived by the secretaries who worked for other of the Standard Industrial Classifications of business included in this study. Hypothesis 2

was rejected as a result of the F-ratio statistic of 3.809302, which is shown in Table 4:1.

III. SHORTHAND REQUIREMENTS OF SECRETARIES AS INDICATED BY PERSONNEL DIRECTORS

Null Hypothesis 3

There will be no difference in the minimum manual shorthand speeds required of secretaries as indicated by personnel directors who represent large businesses in any one of the six Standard Industrial Classifications of business when compared to the minimum manual shorthand speeds required of secretaries as indicated by personnel directors who represent large businesses in any one of the other Standard Industrial Classifications of business used in this study.

The data to test Hypothesis 3 were obtained by asking the personnel directors to indicate the minimum manual shorthand speeds required of secretarial applicants to obtain secretarial positions in the companies they represented (Question 2, *Interview Guide - Personnel Directors*, Appendix C).

The answer-choices to Question 2, which were offered the personnel directors at the time of the interviews, were assigned numerical codes for computer analysis as follows:

	<u>Assigned Code Number</u>
a) no shorthand is required	= 0
b) under 60 words per minute	= 1
c) 60 up to 80 w.p.m.	= 2
d) 80 up to 100 w.p.m.	= 3
e) 100 up to 120 w.p.m.	= 4
f) 120 up to 140 w.p.m.	= 5
g) 140 w.p.m. and above	= 6
h) no specific speed is required	= Blank

The mean scores shown in Table 4:4 were calculated by using the code numbers which were assigned to the response possibilities offered to the personnel directors in Question 2.

TABLE 4:4

MEAN SCORES AND VARIANCE OF MEAN SCORES DERIVED FROM RESPONSES OF
PERSONNEL DIRECTORS IN SIX STANDARD INDUSTRIAL CLASSIFICATIONS REGARDING
MINIMUM MANUAL SHORTHAND SPEEDS REQUIRED OF SECRETARIAL APPLICANTS

Standard Industrial Classification	Mean Score	Variance
Manufacturing Industries	2.80	0.17777778
Transportation, Communication, and other Public Utilities	3.00	0.00000000
Wholesale Trade	2.58	2.62878789
Retail Trade	2.16	1.78787878
Finance, Insurance, and Real Estate	3.16	0.51515151
Services	2.58	0.26515151
GRAND MEAN	2.71	

The variance column shown in Table 4:4 indicates the amount of variation in the responses of the personnel directors in six Standard Industrial Classifications regarding the minimum manual shorthand speeds required of secretarial applicants. The variance of 2.62878789 indicated considerable variation in the responses of the personnel directors in the Wholesale Trade SIC, while the variance of 0.00000000 in the Transportation, Communication, and Other Public Utilities SIC indicated that the responses of the personnel directors to Question 2 were identical.

The analysis of variance on the mean scores of the minimum manual shorthand speeds required of secretarial applicants in large businesses as indicated by personnel directors in six Standard Industrial Classifications is shown in Table 4:5.

TABLE 4:5

ANALYSIS OF VARIANCE CONCERNING MINIMUM MANUAL SHORTHAND SPEEDS
REQUIRED OF SECRETARIAL APPLICANTS AS INDICATED BY PERSONNEL DIRECTORS
IN SIX STANDARD INDUSTRIAL CLASSIFICATIONS

N = 68

Source of Variation	Degrees of Freedom	Mean Square	F-ratio	Sig.
Grand mean	1			
Standard Industrial Classification	5	1.470196	1.55109	(NS)
Error	62	.947849		
Total	68			

On the basis of the F-ratio shown in Table 4:5, it was concluded that there was no significant difference in the mean scores which were calculated

from the responses of personnel directors in six Standard Industrial Classifications regarding the minimum manual shorthand speeds required of secretarial applicants since the calculated F-ratio of 1.55109 did not exceed the tabled $F_{5,62}$ ratio of 2.637.

Therefore, null Hypothesis 3, which stated that there would be no difference in the minimum manual shorthand speeds required of secretaries at the time they were hired as indicated by personnel directors who represented large businesses in any one of the six SICs of business when compared to the minimum manual shorthand speeds required of secretaries as indicated by personnel directors who represented large businesses in any one of the other SICs of business included in this study, was not rejected at the .05 level of significance.

It should be noted that $N = 68$ in Table 4:5. The responses of 68 personnel directors, rather than 72, were included in the analysis of variance test since 4 of the personnel directors indicated that although shorthand was a requirement for secretarial applicants in the companies they represented, no specific minimum manual shorthand speeds were required.

When the four personnel directors were asked the reason why no specific minimum manual shorthand speeds were required even though shorthand was required of secretarial applicants, they responded as follows: "there is no job description for secretaries," "reliance on employment agency or personal referral," "it depends upon the requirements of the person to whom the secretary will be assigned," "it depends upon the specific job opening," and "no set speed requirements since many other factors are considered when hiring a secretary such as intelligence, experience, etc."

IV. COMPARISON OF NEED FOR AND REQUIREMENT OF SHORTHAND AS INDICATED BY SECRETARIES AND BY PERSONNEL DIRECTORS

Null Hypothesis 4

There will be no relationship between the maximum manual shorthand speeds perceived needed on the job as indicated by secretaries and the minimum manual shorthand speeds required of secretarial applicants as indicated by personnel directors.

Data to test Hypothesis 4, which pertained to a relationship between the need for manual shorthand as perceived by secretaries and the manual shorthand requirements of secretaries as indicated by personnel directors, were obtained by asking the secretaries to indicate the top manual shorthand speeds which they felt were *essential* or *necessary* to fulfill the responsibilities of their secretarial positions (Question 4, *Interview Guide - Secretaries*, Appendix A) and by asking the personnel directors to indicate the minimum manual shorthand speeds which were required of secretarial applicants in the large businesses which they represented (Question 2, *Interview Guide - Personnel Directors*, Appendix C).

To assess the relationship between the responses of the secretaries and the responses of the personnel directors, a Pearson product-moment correlation coefficient (r) was calculated and a coefficient of .16 was found.

The correlation coefficient of .16 was calculated from 68 paired responses of the secretaries and of the personnel directors rather than from 72 paired responses. Four personnel directors indicated that although shorthand was required of secretarial applicants, no specific shorthand speeds were required.

When personnel directors indicated that shorthand was required of secretarial applicants, but did not indicate specific speeds required,

this choice of answer was not assigned a code number for computer analysis. Since four personnel directors chose this answer, only 68 paired responses remained.

A Critical Values of the Correlation Coefficient Table indicated that a correlation coefficient (r) of .23 would be necessary to be significant at the .05 level of significance when based on 68 paired responses. Since the calculated correlation coefficient (r) of .16 did not exceed the tabled value of .23, null Hypothesis 4, which stated that there will be no relationship between the maximum manual shorthand speeds perceived needed as indicated by secretaries and the minimum manual shorthand speeds required of secretarial applicants as indicated by personnel directors, was not rejected.

It was concluded that there was not a significant relationship between the need for manual shorthand as perceived by the secretaries and the manual shorthand requirements of secretaries as indicated by personnel directors in six Standard Industrial Classifications. Apparently the two groups of people perceived the need for manual shorthand differently.

Null Hypothesis 5

There will be no relationship between the minimum manual shorthand speeds required of secretaries at the time they were hired for their present secretarial positions as indicated by the secretaries and the top manual shorthand speeds they perceived were essential or necessary for their present secretarial positions.

Hypothesis 5 involved a relationship between the responses of the secretaries regarding the minimum manual shorthand speeds required of them at the time they were hired for their present secretarial positions and the responses of the secretaries regarding manual shorthand speeds they perceived were essential for their present secretarial positions.

Data to test Hypothesis 5 were obtained by asking the secretaries to indicate the minimum manual shorthand speeds which were required of them by their employers to qualify for their present secretarial positions (Question 6, *Interview Guide - Secretaries*, Appendix A) and by asking the secretaries to indicate the top manual shorthand speeds that they felt were *essential* or *necessary* to fulfill the requirements of their present secretarial positions (Question 4, *Interview Guide - Secretaries*, Appendix A).

The secretaries were offered seven possible choices of answers to Question 4. Numerical codes were assigned to the choices offered the secretaries as follows:

	Assigned Code Number
a) the use of manual shorthand is not necessary	= 0
b) under 60 words per minute	= 1
c) 60 up to 80 w.p.m.	= 2
d) 80 up to 100 w.p.m.	= 3
e) 100 up to 120 w.p.m.	= 4
f) 120 up to 140 w.p.m.	= 5
g) 140 w.p.m. and above	= 6

The secretaries were offered nine possible choices of answers to Question 6. The numerical codes assigned to the potential answers follow:

	Assigned Code Number
a) knowledge of shorthand was not a requirement for present secretarial position	= 0
b) under 60 words per minute	= 1
c) 60 up to 80 w.p.m.	= 2
d) 80 up to 100 w.p.m.	= 3
e) 100 up to 120 w.p.m.	= 4
f) 120 up to 140 w.p.m.	= 5
g) 140 w.p.m. and above	= 6
h) do not remember shorthand speed required	= Blank
i) knowledge of shorthand was a requirement, but no specific speed was required	= Blank

Of the 72 secretaries who responded to Question 6, 4 indicated that they did not remember the manual shorthand speeds which were required of them to qualify for their present secretarial positions, and 23 indicated that shorthand was a requirement to qualify for their present secretarial positions, but that no specific shorthand speed was required.

If secretaries selected either item (h) or item (i) as their choice of answer to Question 6, these responses could not be included in the data used in the test of Hypothesis 5 since answer-choice (h) and answer-choice (i) were not assigned code numbers for computer analysis. Because 27 of the secretaries did indicate either item (h) or item (i) as their response to Question 6, these data were not included in the test of Hypothesis 5.

The statistical technique appropriate to measure the degree of relationship in Hypothesis 5 is correlation, which requires paired numerical scores from each individual for the statistical analysis. That is, only data from those secretaries who chose responses which were assigned code numbers of 0 through 6 both in Question 4 and in Question 6 were included in the test of Hypothesis 5. Therefore, since data from 27 of the secretaries were not included in the test of Hypothesis 5 because they selected either item (h) or item (i) as their response to Question 6, data from the responses of these same 27 secretaries to Question 4 were not included in the test of Hypothesis 5.

To test the relationship stated in Hypothesis 5, the correlational statistical technique of Pearson product-moment correlation was used. A correlation coefficient (r) of .85 was calculated which was based on the responses of the 45 secretaries who chose answers both in Question 4 and in Question 6 which were assigned the numerical codes of 0 through 6.

A Critical Values of the Correlation Coefficient Table indicated that a correlation coefficient (r) of .37 was necessary for the

calculated coefficient of Hypothesis 5 to be significant when based on 45 paired responses. Since the calculated coefficient of .85 exceeded the tabled value of .37, Hypothesis 5, which stated that there would be no relationship between the minimum manual shorthand speeds required of secretaries at the time they were hired for their present secretarial positions as indicated by the secretaries and the top manual shorthand speeds which the secretaries perceived were essential or necessary for their present secretarial positions, was rejected at the .05 level of significance. It was concluded that there was a significant positive relationship between the shorthand speeds required of secretaries at the time they were hired as indicated by secretaries and the shorthand speeds they perceived they needed on the job.

V. SYSTEM OF SHORTHAND USED BY SECRETARIES

Null Hypothesis 6

There will be no difference in the number of secretaries who use a symbol shorthand system and the number of secretaries who use an alphabet shorthand system in their secretarial positions.

Data used in the test of Hypothesis 6, which pertained to the system of manual shorthand which was used by the secretaries in their secretarial positions, were obtained by asking the secretaries to indicate the system of manual shorthand which they used in their secretarial positions (Question 1, *Interview Guide - Secretaries*, Appendix A).

At the time of the interviews, the secretaries were offered the following choices:

- a) symbol (Gregg, Pitman, Thomas, etc.)
- b) alphabet (Forkner, Speedwriting, Stenoscrypt ABC, etc.)
- c) other
- d) I do not use manual shorthand on the job

To determine if there was a significant difference in the number or frequency of secretaries who indicated that they used one manual shorthand system versus another shorthand system, chi-square analysis was used to test Hypothesis 6.

A chi-square test is the statistical technique used to determine the probability that the frequencies observed in a study differ from some theoretical hypothesized frequencies. In a chi-square test, the theoretical hypothesized frequencies are referred to as the expected frequencies since they are the frequencies which one would expect to occur by chance.

Therefore, based on null Hypothesis 6, it would be expected that 36 or 50 percent of the secretaries would have indicated that they used symbol shorthand, and 36 or 50 percent of the secretaries would have indicated that they used alphabet shorthand in their secretarial positions.

However, the observed frequencies, which were the actual responses of the secretaries to Question 1, were as follows: 54 of the secretaries indicated that they used symbol shorthand, 1 of the secretaries indicated the use of alphabet shorthand, and 17 of the secretaries indicated that they did not use manual shorthand on the job.

A chi-square value of 51.07 was calculated from the chi-square test. From the table of chi-square values, the value needed for significance was 10.83 at the .001 level of significance.

Therefore, since the calculated chi-square value of 51.07 exceeded the tabled value of 10.83, null Hypothesis 6, which stated that there would be no difference in the number of secretaries who used a symbol shorthand system and the number of secretaries who used an alphabet shorthand system in their secretarial positions, was rejected at the .001 level of significance. It was concluded that there was a significant

difference in the number of secretaries who used a symbol system of shorthand and the number of secretaries who used an alphabet system of shorthand in their secretarial positions.

VI. PREFERENCES AND PRACTICES WHEN REPLYING TO CORRESPONDENCE

Hypotheses 7, 8, and 9 involved relationships between preferences of secretaries and managers and practices of managers when replying to correspondence. In these hypotheses, the degree of association between two sets of ranks was determined. The statistical technique used to determine the degree of association between the two sets of ranks in Hypotheses 7, 8, and 9, was Spearman's coefficient of rank correlation (r_s). To test the significance of the Spearman's coefficient of rank correlation (r_s), which was calculated for each of the three hypotheses, a t statistic was calculated using the following t -test¹:

$$t = \frac{r_s \sqrt{n - 2}}{\sqrt{1 - r_s^2}}$$

Null Hypothesis 7

There will be no relationship between the methods practiced by managers to reply to their correspondence and the methods preferred by managers to reply to their correspondence

Data to test Hypothesis 7, which pertained to the relationship between the methods which managers practiced when replying to their correspondence and the methods which managers indicated they would prefer to use when replying to their correspondence, were obtained by asking the managers to

¹ t has student t distribution with $n-2$ degrees of freedom

indicate the methods which they practiced when they replied to their correspondence (Question 1, *Interview Guide - Managers*, Appendix B) and by asking the managers to indicate the methods which they would prefer to utilize to reply to correspondence (Question 2, *Interview Guide - Managers*, Appendix B).

A Spearman's coefficient of rank correlation (r_s) of .86 was calculated from the data collected from the managers. To test the significance of this correlation coefficient, a t value was computed. The calculated t value of 5.59 exceeded the tabled t value of 2.20 at the .05 level of significance.

Therefore, null Hypothesis 7, which stated that there would be no relationship between the methods which managers practiced to reply to their correspondence and the methods which managers preferred to use to reply to their correspondence, was rejected at the .05 level of significance. It was concluded that there was a significant relationship between the methods which managers practiced when replying to their correspondence and the methods which managers indicated they preferred to use when replying to their correspondence.

Null Hypothesis 8

There will be no relationship between the methods which managers practiced to reply to their correspondence and the methods which their secretaries indicated they would prefer the managers to practice when replying to correspondence.

Data to test Hypothesis 8, which pertained to the relationship between the methods which managers practiced to reply to their correspondence and the methods which their secretaries indicated that they would prefer the managers to use when replying to correspondence, were obtained

by asking the managers to indicate the methods they practiced to reply to their correspondence (Question 1 - *Interview Guide - Managers*, Appendix B) and by asking the secretaries to indicate the methods they would prefer that the managers would utilize when they replied to their correspondence (Question 14 - *Interview Guide - Secretaries*, Appendix A).

A Spearman's coefficient of rank correlation (r_s) of .71 was calculated from the data collected from the managers and from the secretaries. To test the significance of this correlation coefficient, a t value was computed. The calculated t value of 3.39 exceeded the tabled t value of 2.20 at the .05 level of significance.

Therefore, null Hypothesis 8, which stated that there would be no relationship between the methods which managers practiced to reply to their correspondence and the methods which their secretaries indicated they would prefer the managers to practice when replying to correspondence, was rejected. It was concluded that there was a significant relationship between the methods practiced by managers and the methods which secretaries indicated they preferred managers to use when replying to correspondence.

Null Hypothesis 9

There will be no relationship between the methods which managers indicated they preferred to practice when replying to their correspondence and the methods which their secretaries indicated they would prefer the managers to practice when replying to correspondence.

Data used in the test of Hypothesis 9, which dealt with the relationship between the methods which the managers said they preferred to use when replying to correspondence and the methods which their secretaries said they would prefer the managers to use when replying to correspondence, were obtained by asking the managers to indicate the methods which they

preferred to use when replying to correspondence (Question 2, *Interview Guide - Managers*, Appendix B) and by asking the secretaries to indicate the methods which they would prefer the managers to use to reply to their correspondence (Question 14 - *Interview Guide - Secretaries*, Appendix A).

A Spearman's coefficient of rank correlation (r_s) of .91 was calculated from the data collected from the managers and from the secretaries. To test the significance of this correlation coefficient, a t value was computed and found to be 7.51. This calculated t value exceeded the tabled t value of 2.20 at the .05 level of significance.

Therefore, Hypothesis 9, which stated that there would be no relationship between the methods which managers indicated that they preferred to practice when replying to their correspondence and the methods which their secretaries indicated that they would prefer the managers would practice to reply to their correspondence, was rejected. It was concluded that there was a significant relationship between the methods which managers said they preferred to practice to reply to their correspondence and the methods which secretaries said they would prefer the managers to use to reply to their correspondence.

VII. SUMMARY - PART I

Nine hypotheses were tested in Part I of the analysis of the data chapter. The data used in the tests of these hypotheses were collected from personal interviews with secretaries, managers, and personnel directors.

Of the nine hypotheses which were tested in Part I, significant differences were found in the tests of null Hypotheses 2 and 6, and no relationship was found in the test of Hypothesis 4.

Null Hypotheses Which Were Rejected Because Significant Statistical Differences Were Found in the Tests of the Hypotheses

Null Hypothesis 2

There will be no difference in the degrees of manual shorthand proficiency needed by secretaries as perceived by secretaries who work for large businesses within any one of the six Standard Industrial Classifications of business included in this study when compared to the degrees of manual shorthand proficiency needed by secretaries as perceived by secretaries who work for large businesses within any one of the other Standard Industrial Classifications of business included in this study.

Significant differences were found to exist in the need for manual shorthand proficiency as perceived by the secretaries who worked for large businesses within any one of the six Standard Industrial Classifications of business when compared to the need for manual shorthand proficiency as perceived by the secretaries who worked for any one of the other Standard Industrial Classifications of business. Based on the mean scores derived from the responses of the secretaries, it appeared that the secretaries in the Finance, Insurance, and Real Estate SIC perceived a greater need for shorthand, in words per minute, than did the secretaries in any one of the other five SICs. The secretaries in the Wholesale Trade SIC indicated the least need for shorthand, in words per minute, of the six categories of secretaries. Analysis of variance revealed a significant difference in the mean scores derived from the responses of the secretaries regarding the need for shorthand in the six SICs. A post hoc analysis of the mean scores sought to isolate those mean(s) which differed significantly from the other mean(s). It was thought that perhaps the mean score of the secretaries in the Wholesale Trade SIC may have been so low that it differed significantly from the other five mean scores, and, therefore, it may have been the mean score which caused the F-ratio in the

analysis of variance test to indicate that there were significant differences in the six mean scores on the perceived need for manual shorthand by secretaries in the six Standard Industrial Classifications of business.

Null Hypothesis 6

There will be no difference in the number of secretaries who use a symbol shorthand system and the number of secretaries who use an alphabet shorthand system in their secretarial positions.

Significant differences were found in the test of Hypothesis 6, which pertained to the systems of manual shorthand which were used by the secretaries in their secretarial positions. Although the test of this hypothesis did not indicate which of the systems of shorthand was used more extensively by the secretaries, a frequency count indicated that symbol shorthand was used more widely by the secretaries than was alphabet shorthand.

Null Hypothesis Which Was Not Rejected Because It Stated That There Would be No Relationship Between the Variables Being Tested, and No Significant Statistical Relationship Was Found in the Test of the Hypothesis

Null Hypothesis 4

There will be no relationship between the maximum manual shorthand speeds perceived needed on the job as indicated by secretaries and the minimum manual shorthand speeds required of secretarial applicants as indicated by personnel directors.

No significant statistical relationship was found in the test of Hypothesis 4 which, therefore, was not rejected. Apparently the degree of manual shorthand proficiency needed by secretaries was perceived differently by the secretaries as compared to the levels of shorthand

proficiency required of secretaries by large businesses as indicated by personnel directors.

It should be recalled that Hypothesis 2, which stated that there would be no difference in the degrees of manual shorthand proficiency needed by secretaries as perceived by the secretaries who work for large businesses within any one of the six Standard Industrial Classifications of business when compared to the degrees of manual shorthand proficiency needed as perceived by the secretaries who work for any one of the other Standard Industrial Classifications of business included in this study, was rejected. It was concluded that there were significant differences in the degrees of manual shorthand proficiency perceived needed by secretaries as indicated by secretaries within different Standard Industrial Classifications.

However, Hypothesis 3, which stated that there would be no difference in the minimum manual shorthand speeds required of secretaries as indicated by personnel directors who represented large businesses in any one of the six Standard Industrial Classifications of business when compared to the minimum manual shorthand speeds required of secretaries as indicated by personnel directors who represented large businesses in any one of the other Standard Industrial Classifications of businesses used in this study, was not rejected. It was concluded that there were not significant differences in the minimum manual shorthand speeds required of secretaries as indicated by the personnel directors who represented the large businesses classified by Standard Industrial Classification.

Perhaps the fact that Hypothesis 2 was rejected while Hypothesis 3 was not rejected accounts for the fact that Hypothesis 4 was not rejected.

Null Hypotheses Which Were Not Rejected Because Significant Statistical Differences Were Not Found as a Result of the Statistical Tests

No significant statistical differences were found when the following hypotheses were tested:

Null Hypothesis 1

There will be no difference in the degree of manual shorthand proficiency needed by secretaries as perceived by secretaries who work for *top management* and the degree of manual shorthand proficiency needed by secretaries as perceived by secretaries who work for *other management*.

Null Hypothesis 3

There will be no difference in the minimum manual shorthand speeds required of secretaries as indicated by personnel directors who represent large businesses in any one of the six Standard Industrial Classifications of business when compared to the minimum manual shorthand speeds required of secretaries as indicated by personnel directors who represent large businesses in any one of the other Standard Industrial Classifications of business used in this study.

Null Hypotheses Which Were Rejected Because They Stated There Would be No Relationship Between the Variables Being Tested, but Significant Statistical Relationships Were Found in the Tests of the Hypotheses

Significant statistical relationships were found in the tests of the following hypotheses, which stated in null form that there would be no relationships; and, therefore, they were rejected:

Null Hypothesis 5

There will be no relationship between the minimum manual shorthand speeds required of secretaries at the time that they were hired for their present secretarial positions as indicated by the secretaries and the top manual shorthand speeds which they perceived were essential or necessary for their present secretarial positions.

Null Hypothesis 7

There will be no relationship between the methods practiced by managers to reply to their correspondence and the methods preferred by managers to reply to their correspondence.

Null Hypothesis 8

There will be no relationship between the methods which managers practiced to reply to their correspondence and the methods which their secretaries indicated they would prefer the managers to practice when replying to correspondence.

Null Hypothesis 9

There will be no relationship between the methods which managers indicated they preferred to practice when replying to their correspondence and the methods which their secretaries indicated they would prefer the managers to practice when replying to correspondence

This concludes Part I of the analysis of the data chapter. Part II presents an examination of the findings with percentages and frequency counts shown in tabular form.

ANALYSIS OF THE DATA

Part II

I. INTRODUCTION

Part II of the analysis of the data chapter presents findings in addition to and as an enlargement of those presented in Part I. These data were obtained during the personal interviews with the personnel directors, secretaries, and managers who were employed by the large businesses in the City of Detroit.

This part of the analysis of the data chapter is presented for the benefit of those who lack familiarity with the statistical techniques employed to analyze the data in Part I and for those who prefer to examine data presented in tabular form with frequency counts and percentages. Tables presented in Part II were developed from computer print-outs which were based on the data which were collected during the personal interviews.

Essentially, the format of this part of the analysis of the data chapter follows the sequence of the questions as they appeared in the interview guides. Copies of the interview guides are included in the appendices as follows: *Interview Guide - Secretaries* (IG-S), Appendix A; *Interview Guide - Managers* (IG-M), Appendix B; *Interview Guide - Personnel Directors* (IG-PD), Appendix C.

II. DATA COLLECTED FROM INTERVIEWS WITH PERSONNEL DIRECTORS

Personal interviews were conducted with personnel directors in all of the large businesses from which the secretaries were randomly selected.

When more than one secretary from a particular company was randomly selected, the responses of the personnel director representing that large

business were weighted by the number of secretaries who were interviewed from that company. For example, if two secretaries were randomly selected from a particular company, the responses of the personnel director from that company were tabulated twice in the data collected from personnel directors since it was assumed that the responses of the personnel director represented the policy of the personnel department for both of the secretaries who were employed by that company.

Question 1, which was asked of personnel directors, pertained to shorthand requirements of secretaries. Personnel directors were asked to identify the system(s) of shorthand which were required of secretaries as a prerequisite for secretarial positions in the large businesses which they represented (Question 1 - IG-PD). Table 4:6 indicates the responses of the personnel directors to this question.

TABLE 4:6

SHORTHAND SYSTEMS REQUIRED OF SECRETARIAL APPLICANTS AS
PREREQUISITES FOR SECRETARIAL POSITIONS AS INDICATED
BY PERSONNEL DIRECTORS IN LARGE BUSINESSES

Shorthand System Required	Number	Percent
Symbol (Gregg, Pitman, Thomas)	11	15.3
Alphabet (Forkner, Stenoscript ABC, Speedwriting)	--	0.0
Machine (Stenotype, Stenograph)	--	0.0
Either symbol or alphabet	30	41.7
Symbol, alphabet, or machine	3	4.2
No shorthand is required	6	8.3
Other	22	30.6
TOTAL	72	100.1

Table 4:6 shows that either symbol or alphabet shorthand was required of secretaries for secretarial positions in large businesses as indicated by 41.7 percent of the personnel directors. An additional 15.3 percent of the personnel directors specified symbol shorthand exclusively.

Symbol, alphabet, or machine shorthand was required of secretaries as indicated by 3 or 4.2 percent of the personnel directors. However, of those personnel directors who said that machine shorthand would be acceptable for secretaries, none indicated that secretaries were currently using machine shorthand in the firms they represented.

Six or 8.3 percent of the personnel directors indicated that no shorthand was required of secretaries in the large businesses which they represented.

Twenty-two or 30.6 percent of the personnel directors chose "other" as their response to the first question. Representative of the reasons given for this choice follow:

"It depends upon the person to whom the secretary is to be assigned."

"For top management, shorthand is still basic - he wants a secretary to be able to read back. For other management, secretaries are hired without shorthand skills."

"Secretaries are hired according to the man- men who want shorthand get girls with the knowledge. Other men use dictating-transcribing machines."

"Contingent upon the man."

"Some secretaries use dictaphones."

"Shorthand is not used as a screening device. Who wants a skill and not use it?"

Question 2, asked of the personnel directors, pertained to the minimum shorthand speeds required of secretarial applicants (Question 2 - IG-PD).

The responses of personnel directors pertaining to minimum shorthand speeds required of secretaries are shown in Table 4:7.

TABLE 4:7

MINIMUM MANUAL SHORTHAND SPEEDS REQUIRED OF APPLICANTS FOR SECRETARIAL POSITIONS IN LARGE BUSINESSES AS INDICATED BY PERSONNEL DIRECTORS

N = 72

Shorthand Speed	Number of Personnel Directors	Percent
No shorthand is required	6	8.3
Under 60 w.p.m.	--	0.0
60 up to 80 w.p.m.	10	13.9
80 up to 100 w.p.m.	44	61.1
100 up to 120 w.p.m.	8	11.1
120 up to 140 w.p.m.	--	0.0
140 w.p.m. and above	--	0.0
No specific speed is required	4	5.6

Table 4:7 shows that 6 or 8.3 percent of the personnel directors said that no shorthand was required of secretarial applicants in the large businesses which they represented. Forty-four or 61.1 percent of the personnel directors indicated that shorthand speeds of 80 up to 100 words per minute were required of secretarial applicants; while 10 or 13.9 percent indicated minimum shorthand speeds of 60 up to 80 words per minute were required, and 8 or 11.1 percent said minimum speeds of 100 up to 120 words per minute were required. No specific minimum shorthand speeds were required of secretaries as reported by 4 or 5.6 percent of the personnel directors.

Mean scores calculated from the responses of the personnel directors to Question 2 are shown in Table 4:8. Also shown in this table are shorthand

speeds in words-per-minute groupings which were determined by comparing the mean scores with the code numbers which were assigned to the possible responses offered the personnel directors at the time of the interviews. These possible responses and assigned code numbers are shown following Table 4:8.*

TABLE 4:8

MEAN SCORES AND EQUATED SHORTHAND SPEEDS IN WORDS-PER-MINUTE GROUPINGS
DERIVED FROM RESPONSES OF PERSONNEL DIRECTORS REGARDING MINIMUM
MANUAL SHORTHAND SPEEDS REQUIRED OF SECRETARIES

Standard Industrial Classification	Mean Score	Minimum Shorthand Speeds
Manufacturing	2.80	60 up to 80 w.p.m.
Transportation, Communication, and other Public Utilities	3.00	80 up to 100 w.p.m.
Wholesale Trade	2.58	60 up to 80 w.p.m.
Retail Trade	2.16	60 up to 80 w.p.m.
Finance, Insurance, and Real Estate	3.16	80 up to 100 w.p.m.
Services	2.58	60 up to 80 w.p.m.
GRAND MEAN	2.71	60 up to 80 w.p.m.

*Question 2 Response Possibilities

Code Number Assigned

No shorthand is required
Under 60 words per minute
60 up to 80 w.p.m.
80 up to 100 w.p.m.
100 up to 120 w.p.m.
120 up to 140 w.p.m.
140 w.p.m. and above
No specific speed is required

= 0
= 1
= 2
= 3
= 4
= 5
= 6
= Blank

Of the six mean scores shown in Table 4:8, the highest mean score of 3.16 was derived from the responses of the personnel directors in the Finance, Insurance, and Real Estate SIC. The second highest mean score of 3.00 was derived from the responses of the personnel directors in the Transportation, Communication, and other Public Utilities SIC. Personnel directors in these two Standard Industrial Classifications indicated higher manual shorthand speed requirements, on an average, than did the personnel directors in the four remaining SICs. Shorthand speeds of 80 up to 100 words per minute were required, on an average, of secretaries as indicated by personnel directors who worked for large businesses in the Finance, Insurance, and Real Estate SIC and in the Transportation, Communication, and other Public Utilities SIC.

The personnel directors in the four remaining Standard Industrial Classifications indicated that to qualify for secretarial positions in the large businesses which they represented, secretaries were required, on an average, to be able to write manual shorthand at speeds of 60 up to 80 words per minute.

Overall, as shown by the grand mean of 2.71, the personnel directors who were interviewed for this study indicated that shorthand speeds of 60 up to 80 words per minute were required of secretarial applicants in order for them to qualify for secretarial positions in the companies which they represented.

The test of Hypothesis 3 in Part I of the analysis of the data chapter indicated that there was no significant difference in the mean scores shown in Table 4:8.

Question 3 and Question 4 of the *Interview Guide - Personnel Directors* are presented in the next section of this chapter. Question 3 pertained to the type of shorthand test which was administered to verify

a secretarial applicant's ability to write shorthand at a specific speed. Question 4 dealt with the relationship between the salary to be paid to and the degree of manual shorthand proficiency possessed by a secretarial applicant. Since questions similar to Questions 3 and 4 of the *Interview Guide - Personnel Directors* were also addressed to the secretaries, the data obtained from the responses of the personnel directors will be presented in the next section of this chapter to assist one when making comparisons with the data obtained from the responses of the secretaries.

III. DATA FROM AND ABOUT SECRETARIES

Personal interviews were conducted with a total of 72 secretaries. One half of the 72 secretaries were classified as *top management* secretaries and the other one-half were classified as *other management* secretaries. Table 3:3, page 67, shows the number of top management and other management secretaries in each of the six Standard Industrial Classifications which were included in this study. Six secretaries were randomly selected from the number of secretaries in each of the 12 classifications of secretaries shown in Table 3:3: *top management* secretaries and *other management* secretaries in the (1) Manufacturing SIC; (2) Transportation, Communication, and other Public Utilities SIC; (3) Wholesale Trade SIC; (4) Retail Trade SIC; (5) Finance, Insurance, and Real Estate SIC; and (6) Services SIC.

Of the 72 secretaries who were interviewed for this study, all were female.

Question 12 asked secretaries to indicate the number of years they had been employed as a secretary in the specific large business for which they were working at the time of the interview (Question 12 - IG-S). The range of service was from less than 1 year to 39 years as a secretary in the large business for which they worked at the time of the interview. Over

50 percent of the secretaries had worked as a secretary for the company from less than one through five years. Table 4:9 shows the years of service which the secretaries had with the large businesses.

TABLE 4:9
YEARS OF SERVICE AS SECRETARIES WITH PARTICULAR LARGE BUSINESSES
N = 72

Years with Company	Number	Percent
0 - 5	37	51.4
6 - 10	12	16.7
11 - 15	3	4.2
16 - 20	6	8.3
21 - 25	6	8.3
26 - 30	6	8.3
31 - 40	2	2.8

The relatively long period of service which some of the secretaries indicated that they had completed as secretaries for the large businesses may account for some variation in the data pertaining to the same subject area which were obtained from secretaries and from personnel directors. Personnel policies within the large businesses may have changed after some of the secretaries were hired for their secretarial positions.

Question 1, directed to secretaries, asked them to indicate the system of shorthand which they used in the performance of their secretarial duties (Question 1 - IG-S).

Three-fourths, or 75 percent, of the secretaries said they used symbol shorthand in the performance of their secretarial responsibilities.

Gregg shorthand was the symbol system used by 52 or 96.3 percent of the 54 secretaries who reported the use of symbol shorthand, while 2 of the 54 secretaries used Pitman symbol shorthand.

Alphabet shorthand was used by 1 or by 1.4 percent of the 72 secretaries.

Of the 72 secretaries, 17 or 23.6 percent indicated that they did not use any system of manual shorthand on the job.

Table 4:10 shows a tabulation of the responses of the secretaries to Question 1 regarding the manual shorthand system used in their secretarial positions.

TABLE 4:10
SHORTHAND SYSTEM USED ON THE JOB
AS INDICATED BY SECRETARIES IN LARGE BUSINESSES

N = 72

Shorthand System	Number	Percent
Symbol (Gregg, Pitman, Thomas, etc.)	54	75.0
Alphabet (Forkner, Speedwriting, Stenoscript ABC, etc.)	1	1.4
Other	--	0.0
I do not use any system of manual shorthand on the job	17	23.6

In Question 2, the 17 secretaries who indicated that they did not use any system of manual shorthand on the job, as shown in Table 4:10, were asked why they did not use manual shorthand on the job (Question 2 - 1G-S). Of the 17 secretaries, 14 responded that no one dictated to them on the job, while 3 said that they did not know any system of manual shorthand.

Question 3 was directed to the three secretaries who indicated that they did not use any shorthand on the job because they did not know any system of shorthand. When asked if they felt that they would be better secretaries if they knew a shorthand system (Question 3 - IG-S), two of the secretaries answered "no" and one secretary answered "don't know."

Question 4 asked the secretaries to indicate the maximum manual shorthand speeds which they perceived were *essential* or *necessary* to fulfill the requirements of their secretarial positions (Question 4 - IG-S). The responses of the secretaries to Question 4 are shown in Table 4:11.

TABLE 4:11

MAXIMUM MANUAL SHORTHAND SPEEDS PERCEIVED ESSENTIAL OR NECESSARY TO MEET REQUIREMENTS OF PRESENT SECRETARIAL POSITIONS AS INDICATED BY SECRETARIES

N = 72

Shorthand Speed	Number of Secretaries	Percent
The use of manual shorthand is not necessary	17	23.6
Under 60 words per minute	6	8.3
60 up to 80 w.p.m.	10	13.9
80 up to 100 w.p.m.	20	27.8
100 up to 120 w.p.m.	15	20.8
120 up to 140 w.p.m.	2	2.8
140 w.p.m. and above	2	2.8

Again it is noted, as it was in Chapter I, that the ideal method for determining the necessary or essential shorthand speed required of a secretary would be to observe the dictator-secretary team in the process of the dictating and the writing of the shorthand while the process was clocked

with a stop watch. However, the impracticalities of this ideal method, for use in this study, forced an alternative method of determining the necessary or essential shorthand speeds required of secretaries. The alternative method chosen was to ask the secretaries to indicate the top manual shorthand speeds which they perceived essential to meet the shorthand speed proficiency requirements of their present secretarial positions.

Table 4:12 shows the maximum manual shorthand speeds which were perceived essential or necessary by secretaries to fulfill the requirements of their present secretarial positions as indicated by the 55 *secretaries who did use manual shorthand on the job*.

TABLE 4:12

MAXIMUM MANUAL SHORTHAND SPEEDS PERCEIVED ESSENTIAL OR NECESSARY TO MEET REQUIREMENTS OF PRESENT SECRETARIAL POSITIONS AS INDICATED BY SECRETARIES WHO USED SHORTHAND ON THE JOB

N = 55

Shorthand Speed	Number of Secretaries	Percent
Under 60 words per minute	6	10.9
60 up to 80 w.p.m.	10	18.2
80 up to 100 w.p.m.	20	36.4
100 up to 120 w.p.m.	15	27.3
120 up to 140 w.p.m.	2	3.6
140 w.p.m. and above	2	3.6

Of the 55 secretaries who indicated that they used shorthand on the job, 20 or 36.4 percent perceived the manual shorthand speed range of 80 up to 100 words per minute to be the maximum speed range which was necessary to fulfill the shorthand proficiency requirements of their jobs.

Table 4:12 also shows that of the 55 secretaries who indicated that they used shorthand on the job, 36 or 65.5 percent perceived the maximum manual shorthand speeds of less than 100 words per minute to be adequate to fulfill the shorthand speed requirements of their secretarial positions.

In Part I of this analysis of the data chapter, the mean scores which were calculated from the responses of the secretaries to Question 4, which pertained to the maximum manual shorthand speeds which they perceived were *essential* or *necessary* to fulfill the requirements of their secretarial positions, were compared for significance by use of the statistical technique called analysis of variance. These mean scores were calculated by the computer from the input cards which contained the key-punched code numbers which were assigned to the response possibilities offered to the secretaries at the time of the interviews. The response possibilities to Question 4 and the code numbers which were assigned are shown below:

<u>Question 4 Response Possibilities</u>	<u>Code Number Assigned</u>
The use of manual shorthand is not necessary	0
Under 60 words per minute	1
60 up to 80 w.p.m.	2
80 up to 100 w.p.m.	3
100 up to 120 w.p.m.	4
120 up to 140 w.p.m.	5
140 w.p.m. and above	6

Table 4:13 shows the computer-calculated mean scores which were derived from the responses of the 72 secretaries regarding shorthand speeds which they perceived were essential to fulfill the shorthand proficiency requirements of their secretarial positions. Also shown in Table 4:13 are equated shorthand speeds in words-per-minute groupings which were determined by comparing the mean scores with the assigned code numbers shown on this page.

TABLE 4:13

MEAN SCORES* DERIVED FROM RESPONSES OF 72 SECRETARIES REGARDING MAXIMUM SHORTHAND SPEEDS PERCEIVED ESSENTIAL OR NECESSARY FOR SECRETARIAL POSITIONS AND EQUATED SPEEDS IN WORDS-PER-MINUTE GROUPINGS

Secretaries	Standard Industrial Classifications						ROW MEANS
	Manufacturing Industries	Transportation, Communication, and Public Utilities	Wholesale Trade	Retail Trade	Finance, Insurance, and Real Estate	Services	
Top Management Secretaries	3.00** 80 up to 100 w.p.m.***	2.00 60 up to 80 w.p.m.	.83 under 60 w.p.m.	2.67 60 up to 80 w.p.m.	2.83 60 up to 80 w.p.m.	2.83 60 up to 80 w.p.m.	2.36 60 up to 80 w.p.m.
Other Management Secretaries	2.33 60 up to 80 w.p.m.	3.00 80 up to 100 w.p.m.	.50 under 60 w.p.m.	2.33 60 up to 80 w.p.m.	3.67 80 up to 100 w.p.m.	2.00 60 up to 80 w.p.m.	2.30 60 up to 80 w.p.m.
COLUMN MEANS	2.67 60 up to 80 w.p.m.	2.50 60 up to 80 w.p.m.	.67 under 60 w.p.m.	2.50 60 up to 80 w.p.m.	3.25 80 up to 100 w.p.m.	2.42 60 up to 80 w.p.m.	2.33**** 60 up to 80 w.p.m.

*Some mean scores shown in Table 4:13 include the assigned code number of "0" which reflects responses of 17 secretaries who indicated that they did not use shorthand on the job.

**Mean score

***Words per minute

****Grand mean

Twelve categories of secretaries are shown in Table 4:13: top management secretaries and other management secretaries in six Standard Industrial Classifications of large businesses. Of the 12 categories of secretaries, Table 4:13 shows that the secretaries in the top management category of the Manufacturing SIC and the secretaries in the other management categories of the Transportation, Communication, and Public Utilities; and Finance, Insurance, and Real Estate SICs perceived shorthand speeds in the range of 80 up to 100 words per minute, on the average, to be the maximum shorthand speeds necessary or essential to fulfill the requirements of their secretarial positions.

Secretaries in the Wholesale Trade SIC, at both the top management and at the other management levels, perceived shorthand speeds of under 60 words per minute, on the average, to be adequate shorthand speeds to fulfill the requirements of their secretarial positions.

Secretaries in the seven remaining categories, excluding row and column means, perceived shorthand speeds in the range of 60 up to 80 words per minute, on the average, to be the maximum shorthand speeds which were necessary or essential to fulfill the requirements of their secretarial positions.

Grand mean. The grand mean of 2.33, shown in Table 4:13, indicates the average of the coded responses of the 72 secretaries to Question 4. Overall, therefore, the 72 secretaries perceived shorthand speeds in the range of 60 up to 80 words per minute, on the average, to be the maximum shorthand speeds which were necessary to fulfill the requirements of their secretarial positions.

Weighted grand mean. Since analysis of variance was used to test for differences in the mean scores shown for the 12 categories of secretaries in Table 4:13, the number of secretaries who were randomly selected

from the total secretaries in each of the 12 categories was the same even though the number of secretaries in each of the 12 categories varied (see Table 3:3, page 67). The ideal design to use for analysis of variance testing is one where there is an equal number in each cell. However, to estimate the overall perceived need for manual shorthand of the total population of 2953 secretaries, a weighted grand mean was calculated and found to be 2.68 as shown in Table 4:14. The estimated weighted grand mean of 2.68 was slightly higher than the grand mean of 2.33.

TABLE 4:14

ESTIMATED WEIGHTED GRAND MEAN OF 2953 SECRETARIES
REGARDING PERCEIVED NEED FOR MANUAL SHORTHAND

Standard Industrial Classification	Total Number of Secretaries	Unweighted Column Mean	Weighted Value (Col. 2 x Col. 3)
Manufacturing Industries	1301	2.67	3473.67
Transportation, Communication, and other Public Utilities	527	2.50	1317.50
Wholesale Trade	41	.61	27.47
Retail Trade	400	2.50	1000.00
Finance, Insurance, and Real Estate	514	3.25	1670.50
Services	170	2.42	411.40
TOTAL	2953		7900.64
$\frac{7900.64}{2953} = 2.68 \text{ or estimated weighted grand mean}$			

Question 2 asked secretaries to indicate how they used manual shorthand in their present secretarial positions (Question 5 - IG-S). Table 4:15 shows how 55 secretaries said they used shorthand to perform secretarial duties.

TABLE 4:15

USES OF MANUAL SHORTHAND BY SECRETARIES TO PERFORM SECRETARIAL DUTIES

Shorthand Uses	Number Indicating Use	Percent of 55 Secretaries Who Use Manual Shorthand on the Job	Percent of 72 Secretaries in Total Sample
Correspondence	55	100.0	76.4
Telephone messages	42	76.4	58.3
Memorandums, notes, and instructions	54	98.2	75.0
Minutes of meetings and conferences	18	32.7	25.0
Other	--	0.0	0.0

The first percentage column shown in Table 4:15 shows percentages based on the 55 secretaries who said they used shorthand on the job. Percentages in the second column are based on the 72 secretaries in the sample.

Of those secretaries who used shorthand on the job, 100 percent said they used shorthand to record the dictation of letters; 98.2 percent indicated that they used shorthand to record dictated memorandums, notes, and instructions; 76.4 percent said they used shorthand to record telephone messages; and 32.7 percent used shorthand to record dictation of minutes of meetings and conferences. No other uses of shorthand were indicated by the secretaries.

Question 6 asked secretaries to indicate the minimum manual shorthand speeds which were required of them to qualify for their present positions (Question 6 - IG-S). In Part I of this chapter, the responses of the secretaries to Question 6 were compared to their responses to Question 4 to show the relationship between shorthand requirements of secretaries by employers and the use of shorthand by secretaries on the job.

Table 4:16 shows the minimum shorthand speeds required of secretaries by employers to qualify for their present secretarial positions as indicated by the secretaries.

TABLE 4:16

MINIMUM SHORTHAND SPEEDS REQUIRED BY EMPLOYERS OF SECRETARIES
TO QUALIFY FOR PRESENT SECRETARIAL POSITIONS
AS INDICATED BY SECRETARIES

N = 72

Shorthand Speed Required	Number	Percent
Knowledge of shorthand was not a requirement for present secretarial position	14	19.4
Under 60 words per minute	1	1.4
60 up to 80 w.p.m.	4	5.6
80 up to 100 w.p.m.	21	29.2
100 up to 120 w.p.m.	3	4.2
120 up to 140 w.p.m.	1	1.4
140 w.p.m. and above	1	1.4
Don't remember	4	5.6
Knowledge of shorthand was a requirement, but no specific speed	23	31.9

Table 4:16 shows that of the 72 secretaries, 14 or nearly one-fifth of the total indicated that a knowledge of shorthand was not a requirement for their present secretarial positions. Twenty-three of the secretaries said that knowledge of shorthand was a requirement for their secretarial positions, but no specific speed was required. Four of the secretaries did not remember the shorthand speed required of them by their employers in order to qualify for their present secretarial positions. Since several of the secretaries had served as secretaries for the large businesses for over 20 years (see Table 4:9), it was understandable that some secretaries did not remember the shorthand speeds required of them to qualify for their current secretarial positions.

Of those secretaries who did remember specific shorthand speeds which were required of them to qualify for their present secretarial positions, 21 or 29.2 percent indicated those speeds to be within the range of 80 up to 100 words per minute. Five of the secretaries indicated shorthand speeds of less than 80 words per minute and five of the secretaries indicated shorthand speeds of more than 100 words per minute were required of them by their employers to qualify for their present secretarial jobs.

Question 7 asked secretaries to indicate if they were ever tested by their employers to verify their shorthand abilities (Question 7 - IG-S). In Question 8 those secretaries who indicated that they had been tested were then asked to indicate the kind of shorthand test which was administered to them (Question 8 - IG-S). The responses of the secretaries to Question 7 and to Question 8 are combined in Table 4:17. Also shown in Table 4:17 are the responses to Question 3 which was directed to personnel directors and which asked them to indicate the type of shorthand test that was given to applicants for secretarial positions to verify their abilities to write shorthand (Question 3 - IG-PD).

TABLE 4:17
TYPE OF SHORTHAND TESTS ADMINISTERED TO APPLICANTS FOR SECRETARIAL POSITIONS
AS INDICATED BY 72 SECRETARIES AND BY 72 PERSONNEL DIRECTORS

Type of Test	Number of Secretaries	Percent of Secretaries	Number of Personnel Directors	Percent of Personnel Directors
No shorthand test administered	41	56.9	16	22.2
Secretary did not remember	1	1.4	--	--
Secretary wrote shorthand from dictation and then secretary read from shorthand notes to dictator	2	2.8	10	13.9
Secretary wrote shorthand from dictation and then secretary transcribed the shorthand notes while using typewriter	28	38.9	46	63.9
Other	--	0.0	--	0.0

Table 4:17 shows that of 72 secretaries, 41 or 56.9 percent indicated that they were not asked to take a shorthand test to verify their abilities to write shorthand. One secretary, or 1.4 percent of the total secretaries, did not remember taking a shorthand test. Sixteen or 22.2 percent of the personnel directors indicated, as shown in Table 4:17, that no shorthand test was administered to applicants for secretarial positions to verify the shorthand abilities of these potential secretaries.

Of those secretaries who indicated that a shorthand test was administered by their employers, 28 or 38.9 percent said that they were tested by writing shorthand from dictation and then transcribing from the shorthand notes on the typewriter. Only two or 2.8 percent of the secretaries said that they wrote shorthand from dictation and then read orally from their shorthand notes instead of transcribing from their notes.

In Table 4:17 it may be observed that more personnel directors than secretaries indicated that secretaries wrote shorthand from dictation and then transcribed their shorthand notes by using a typewriter to verify their shorthand abilities. Also, more personnel directors than secretaries indicated the method of testing the abilities of secretaries regarding knowledge of shorthand where secretaries wrote shorthand notes from dictation and then read orally from their shorthand notes instead of transcribing from their notes in written form.

Perhaps discrepancies between the responses of the secretaries and those of the personnel directors regarding the types of shorthand tests administered to applicants for secretarial positions may be accounted for, in part, by changes in personnel policies made after the secretaries who were interviewed for this study were hired for their present secretarial positions.

Question 9 asked of the secretaries pertained to their opinions regarding a relationship between starting salaries for secretaries and shorthand proficiency. Secretaries were asked to indicate if, in their opinions, there was a relationship between the starting salary to be paid to and the degree of manual shorthand proficiency possessed by an applicant for a secretarial position at the time the applicant was hired as a secretary or was promoted from within the company to a beginning secretarial position (Question 9 - IG-S). In other words, did the secretaries feel that higher shorthand speeds were rewarded with higher salaries than would be paid to applicants for secretarial positions who were capable of writing shorthand only at lower speeds? Table 4:18 reveals the responses of the secretaries to Question 9.

TABLE 4:18

OPINIONS OF SECRETARIES REGARDING RELATIONSHIP BETWEEN STARTING SALARY TO BE PAID TO AND DEGREE OF MANUAL SHORTHAND PROFICIENCY POSSESSED BY APPLICANTS FOR SECRETARIAL POSITIONS

N = 72

Response of Secretary	Number of Secretaries	Percent
There is a relationship	23	31.9
There is no relationship	33	45.8
Don't know if there is a relationship	16	22.2

Of the 72 secretaries, 33 or 45.8 percent felt that there was no relationship between increased manual shorthand proficiency and higher starting salaries to be paid to beginning secretaries. Many secretaries

stated that in order to be hired as a secretary in the large businesses by which they were employed, an applicant for a secretarial position must meet a minimum shorthand speed requirement. In their opinions, however, those applicants for secretarial positions who possessed manual shorthand speeds in excess of those minimum requirements were not rewarded with higher starting salaries. It was pointed out by several secretaries that in order to be hired as a secretary in the companies for which they worked, an applicant had to be able to meet the minimum shorthand requirements; and that since secretaries were in a higher classification than other clerical personnel, higher salaries were paid to secretaries. However, it was not the intent of this question to find out if there was a differential in the salary to be paid to a secretary based upon no knowledge of shorthand and the ability to write shorthand at the minimum speed requirement. The intent of the question was to find out if there was a differential in salary to be paid to an applicant for a secretarial position based on the ability of the applicant to write shorthand at a speed which was beyond the minimum shorthand speed which was required for a secretarial position.

Twenty-three or 31.9 percent of the secretaries felt that secretaries who possessed manual shorthand proficiency beyond the minimum shorthand speed required of an applicant for a secretarial position were rewarded with higher starting salaries. Some of the secretaries said that if higher salaries were not paid to those with higher shorthand speeds, they should be.

Sixteen or 22.2 percent of the secretaries who were interviewed said that they did not know if there was any relationship between starting salaries to be paid to secretaries and shorthand abilities beyond the minimum shorthand requirements of beginning secretaries.

Personnel directors were asked in Question 4 to indicate the relationship between the salary to be paid to and the degree of manual shorthand proficiency possessed by a secretarial applicant (Question 4 - IG-PD). Were higher degrees of manual shorthand proficiency rewarded with increased starting salaries for beginning secretaries? For example, would an applicant for a secretarial position who had the ability to write shorthand at 120 words per minute be paid more than a secretarial applicant who had the ability to write shorthand at 80 words per minute if both applicants met the minimum shorthand requirements for a beginning secretarial position?

An underlying objective of the investigator for asking these questions pertaining to the relationship between starting salary and level of shorthand ability was to provide incentives for shorthand students to strive to attain high levels of manual shorthand proficiency if higher levels of proficiency were rewarded with higher salaries on the job.

Many of the personnel directors emphasized that even when shorthand was required of a secretarial applicant in order to qualify for a secretarial position in the large businesses which they represented, the ability to write shorthand at the minimum required speed level would not be a major determinant of the salary to be paid to a secretary. They indicated that many personal traits and other qualities were considered to be as important or to be of even greater importance in the selection process of secretarial applicants for secretarial positions.

Overall, nearly 70 percent of the personnel directors indicated that there was no relationship between the starting salary to be paid to a secretary and the ability of an applicant for a secretarial position to write shorthand at a speed in excess of the minimum shorthand speed required. Table 4:19 shows the answers of personnel directors to Question 4.

TABLE 4:19

RELATIONSHIP BETWEEN STARTING SALARY AND MANUAL SHORTHAND SPEED REQUIRED OF
AN APPLICANT FOR A SECRETARIAL POSITION AS INDICATED BY PERSONNEL DIRECTORS

N = 72

View of Personnel Director	Number of Personnel Directors	Percent	Average Salary Inexperienced Secretaries (\$ per mo.)	Average Salary Experienced Secretaries (\$ per mo.)	Salary for Increased Shorthand Proficiency + Higher Education and/or Experience (\$ per mo.)
Shorthand is not required, therefore, there is <u>no relationship</u>	6	8.3		\$450.00	
Shorthand is required, but there is <u>no relationship</u>	39	54.2	\$486.15	550.39	
Shorthand may be required, but there is <u>no relationship</u>	5	6.9	462.50	653.38	
Shorthand is required and there is <u>a relationship</u>	8	11.1	395.00	539.16	\$585.14
Shorthand may be required and there is <u>a relationship</u>	14	19.4	451.60	565.67	591.86

*Percentages add to 99.9 due to rounding

Table 4:19 shows that shorthand was not required of secretaries as reported by six or 8.3 percent of the personnel directors. Therefore, there was no relationship between the level of manual shorthand proficiency possessed by an applicant for a secretarial position and the starting salary to be paid to them by these large businesses.

Shorthand was required of secretaries as indicated by 39 or 54.2 percent of the personnel directors, but they stated that there was no relationship between starting salaries to be paid to secretaries and the ability of an applicant for a secretarial position to write shorthand at speeds in excess of the minimum shorthand requirement for a secretarial position. It is important to note at this point that the reason for asking personnel directors Question 4 was to determine whether large businesses paid salary differentials based on the ability of secretarial applicants to write shorthand at speeds in excess of the minimum required speeds for secretarial positions. It was recognized by the investigator at the outset that frequently the ability to write shorthand was required of secretaries and that frequently secretaries were paid higher salaries than other clerical personnel. Therefore, the reason for asking the question was not to determine if there was a salary differential based on no ability to write shorthand and the ability to write shorthand at the minimum required speed, but to determine whether the ability to write shorthand in excess of the minimum shorthand speed requirement was rewarded with a higher salary.

Many of the personnel directors pointed out that it was the policy of the large businesses which they represented to promote employees from within the companies to secretarial positions. Applicants for secretarial positions who met the minimum manual shorthand speed requirements were

paid the same starting salaries for beginning secretaries, and no distinction in salary was based on the ability of an applicant to write shorthand at a speed which was in excess of the minimum shorthand speed required for a secretarial position. However, it was indicated by some personnel directors that when secretaries did possess shorthand speeds which were greater than the minimum shorthand speeds which were required for secretarial positions, frequently they received salary increases in a shorter period of time than did their secretarial counterparts who possessed only the minimum shorthand speeds which were required for secretarial positions.

Table 4:19 also shows that five or 6.9 percent of the personnel directors said that shorthand may be required for some secretarial positions, but that there was no starting salary differential based upon manual shorthand proficiency.

Eight personnel directors or 11.1 percent indicated that manual shorthand was required of applicants for secretarial positions in the large businesses which they represented and that there was a relationship between starting salaries to be paid to secretaries and their abilities to write shorthand.

Nearly one-fifth or 19.4 percent of the personnel directors said that manual shorthand may be required of secretaries and that the ability of a secretary to write shorthand at a speed which was higher than the minimum shorthand speed which was required for a secretarial position would be rewarded with a higher starting salary than would be paid to a secretary who could only write shorthand at the minimum speed required.

Caution should be exercised when examining the average salaries shown in Table 4:19. It should not be concluded that the salaries shown in Column 6 were related solely to the ability of secretaries to write

shorthand at speeds which were higher than the minimum shorthand speeds required for secretarial positions since personnel directors frequently stressed that salaries paid to secretaries were based on many variables - one of which might be the ability of the secretary to write manual shorthand.

In Question 10 secretaries were asked if they ever transcribed from a dictating/transcribing machine in their present secretarial positions (Question 10 - IG-S). In Question 11 those secretaries who stated that they did not currently use dictating/transcribing machines were asked if they foresaw a time in the near future when they might transcribe from dictating/transcribing machines to perform the duties of their present secretarial positions (Question 11 - IG-S). Table 4:20 shows the responses of the secretaries to Question 10 and to Question 11.

TABLE 4:20

USE OR EXPECTED USE OF DICTATING/TRANSCRIBING MACHINES
BY SECRETARIES IN PRESENT SECRETARIAL POSITIONS

N = 72

Response of Secretary	Number	Percent
Use dictating/transcribing machine in present secretarial position	25	34.7
Expect to use dictating/transcribing machine in near future in present secretarial position	5	6.9
Do not expect to use dictating/ transcribing machine in near future in present secretarial position	42	58.3

*Percentages add to 99.9 due to rounding.

Table 4:20 shows that of 72 secretaries, slightly over one-third or 34.7 percent of the secretaries reported that they did use dictating/transcribing machines in the performance of their present secretarial duties, while nearly two-thirds or 65.2 percent of the secretaries indicated that they did not currently use dictating/transcribing machines.

Of the 47 secretaries who stated that they did not currently use dictating/transcribing machines, 5 or 6.9 percent indicated that they expected to use dictating/transcribing machines in the near future in the performance of their secretarial duties.

Forty-two or 58.3 percent of the 72 secretaries did not foresee a time in the near future when they might transcribe from a dictating/transcribing machine in the performance of the duties of their present secretarial positions.

Question 15 asked the secretaries if they ever used a shorthand machine (touch shorthand) in the performance of their present secretarial duties (Question 15 - IG-S).

In Question 16 those secretaries who indicated that they did not use a shorthand machine (touch shorthand) in the performance of their present secretarial duties were asked if they foresaw a time in the near future when they might use a shorthand machine (touch shorthand) in the performance of their present secretarial duties (Question 16 - IG-S).

Of the 72 secretaries in this study, none indicated the use of a shorthand machine (touch shorthand) to perform their present secretarial duties. When asked if they foresaw a time in the near future when they would utilize a shorthand machine, 69 or 95.8 percent of the secretaries said they did not anticipate using a shorthand machine in the performance of present secretarial duties. Three or 4.2 percent of the secretaries

responded that they did not know if they would use a shorthand machine in the near future to perform the duties of their secretarial positions.

Table 4:21 exhibits the combined data gathered from the responses of the secretaries to Question 15 and to Question 16.

TABLE 4:21

USE OR EXPECTED USE OF SHORTHAND MACHINES (TOUCH SHORTHAND)
BY SECRETARIES IN PRESENT SECRETARIAL POSITIONS

N = 72

Response of Secretary	Number	Percent
Use shorthand machine (touch shorthand) in present secretarial position	--	0.0
Do not expect to use shorthand machine (touch shorthand) in near future in present secretarial position	69	95.8
Don't know if shorthand machine (touch shorthand) will be used in present secretarial position	3	4.2

Question 13 asked the secretaries to indicate the methods which their bosses used to reply to their correspondence (Question 13 - 1G-S).

It is important to recognize when observing Table 4:22 that the percentages shown are based on the number of times that secretaries indicated that their bosses utilized a particular method to reply to correspondence. For example, 64 or 88.9 percent of the 72 secretaries indicated that their bosses used the method of writing the original reply in longhand draft form and then gave the draft to the secretary for typing as *one* of the methods which their bosses utilized to reply to their correspondence. Usually, secretaries indicated that their bosses utilized more than one method to reply to correspondence.

TABLE 4:22
METHODS MANAGERS UTILIZED TO REPLY TO CORRESPONDENCE
AS INDICATED BY SECRETARIES

(In Order of Frequency Mentioned)*

N = 72

Methods	Number of Secretaries	Percent of Secretaries
Writes original reply in longhand draft form and gives to secretary for typing	64	88.9
Delegates secretary to reply	61	84.7
Dictates reply to secretary who records dictation using manual shorthand	55	76.4
Replies by using the telephone	53	73.6
Delegates someone, other than the secretary, to reply	42	58.3
Writes reply directly on the original correspondence and mails the original or copy of the original back	29	40.3
Dictates reply to dictating/transcribing machine	25	34.7
Replies by using telegrams	21	29.2
Dictates oral reply to secretary who types reply directly at typewriter	16	22.2
Other	16	22.2
Replies by using the telex	11	15.3
Boss types his own replies	4	5.6
Dictates reply to secretary who records dictation by using a shorthand machine (touch shorthand)	--	0.0

*The numbers and percentages shown in Table 4:22 are based on the number of times the secretaries indicated managers *used* a particular method to reply to correspondence. They do not indicate the extent of use.

Column 2 of Table 4:22 shows the number of secretaries who said that their bosses utilized a particular method to reply to correspondence, but Table 4:22 does not in any way indicate the extent of utilization of any of the methods by the managers. Column 3 shows the percentage of the 72 secretaries who indicated that their bosses utilized the methods shown. Following are the five methods which were most frequently mentioned by the secretaries:

Sixty-four or nearly 90 percent of the secretaries said that their bosses, to some extent, wrote original replies in longhand draft form and gave the drafts to them for typing.

Of the 72 secretaries, 61 or 84.7 percent indicated that, at times, their bosses delegated to them the responsibility of replying to the correspondence.

Of the secretaries in the sample, 55 or 76.4 percent reported that they were asked to write manual shorthand to record the dictated replies to correspondence.

Fifty-three or 73.6 percent of the secretaries said that their bosses replied to their correspondence, at times, by using the telephone.

Of the 72 secretaries, 42 or 58.3 percent said that their bosses sometimes delegated someone, other than the secretary, to handle the reply.

Less than one-half of the secretaries indicated that their bosses used the other methods of replying to correspondence shown in Table 4:22.

Secretaries were asked to indicate "other" methods used by their bosses to reply to correspondence. Sixteen or 22.2 percent of the secretaries indicated "other" ways. Of the 16 secretaries, 14 reported that sometimes managers replied to correspondence by a personal encounter, particularly when the correspondence emanated from within the company.

At the time of the interviews, the secretaries were asked to indicate whether their bosses used a particular method to reply to correspondence "Frequently," "Sometimes," "Rarely," or "Never." A cross tabulation of the responses, which were mentioned by 50 percent or more of the secretaries, is shown in Table 4:23.

TABLE 4:23

A CROSS TABULATION INDICATING EXTENT OF USE OF METHODS UTILIZED BY MANAGERS TO REPLY TO CORRESPONDENCE AS INDICATED BY 72 SECRETARIES

METHOD OF REPLYING TO CORRESPONDENCE	F R E Q U E N T L Y	S O M E T I M E S	R A R E L Y	N E V E R	
Writes original reply in longhand draft form and gives to secretary for typing	34	18	11	9	Number
	47.2	25.0	15.3	12.5	Percent
Delegates secretary to reply	26	28	7	11	Number
	36.1	38.9	9.7	15.3	Percent
Dictates reply to secretary who records dictation using shorthand	32	14	9	17	Number
	44.4	19.4	12.5	23.6	Percent
Replies by using the telephone	10	27	17	18	Number
	13.9	37.5	23.6	25.0	Percent
Delegates someone, other than the secretary, to reply	5	26	12	29	Number
	6.9	36.1	16.7	40.3	Percent

Table 4:23 shows a cross tabulation of the responses of secretaries pertaining to the extent of use of methods, which were indicated by 50 percent or more of the secretaries, used by managers to reply to correspondence.

When observing the column with the heading of "Frequently" shown in Table 4:23, it can be seen that 47.2 percent of the secretaries indicated that their bosses frequently wrote the original reply in longhand draft form and gave the draft form to the secretary to type, 44.4 percent of the secretaries indicated that their bosses frequently dictated the reply to the secretary who used manual shorthand to record the dictation, and 36.1 percent of the secretaries indicated that their bosses frequently delegated the secretary to reply to the correspondence.

By combining the percentages shown in the columns with the headings of "Frequently" and "Sometimes," it can be seen that 75.0 percent of the secretaries indicated that the method used most often by their bosses to reply to correspondence was to delegate the secretary to reply. The second most often used method, as indicated by 72.2 percent of the secretaries, was for the boss to write the original reply in longhand draft form and to give the draft form to the secretary to type, while the third most often used method, as indicated by 63.8 percent of the secretaries, was for the boss to dictate the reply to the secretary who used manual shorthand to record the dictation.

By combining the percentages shown in the "Frequently," "Sometimes," and "Rarely" Columns shown in Table 4:23, it can be seen that 76.4 percent of the secretaries indicated that their bosses called upon them to record dictation by using manual shorthand, while 23.6 percent of the secretaries indicated that their bosses never used this method to reply to correspondence.

Question 14 asked the secretaries to indicate the methods which they would prefer that their bosses would utilize to answer correspondence. (Question 14 - IG-S). Table 4:24 discloses their preferences.

TABLE 4:24

METHODS SECRETARIES INDICATED THEY WOULD PREFER MANAGERS TO USE
TO REPLY TO CORRESPONDENCE

N = 72

Method Preferred by Secretary	Number of Secretaries	Percent of Secretaries
Dictate reply to secretary who records dictation using manual shorthand	50	69.4
Write reply in longhand draft form and give to secretary to type	29	40.3
Delegate secretary to reply	28	38.9
Dictate reply to dictating/transcribing machine	16	22.2
Reply by telephone	14	19.4
Delegate someone, other than secretary, to reply	11	15.3
Other	8	11.1
Write reply directly on the original correspondence and mail the original or copy back to sender	7	9.7
Reply by using telegrams	6	8.3
Dictate oral reply to secretary who types reply directly at typewriter	4	5.6
Reply by using telex	1	1.4
Boss types his own reply	--	0.0
Dictate reply to secretary who records dictation using a shorthand machine (touch shorthand)	--	0.0

The sum of the percentages shown in Column 3 of Table 4:24 exceeds 100 percent since frequently the secretaries indicated that they preferred that their bosses would utilize more than one of the methods of replying to correspondence shown in this table.

The three methods which the secretaries mentioned most frequently as the methods which they would prefer that their bosses would utilize to reply to correspondence are identified as follows:

Nearly 70 percent of the secretaries said that they would prefer that their bosses dictate replies to correspondence to them while they recorded the dictation by using manual shorthand. More secretaries indicated a preference for this method than any of the other methods shown in Table 4:24.

Of the 72 secretaries, 29 or 40.3 percent indicated that at times they would prefer that their bosses would write the reply to correspondence in longhand draft form and then give the draft to them to type.

Twenty-eight or 38.9 percent of the secretaries indicated that they would prefer that their bosses would delegate to them the responsibility of replying to correspondence.

Less than one-third of the secretaries in the sample indicated that they would prefer that their bosses would utilize the other methods shown in Table 4:24 when replying to correspondence.

Table 4:24 shows that eight or 11.1 percent of the secretaries indicated "Other" when choosing methods which they preferred that their bosses would utilize when replying to correspondence. These secretaries had previously indicated, when asked Question 13, that their bosses used "Other" methods to reply to correspondence as shown in Table 4:22. These "Other" methods used by managers to reply to correspondence included

personal encounters with the senders of the correspondence, the use of form letters, and the use of the teletype. Table 4:24 reveals that eight of the secretaries indicated that they preferred that their bosses continue using these "Other" methods to reply to correspondence. In other words, these secretaries expressed satisfaction with the methods which they indicated that their bosses utilized to reply to correspondence.

When comparing the data shown in Table 4:22 with the data shown in Table 4:24, it can be seen that the top three methods which secretaries mentioned most often as the methods which their bosses utilized to reply to correspondence were also the top three methods which the secretaries indicated that they would prefer that their bosses would utilize to reply to correspondence, although the rank order of the top three methods differs in the two tables.

With the exception of the last method shown both in Table 4:22 and in Table 4:24, fewer secretaries indicated that they preferred the methods which their bosses utilized than they indicated that their bosses did utilize to reply to correspondence.

IV. DATA COLLECTED FROM MANAGERS

Personal interviews were conducted with 72 managers of which one-half were classified as *top managers* and the other one-half were classified as *other managers*. These managers were the managers to whom the randomly selected secretaries, who were interviewed for this study, were assigned. Twelve managers were interviewed from each of the six SICs.

Question 1, directed to the managers, asked the managers to identify the methods which they used to reply to their correspondence (Question 1 - IG-M). Their responses are exhibited in Table 4:25.

TABLE 4:25

METHODS WHICH MANAGERS INDICATED THEY USED TO REPLY TO CORRESPONDENCE

(In order of frequency mentioned)*

N = 72

Method Used by Manager	Number of Managers	Percent of Managers
Write original reply in longhand draft form and give to secretary to type	65	90.3
Reply by telephone	62	86.1
Delegate secretary to reply	61	84.7
Dictate reply to secretary who records dictation by using manual shorthand	55	76.4
Delegate someone, other than secretary, to reply	40	55.6
Write reply directly on the original correspondence and mail the original or copy back to sender	38	52.8
Reply by telegram	28	38.9
Dictate reply to dictating/transcribing machine	24	33.3
Dictate oral reply to secretary who types reply directly at typewriter	24	33.3
Reply by telex	24	33.3
Type my own reply	13	18.1
Other	9	12.5
Dictate reply to secretary who records dictation by using shorthand machine (touch shorthand)	--	0.0

*Numbers shown in this table reflect the number of times that managers indicated that they *used* a particular method to reply to correspondence, but do not indicate the extent of use. Managers often used more than one method to reply to correspondence.

Column 2 of Table 4:25 indicates the number of managers who said that they used each of the particular methods to reply to correspondence, but it is important to recognize that this column in no way indicates the extent of the utilization of any of the methods shown in this table.

Column 3 of Table 4:25 shows the percentage of the 72 managers who said that they used each of the particular methods. The six methods which were used by 50 percent or more of the managers are indicated below:

Sixty-five or 90.3 percent of the 72 managers indicated that, at times, they wrote the original reply to correspondence in a longhand draft form and then gave the draft form to the secretary to type.

Sixty-two or 86.1 percent of the managers said that sometimes they used the telephone to reply to correspondence, while 61 or 84.7 percent reported that to some extent they delegated the task of replying to correspondence to their secretaries.

Of the 72 managers, 55 or 76.4 percent indicated that, at times, they dictated replies to correspondence to their secretaries who recorded the dictation by using manual shorthand.

Forty or 55.6 percent of the managers said that, on some occasions, they delegated someone, other than the secretary, to reply to correspondence; while 38 or 52.8 percent said that, in some instances, they wrote the reply to correspondence directly on the original incoming correspondence and then mailed the original or a copy of the original back to the sender.

The other methods of replying to correspondence, which are shown in Table 4:25, were used by less than 50 percent of the managers.

Nine managers indicated "Other" methods were used to reply to correspondence which included face-to-face contacts with the sender and the use of the teletype.

Managers were asked to indicate how often they used the methods which they indicated use of in Table 4:25. The following choices were offered during the interviews: "Frequently," "Sometimes," "Rarely," or "Never." A cross tabulation showing extent of use of the methods which were mentioned by 50 percent or more of the managers is shown in Table 4:26.

TABLE 4:26

A CROSS TABULATION INDICATING EXTENT OF USE OF METHODS WHICH 72 MANAGERS INDICATED THEY USED TO REPLY TO CORRESPONDENCE

METHOD OF REPLYING TO CORRESPONDENCE	F R E Q U E N T L Y	S O M E T I M E S	R A R E L Y	N E V E R	
Write original reply in longhand draft form and give draft form to secretary to type	19	35	11	7	Number
	26.4	48.6	15.3	9.7	Percent
Reply by telephone	10	40	12	10	Number
	13.9	55.6	16.7	13.9	Percent
Delegate secretary to reply	12	37	12	11	Number
	16.7	51.4	16.7	15.3	Percent
Dictate reply to secretary who records dictation using manual shorthand	30	17	8	17	Number
	41.7	23.6	11.1	23.6	Percent
Delegate someone, other than the secretary, to reply	4	25	11	32	Number
	5.6	34.7	15.3	44.4	Percent
Write reply directly on original correspondence and mail original or copy back to sender	2	13	23	34	Number
	2.8	18.1	31.9	47.2	Percent

Table 4:26 shows a cross tabulation of the responses of the managers regarding the extent of use of the methods, which were indicated by 50 percent or more of the managers, that were used to reply to correspondence.

When observing the column with the heading of "Frequently" shown in Table 4:26, it can be seen that 30 or 41.7 percent of the 72 managers indicated that they frequently dictated replies to correspondence to their secretaries who recorded the dictation by using manual shorthand. Of the six methods used to reply to correspondence shown in Table 4:26, this method was used more "frequently" than was any other method. However, this method was "frequently" used by less than half of the managers.

The method of writing the original reply in longhand draft form and then giving the draft form to the secretary for typing was used "frequently" by 19 or 26.4 percent of the managers, while 12 or 16.7 percent of the managers "frequently" used the method of delegating the task of replying to correspondence to their secretaries.

By combining the percentages shown in the columns with the headings of "Frequently" and "Sometimes," it can be seen that 75.0 percent of the managers indicated that they most often wrote the original reply in longhand draft form and then gave the draft form to the secretary to type.

Nearly 70 percent of the managers indicated that they "frequently" or "sometimes" answered correspondence by using the telephone, while 68.1 percent of the managers delegated the task of replying to correspondence to their secretaries either "frequently" or "sometimes."

Of the 72 managers, 47 or 65.3 percent said they dictated replies to correspondence to their secretaries who recorded the dictation in shorthand either "frequently" or "sometimes."

In Question 2, managers were asked to indicate the methods which they would prefer to use to reply to correspondence (Question 2 - IG-M). Their responses are tabulated in Table 4:27.

TABLE 4:27

METHODS MANAGERS INDICATED THAT THEY WOULD PREFER TO USE
WHEN REPLYING TO CORRESPONDENCE

N = 72

Method Preferred by Manager	Number of Managers	Percent of Managers
Dictate reply to secretary who records dictation using manual shorthand	52	72.2
Delegate secretary to reply	41	56.9
Write original reply in longhand draft form and give to secretary for typing	33	45.8
Reply by telephone	29	40.3
Dictate reply to dictating/transcribing machine	18	25.0
Delegate someone, other than secretary, to reply	18	25.0
Write reply directly on original correspondence and mail the original or copy back to sender	16	22.2
Dictate oral reply to secretary who types reply directly at typewriter	12	16.7
Reply by telegram	10	13.9
Other	9	12.5
Reply by telex	8	11.1
Type my own reply	3	4.2
Dictate reply to secretary who records dictation using a shorthand machine (touch shorthand)	--	0.0

Table 4:27 reveals that of the various methods which managers might have used to reply to correspondence, the method which was chosen by more of the managers than was any other method was that of dictating the reply to the secretary who used manual shorthand to record the dictation. Of 72 managers, 52 or 72.2 percent indicated that this method was among the methods which they preferred to use when replying to correspondence.

Most of the managers expressed a preference for more than one method to be used to reply to correspondence and, therefore, the sum of the percentages shown in Table 4:27 exceeds 100 percent. The percentage which is associated with any particular method shown in this table should not be interpreted to mean an exclusive preference for that particular method, but only indicates the percentage of managers who included that method among their preferences.

Forty-one or 56.9 percent of the managers indicated that, at times, they preferred to delegate to their secretaries the responsibility of replying to correspondence.

Of the 72 managers, 33 or 45.8 percent indicated that they preferred, in some instances, to write the original reply to correspondence in longhand draft form and then give the draft form to the secretary to type.

Twenty-nine or just over 40 percent of the managers preferred to reply to correspondence by use of the telephone on some occasions.

Less than one-third of the managers expressed a preference for the other methods of replying to correspondence shown in Table 4:27.

A comparison of Table 4:25, which shows the methods which managers indicated that they utilized to reply to correspondence, with Table 4:27, which shows the methods which managers indicated that they would prefer to utilize to reply to correspondence, reveals that the four methods which more managers indicated that they used are the same methods which more

managers indicated that they would prefer to use when replying to their correspondence, but the rank order of the four methods differs in the two tables.

When comparing Table 4:25 with Table 4:27, it can be seen that 55 or 76.4 percent of the managers indicated that, at times, they dictated the reply to correspondence to their secretaries who used manual shorthand; while 52 or 72.2 percent of the managers indicated that they preferred, at times, to use this method.

Question 3, directed to managers, asked the managers to indicate whether, if they were to hire a new secretary, they would hire a secretary who had no proficiency in manual shorthand (Question 3 - IG-M). Table 4:28 reveals the responses of the managers to this question.

TABLE 4:28

RESPONSES OF MANAGERS REGARDING THE HIRING OF SECRETARIES
WHO HAVE NO PROFICIENCY IN MANUAL SHORTHAND

N = 72

Response of Manager	Number	Percent
<u>Would hire</u> new secretary without manual shorthand proficiency	24	33.3
<u>Would not hire</u> new secretary without manual shorthand proficiency	48	66.7

Table 4:28 shows that one-third of the managers, of which 10 were classified as top managers and 14 were classified as other managers, responded that if they were hiring a new secretary, they would hire a secretary who had no manual shorthand proficiency. However, two-thirds of the managers said that if they were hiring a new secretary, they would not hire a secretary who did not have manual shorthand proficiency.

Managers were asked to indicate why they would or why they would not hire a secretary who did not have proficiency in manual shorthand (second part of Question 3). Table 4:29 reveals why managers indicated they would hire a new secretary who had no proficiency in manual shorthand.

TABLE 4:29

REASONS WHY MANAGERS WOULD HIRE A SECRETARY WHO HAD NO
PROFICIENCY IN MANUAL SHORTHAND

N = 24

Reason	Number	Percent
Dislike or have no need to dictate	9	37.5
Consider other qualities, both technical and personal, more important	8	33.3
Prefer using dictating/transcribing machine	7	29.2
Consider dictating too time consuming	2	8.3

*Sum of percentages exceeds 100 percent since some managers gave more than one reason why they would hire a secretary who had no proficiency in manual shorthand.

Reasons Given by 24 Managers Why They Would Hire a New Secretary Who Had No Proficiency in Manual Shorthand

(1) Nine or 37.5 percent of the managers said they would hire a new secretary who had no proficiency in manual shorthand because they either disliked or had no need to dictate.

(2) One-third of the managers revealed that they would hire a new secretary who had no proficiency in manual shorthand because they considered other qualities in a secretary to be more important. Of these eight managers, some stressed that it was of greater importance to them

that the secretary be a good typist or be able to compose letters than that the secretary be able to write manual shorthand. Other qualities which these managers felt were important for a secretary to possess, and which they deemed to be of more importance than would be the ability of the secretary to write shorthand, included the following: Intelligence, loyalty, getting work done on time, having a good memory, good organizational abilities, attention to detail, initiative, and punctuality.

(3) Of the 24 managers, 7 or 29.2 percent stated that they would hire a new secretary who had no proficiency in manual shorthand because they preferred to use a dictating/transcribing machine. They indicated that they felt that the use of a dictating/transcribing machine saved time in that it permitted the secretary to be doing other things while the dictator used the dictating/transcribing machine. It was their feeling that the use of the traditional dictator-secretary team to give and to take dictation was an inefficient method to utilize to reply to correspondence since the time of two people was consumed during the dictation process.

(4) Two or 8.3 percent of the 24 managers who indicated that they would hire a new secretary who had no proficiency in manual shorthand thought that dictating to a secretary was time consuming and said that time did not permit them to sit and dictate letters.

Reasons Given by 48 Managers Why They Would Not Hire a Secretary Who Had No Proficiency in Manual Shorthand

Of the 72 managers, 48 or 66.7 percent indicated that if they were to hire a new secretary, they would not hire one who did not have proficiency in manual shorthand.

Table 4:30 summarizes the reasons why 48 managers said that if they were to hire a new secretary, they would not hire one who had no proficiency in manual shorthand.

TABLE 4:30

REASONS WHY MANAGERS WOULD NOT HIRE A SECRETARY WHO HAD NO
PROFICIENCY IN MANUAL SHORTHAND

N = 48

Reason	Number	Percent*
Enables more efficient handling of management responsibilities	16	33.3
Indicates better secretary	11	22.9
Prefer to dictate to secretary	9	18.8
Facilitates communication	8	16.7
(Gave no reason)	5	10.4
Resist use of dictating/transcribing machine	3	6.3
Provides flexibility	2	4.2
Other	2	4.2

*Sum of percentages exceeds 100 percent since some managers gave more than one reason why they would not hire a secretary who had no proficiency in manual shorthand.

When asked why they would not hire a secretary who had no shorthand proficiency, the 48 managers gave the following reasons:

(1) Of the 48 managers, 16 or 33.3 percent said that they could handle their management responsibilities more efficiently when their secretaries were able to write shorthand. They felt that when the secretary utilized the ability to write shorthand that it conserved time and was a convenience for them.

(2) Eleven or 22.9 percent of the managers stated that when a secretary had the capability of writing shorthand, that this secretary was a "better" secretary for the following reasons: knowledge of shorthand skill is indicative of the secretary's total capability; knowledge of shorthand indicates initiative on the part of the secretary; the secretary who knows shorthand is more efficient and accurate; the secretary who has the ability to write shorthand brings added commitment to the secretarial position; and knowledge of shorthand indicates that the secretary has a good educational background for a secretarial position.

(3) Nine or 18.8 percent of the managers said that they would not hire a new secretary who had no ability to write shorthand because they preferred to dictate to a secretary rather than to a machine. Some of these respondents expressed that they felt a strong psychological barrier when dictating to an inanimate object like a microphone rather than dictating vis-à-vis to a secretary.

(4) Of the 48 managers, 8 or 16.7 percent reported that they would not hire a secretary who was unable to write shorthand because they felt that the use of shorthand by the secretary facilitated the communication process. They preferred to use the dictator-secretary team in the giving and the recording of dictation because they said that it was easier to edit or modify that which was dictated because the secretary could provide an immediate "readback" of the dictation, and because they sought the reaction of the secretary to that which was dictated.

(5) Five or 10.4 percent of the 48 managers stated that they would not hire a secretary who did not write shorthand, but they gave no specific reason for this choice.

(6) Three or 6.3 percent of the managers indicated that they would not hire a secretary who could not write shorthand because they preferred to dictate, but they resisted the use of mechanical equipment such as dictating/transcribing machines.

(7) Two or 4.2 percent of the 48 managers who said that they would not hire a secretary who had no proficiency in manual shorthand because they felt that when the secretary could utilize shorthand skill that this enabled greater flexibility in the execution of the manager's responsibilities.

(8) Two managers expressed "other" reasons for not hiring secretaries who lacked the ability to write shorthand. One manager said that he would not hire a secretary who had no shorthand proficiency because the expense of a dictating/transcribing machine could not be justified, and one manager felt that a secretary should be required to have skill in shorthand because of the high salary demands made by secretaries.

V. SUMMARY - PART II

Part II of this analysis of the data chapter presented another interpretation of the data which were collected from personal interviews with managers, personnel directors, and randomly selected secretaries. In the second part of Chapter IV, these data were presented often in tabular form with frequency counts and percentages of responses of those interviewed for the benefit of those who prefer to examine data in this manner.

Generally, the presentation of the data found in the latter part of this chapter, which was devoted to an analysis of the data, followed the

sequence of the questions which are shown in the interview guides for the secretaries (Appendix A), managers (Appendix B), and personnel directors (Appendix C).

Major Findings in Part II:

1. When personnel directors indicated that shorthand was required of secretaries, 15.3 percent specified symbol shorthand exclusively; 41.7 percent said either symbol or alphabet shorthand was acceptable while 4.2 percent indicated that symbol, alphabet, or machine shorthand were acceptable systems. Six or 8.3 percent of the personnel directors indicated that shorthand was not a requirement of secretaries for secretarial positions.

2. A grand mean of 2.71, which was derived from the numerically coded responses of the personnel directors, indicated that, on an average, shorthand speeds of 60 up to 80 words per minute were required of secretaries at the time that they were hired for secretarial positions in each of the six Standard Industrial Classifications of business which were included in this study.

3. Of those personnel directors who indicated that shorthand proficiency was required of secretaries in the large businesses, which they represented, shorthand speeds of 80 up to 100 words per minute, on an average, were required.

4. The mode in the range of shorthand speeds which personnel directors indicated were required of secretaries was 80 up to 100 words per minute since 44 of the 72 personnel directors chose this speed range.

5. Both symbol and alphabet shorthand systems were used by the gainfully employed secretaries who were within the scope of this study.

Of the 55 secretaries who indicated that they used shorthand on the job, 98.2 percent said that they used symbol shorthand, and the system of symbol shorthand used by 96.3 percent of the secretaries was the Gregg shorthand system.

6. Of 72 secretaries, 55 or 76.4 percent used shorthand in the performance of their secretarial duties, while 17 or 23.6 percent did not use manual shorthand in their secretarial positions.

7. An *overall* grand mean of 2.33, which was derived from the numerically coded responses of the 72 secretaries regarding the top shorthand speeds which they perceived were necessary for their secretarial positions, indicated that, on an average, shorthand speeds of 60 up to 80 words per minute were the speeds which the secretaries perceived were needed to perform their secretarial duties.

8. Of 55 *secretaries who indicated that they used shorthand on the job*, a mean of 3.05 indicated that, on an average, shorthand speeds of 80 up to 100 words per minute were equal to the dictation rates which they encountered in the performance of their secretarial duties.

9. A *weighted grand mean* of 2.68 was estimated for the population of 2953 secretaries which indicated that *overall* it was estimated that secretaries needed manual shorthand speeds of 60 up to 80 words per minute to fulfill the shorthand speed requirements they would need in secretarial positions in large businesses.

10. Of 72 secretaries, 44.4 percent indicated that the managers to whom they reported dictated to them "frequently," 19.4 percent indicated "sometimes," and 12.5 percent said "rarely," while they recorded the dictation by writing manual shorthand.

11. Of 72 managers, 41.7 percent indicated that they dictated "frequently," 23.4 percent indicated "sometimes," and 11.1 percent indicated "rarely," while their secretaries recorded the dictation by writing manual shorthand.

12. Fifty or 69.4 percent of the secretaries indicated a preference for taking dictation from managers by writing manual shorthand as a method of replying to correspondence.

13. Fifty-two or 72.2 percent of the managers indicated a preference for dictating to secretaries who recorded the dictation by using manual shorthand as a method of replying to correspondence.

14. Twenty-four or 33.3 percent of 72 managers indicated that, if they were to hire a new secretary, they would hire a secretary who had no shorthand proficiency; while 48 or 66.7 percent of the managers indicated that, if they were to hire a new secretary, they would not hire a secretary who had no shorthand proficiency.

15. Nearly 70 percent of the personnel directors indicated that there was no relationship between the starting salary to be paid to a secretary and the ability of an applicant for a secretarial position to write shorthand at a speed which was in excess of the minimum shorthand speed required of a secretary for a secretarial position.

16. Of the 72 secretaries, 34.7 percent indicated that they used dictating/transcribing machines in their present secretarial positions.

CHAPTER V

SUMMARY

I. PROBLEM PURPOSE, AND PROCEDURES

Section I of Chapter V presents an overview of the problem, purpose, and procedures of this research.

Problem

The principal problem of this study was to determine if secretaries employed by large businesses need and use the skill of manual shorthand to perform their secretarial duties.

Subproblems, which were related to the main problem, were: (1) to determine if there were differences in the degrees of manual shorthand proficiency which secretaries perceived were needed when working for *top management* versus the degrees of manual shorthand proficiency which secretaries perceived were needed when working for *other management*, (2) to determine by Standard Industrial Classifications of business the differences in the degrees of manual shorthand proficiency needed by secretaries as perceived by secretaries who worked for large businesses within these SIC classifications, (3) to determine by Standard Industrial Classifications of business the differences in the degrees of manual shorthand proficiency required of secretaries who worked for large businesses within these SIC classifications as indicated by personnel directors, (4) to determine the differences between the degrees of manual shorthand proficiency required of secretaries at the time that they were hired as indicated by personnel

directors and the degrees of manual shorthand proficiency needed by secretaries on the job as perceived by secretaries, (5) to determine the differences between the degrees of manual shorthand proficiency which secretaries indicated were required of them at the time that they were hired and the degrees of manual shorthand proficiency needed by secretaries as perceived by secretaries on the job, (6) to find which of the systems of manual shorthand were used by secretaries, and (7) to determine relationships between practices of managers and preferences of managers and secretaries when replying to correspondence.

Purpose

The purpose of the study was to provide information which could lead to an improvement of secretarial-training programs and to provide data which could enable more effective guidance of those individuals who are considering preparation for secretarial positions.

Since the attainment of a high level of shorthand proficiency ordinarily takes from one to two years of study and since there are many demands on the time of the secretarial student, this study sought to determine whether the subject of shorthand is needed in the curriculum for those who seek secretarial positions in large businesses.

Procedures

The normative-survey method, using personal interviews as the data-collecting techniques, was used to collect the data from employees of 117 large businesses which were headquartered in the Michigan cities of Detroit, Highland Park, and Hamtramck.

Only large businesses which were classified in the six Standard Industrial Classifications of Manufacturing Industries; Transportation, Communication, and other Public Utilities; Wholesale Trade; Retail Trade; Finance, Insurance, Real Estate; and Services were included in this study.

All secretaries were identified in each of the 117 large businesses and were stratified into two classifications: *top management secretaries* and *other management secretaries*.

Personal interviews were held with 72 secretaries who were randomly selected from a population of 2953 secretaries, 72 managers to whom the 72 randomly selected secretaries reported, and 40 personnel directors who represented the large businesses from which the secretaries were randomly selected.

Interview Guides

Three interview guides were constructed by the investigator and used to promote some standardization and objectivity during the interviews with the secretaries, managers, and personnel directors.

Analysis of the Data

The data, which were collected during the personal interviews with the secretaries, managers, and personnel directors, were numerically coded. These code numbers were punched into IBM cards for analysis on a Control Data 6500 computer which was located in the Computer Center at Michigan State University.

Two-way analysis of variance was used to analyze differences in the levels of manual shorthand proficiency which were perceived needed by those

secretaries who worked for *top management* versus the levels of manual shorthand proficiency which were perceived needed by those secretaries who worked for *other management* and the levels of manual shorthand proficiency which were perceived needed by the secretaries within any one of the Standard Industrial Classifications and the levels of manual shorthand proficiency which were perceived needed by the secretaries in any one of the other Standard Industrial Classifications.

One-way analysis of variance was used to analyze differences in the levels of shorthand proficiency required of secretaries by large businesses as indicated by personnel directors in six Standard Industrial Classifications of business.

The statistical technique of Pearson product-moment correlation was used to assess the relationship between the levels of manual shorthand proficiency needed on the job as perceived by secretaries and the levels of manual shorthand proficiency required of secretaries at the time that they were hired as indicated by personnel directors. This statistical technique was also used to assess the relationship between the levels of manual shorthand proficiency required of the secretaries at the time that they were hired for their present secretarial positions as indicated by the secretaries and the levels of manual shorthand proficiency which the secretaries perceived they needed on the job.

Chi-square analysis was used to compare the differences between the expected frequencies and the observed frequencies of those secretaries who used symbol shorthand and those secretaries who used alphabet shorthand in the performance of their secretarial duties.

Spearman's rank-difference correlation was used to determine the relationship between the preferences and the practices of the managers and the secretaries regarding methods of replying to correspondence.

II. MAJOR FINDINGS

In synopsis form, the major findings of this study are identified below:

1. Shorthand was used by 76.4 percent of the secretaries who were within the scope of this study, while 23.6 percent of the 72 secretaries indicated that they did not use and did not need manual shorthand in the performance of their secretarial duties.

2. Both symbol and alphabet shorthand systems were used by the secretaries who were interviewed for this study. Of 55 secretaries who indicated that they used shorthand on the job, 98.2 percent said that they used symbol shorthand, and the Gregg shorthand system was used by 96.3 percent of those who used a symbol shorthand system.

3. There was no significant difference in the degrees of manual shorthand proficiency needed by secretaries as perceived by secretaries who worked for *top management* and the degrees of manual shorthand proficiency needed by secretaries as perceived by secretaries who worked for *other management*.

4. There was a significant difference in the degrees of manual shorthand proficiency needed by secretaries as perceived by secretaries who worked for large businesses within any one of the six Standard Industrial Classifications of business included in this study when compared to the degrees of manual shorthand proficiency needed by secretaries

as perceived by secretaries who worked for large businesses within any one of the other Standard Industrial Classifications of business included in this study. Analysis of variance did not identify where the differences were, but it was thought, based upon Scheffé post hoc analysis, that perhaps the secretaries in the Wholesale Trade SIC perceived the degrees of manual shorthand proficiency needed by secretaries to be significantly different from the degrees of manual shorthand proficiency needed by secretaries as perceived by the secretaries in the remaining five SICs.

5. There was no significant difference in the minimum manual shorthand speeds which were required of secretaries at the time they were hired as indicated by personnel directors who represented the large businesses within any one of the six Standard Industrial Classifications of business included in this study and the minimum manual shorthand speeds which were required of secretaries by the personnel directors who represented large businesses within any of the other Standard Industrial Classifications of business included in this study.

6. Based on a calculated correlation coefficient, there was no significant relationship between the maximum manual shorthand speeds which secretaries perceived were needed on the job and the minimum manual shorthand speeds which personnel directors indicated were required of secretaries at the time that they were hired for their secretarial positions.

7. A grand mean of 2.33 indicated that, on an average, shorthand speeds of 60 up to 80 words per minute were the shorthand speeds which the 72 secretaries perceived were needed to perform their secretarial duties.

8. Of the 55 *secretaries who indicated that they used shorthand on the job*, a mean score of 3.05 indicated that, on an average, shorthand

speeds of 80 up to 100 words per minute were equal to the dictation rates which they perceived that they encountered in the performance of their secretarial duties.

9. A *weighted grand mean* of 2.68 was estimated for the population of 2953 secretaries which indicated that, on an average, secretaries needed manual shorthand speeds of 60 up to 80 words per minute to match the dictation rates they would encounter in secretarial positions in large businesses.

10. A grand mean of 2.71 indicated that, on an average, shorthand speeds of 60 up to 80 words per minute were the shorthand speeds which the personnel directors indicated were required of secretaries at the time that they were hired.

11. The mode of the shorthand speed ranges which personnel directors indicated were required of secretaries to qualify for secretarial positions was 80 up to 100 words per minute since 44 or 60.1 percent of the personnel directors chose this speed range.

12. There was a significant positive relationship between the minimum manual shorthand speeds required of secretaries at the time that they were hired for their present secretarial positions as indicated by the secretaries and the maximum manual shorthand speeds which they perceived were essential or necessary for their present secretarial positions.

13. There were significant positive relationships between: (1) methods which managers practiced and methods which they preferred to practice, (2) methods which managers practiced and methods which secretaries preferred managers to practice, and (3) methods which managers indicated they preferred to practice and methods which secretaries indicated they preferred managers to practice when replying to correspondence.

III. OTHER FINDINGS

1. When personnel directors indicated that shorthand was required of secretaries, 15.3 percent specified symbol shorthand exclusively, while 41.7 percent said either symbol or alphabet shorthand was acceptable. Six or 8.3 percent of the personnel directors indicated that shorthand was not required of secretaries for secretarial positions.

2. Of 72 secretaries, 44.4 percent indicated that managers, to whom they reported, "frequently" dictated to them while they recorded the dictation by writing manual shorthand, 19.4 percent indicated "sometimes," and 12.5 percent indicated "rarely."

3. Of 72 managers, 41.7 percent indicated that they "frequently" dictated to their secretaries while the secretaries recorded the dictation by using manual shorthand; 23.6 percent indicated "sometimes," and 11.1 percent indicated "rarely."

4. Fifty or 69.4 percent of the secretaries indicated a preference for taking dictation from managers by writing manual shorthand as a method of replying to correspondence.

5. Fifty-two or 72.2 percent of the managers indicated a preference for dictating to secretaries who recorded the dictation by using manual shorthand as a method of replying to correspondence.

6. Twenty-four or 33.3 percent of 72 managers indicated that, if they were to hire a new secretary, they would hire a secretary who had no shorthand proficiency.

7. Nearly 70 percent of the personnel directors indicated that there was no relationship between the starting salary to be paid to a secretary and the ability of an applicant for a secretarial position to

write shorthand at a speed which was in excess of the minimum shorthand speed required for a secretarial position.

8. Of the 72 secretaries, 34.7 percent indicated that they used dictating/transcribing machines in their present secretarial positions.

IV. CONCLUSIONS

1. Shorthand should be retained in the secretarial curriculum designed to prepare individuals for secretarial positions in large businesses since it was found that secretaries used manual shorthand in the performance of their secretarial duties at both the *top level of management* and at the *other levels of management* and since secretaries used manual shorthand in large businesses which were classified in each of the six Standard Industrial Classifications of business included in this study.

2. On the basis of speed attainment, candidates for secretarial positions who attain shorthand speeds in the speed range of 80 up to 100 words per minute could qualify, in general, for these positions in large businesses which were classified in each of the six Standard Industrial Classifications of business included in this study.

3. Although a knowledge of shorthand is important for a majority of secretaries, shorthand speeds in excess of 120 words per minute are not essential for the majority of secretaries employed by large businesses.

4. Although mean scores would suggest that personnel directors and secretaries were in agreement on shorthand speeds needed by secretaries, there was *no significant correlation* between the responses of the two groups which indicated that there was considerable variance in the responses of the two groups regarding the degree of manual shorthand proficiency needed by secretaries on the job.

The responses of the personnel directors pertaining to shorthand speeds needed by secretaries were more concentrated in the speed range of 80 up to 100 words per minute, which probably reflected broad personnel policies of those companies which applied, in general, to all applicants for secretarial positions. However, the responses of the secretaries pertaining to the degree of shorthand proficiency which they perceived was necessary on the job showed a wider distribution of shorthand speed ranges than that of the personnel directors since some secretaries found that on the job they needed shorthand speeds which were in excess of those which were required of them to obtain their secretarial positions, while others found that they did not use shorthand at all in the performance of their secretarial duties.

5. The methods which managers practice when replying to correspondence will determine, to a great extent, the need for and use of shorthand by secretaries.

6. Secretaries could probably adequately fulfill the requirements of nearly one-fourth of the secretarial positions to be found in the large businesses included in this study without using manual shorthand. However, secretaries without shorthand ability might be denied these secretarial positions because of personnel policies which require a demonstration of shorthand proficiency of *all* secretarial applicants.

7. There appears to be a slight decline in the percentage of secretaries who indicated that they used manual shorthand in the performance of their secretarial duties when the findings of this study, which revealed that 76.4 percent of the secretaries said they used shorthand, are compared to an average percentage of 80.5 percent of the secretaries who indicated

that they used manual shorthand on the job as revealed by the findings of ten research studies as shown in Table 2:1.

8. Even though secretaries use technological innovations such as dictating/transcribing machines and even though word processing systems have been installed in some firms, the majority of secretaries still need and use the skill of manual shorthand.

V. RECOMMENDATIONS

1. All aspirants for secretarial positions in large businesses should study shorthand and should attain shorthand speeds in the range of 80 up to 100 words per minute to provide for mobility when seeking secretarial positions and to provide for flexibility within the company after having obtained a secretarial position.

2. Since gainfully employed secretaries in this study used either symbol or alphabet shorthand systems and since experimental studies by Horlacher¹ and by Weber² revealed that Stenoscript alphabet shorthand students achieved higher shorthand speeds than did Gregg symbol shorthand students at shorthand speeds of 60 up to 80 words per minute, and Horlacher found that there was no significant difference between the two groups at the shorthand speed of 100 words per minute, it is recommended that courses in alphabet shorthand, as well as symbol shorthand, be included in the curriculum which has been designed for the training of secretaries for large businesses to provide them with a choice of shorthand systems.

¹Floyd Kent Horlacher, "A Comparison of the Learning Progress in Stenoscript Alphabet Shorthand and Gregg (DJ) Symbol Shorthand After Two Semesters of Instruction" (unpublished Doctor's dissertation, Arizona State University, 1969).

²Janet Rae Weber, "An Experimental Study to Compare Productivity of Stenoscript ABC Shorthand with Gregg Shorthand" (unpublished Master's thesis, University of Colorado, 1968).

3. Prognostic research should be continued to predict which students will succeed in learning symbol shorthand and similar research should be initiated or continued to predict which students will succeed in learning alphabet shorthand in order to provide for better counseling and guidance for those who aspire to secretarial positions so that the best use of their time can be made when they train for their chosen careers.

4. This study should be replicated in other parts of the country, in large businesses which employ fewer than 250 employees, and in large businesses which exceed the delimitations of this study, such as foreign corporations; professional and consulting organizations; *e.g.* hospitals, educational institutions, and engineering services; and other types of financial and insurance institutions.

5. Advisory committees with rotating memberships of representatives from businesses which employ large numbers of secretaries should be established or continued to provide educators in secretarial-training programs with up-to-date information regarding current business practices and needs. The membership of these committees should be changed periodically to provide for variation in the classification of businesses which are represented by the committee members.

6. Since secretaries employed in large businesses may represent a small proportion of all secretaries employed, it is recommended that a study of the need for and use of shorthand by secretaries in businesses other than large businesses be undertaken.

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APPENDIX A

Interview Guide - Secretaries

INTERVIEW GUIDE

(Secretary)

1. Which one of the following systems of manual shorthand do you use on the job?

- a) symbol (Gregg, Pitman, Thomas, etc.)
- b) alphabet (Forkner, Speedwriting, Stenoscrypt ABC, etc.)
- c) other
- d) I do not use any system of manual shorthand on the job

*If a, b, or c was chosen as the answer to Question #1, go directly to Question #4, page 2. (Omit Questions #2 and #3.)

**If d was chosen as the answer to Question #1, answer Questions #2 and #3 below.

2. If the answer to Question #1 was d) I do not use manual shorthand on the job, why do you not use manual shorthand?

- a) I do not know a system of manual shorthand
- b) No one dictates to me on the job
- c) Other (please explain)

3. If the answer to Question #2 is a) I do not know a system of manual shorthand, do you feel that you would perform your secretarial duties better if you did know and use manual shorthand on the job?

- a) yes
- b) no
- c) don't know

*If the answer to Question #1 is d) I do not use manual shorthand on the job, omit Questions #4 and #5, page 2.

4. What is the top manual shorthand speed that you feel is *essential* or *necessary* to fulfill the requirements of your present secretarial position?
- a) the use of manual shorthand is not necessary
 - b) under 60 w.p.m.
 - c) 60 up to 80 w.p.m.
 - d) 80 up to 100 w.p.m.
 - e) 100 up to 120 w.p.m.
 - f) 120 up to 140 w.p.m.
 - g) 140 w.p.m. and above
5. How do you *use* manual shorthand in the performance of your present secretarial duties?
- a) correspondence
 - b) telephone messages
 - c) memorandums/notes/instructions
 - d) minutes of meetings/conferences
 - e) other (please specify other uses of shorthand in your secretarial position)
6. What was the minimum shorthand speed required by your employer in order for you to qualify for your *present* secretarial position?
- a) knowledge of shorthand was not a requirement for my present secretarial position
 - b) under 60 w.p.m.
 - c) 60 up to 80 w.p.m.
 - d) 80 up to 100 w.p.m.
 - e) 100 up to 120 w.p.m.
 - f) 120 up to 140 w.p.m.
 - g) 140 w.p.m. and above
 - h) don't remember
 - i) knowledge of shorthand was a requirement, but no specific speed

Please indicate the specific speed required if you recall _____

7. Were you ever tested for your shorthand ability by your present employer?
- a) yes
 - b) no
 - c) don't remember

*If the answer to Question #7 is a) yes, answer Question #8.

**If the answer to Question #7 is b) no, omit Question #8.

8. What kind of manual shorthand test was administered by your present employer?

- a) I was given some dictation and asked to read it back
- b) I was given some dictation and asked to transcribe my notes
- c) Other (please indicate the type of shorthand test administered)

9. In your opinion, is there a relationship between the starting salary to be paid to and the degree of manual shorthand proficiency possessed by a secretarial applicant at the time the applicant is hired as a secretary or promoted to a beginning secretarial position in your company? In other words, do you feel that greater skill in shorthand is rewarded with increased compensation for a beginning secretary in your company?

- a) yes
- b) no
- c) don't know

10. Do you ever transcribe from a dictating/transcribing machine?

- a) yes
- b) no

*If the answer to Question #10 is b) no, answer Question #11.

**If the answer to Question #10 is a) yes, omit Question #11.

11. Do you foresee a time in the near future when you may transcribe from a dictating/transcribing machine in the performance of your secretarial duties in your present position?

- a) yes
- b) no

12. How many years have you been a secretary for this company? _____

13. How does your boss (or bosses) reply to his/their correspondence?
(Use F for *Frequently*, S for *Sometimes*, R for *Rarely*, and N for *Never*)

	Column A	Column B
a) Dictates reply to secretary who records dictation using manual shorthand		
b) Writes original reply in longhand draft form and gives to secretary for typing		
c) Writes reply directly on the original correspondence and mails the original back		
d) Replies by using the telephone		
e) Dictates oral reply to secretary who types directly at typewriter		
f) Dictates reply to dictating/transcribing machine		
g) Boss types his own replies		
h) Dictates reply to secretary who records dictation using a shorthand machine (touch shorthand)		
i) Delegates secretary to reply		
j) Delegates someone else, other than secretary, to reply		
k) Replies by using telegrams		
l) Replies by using the telex		
m) Other (please specify)		
n)		
o)		

14. How would you prefer that your boss (bosses) reply to his/their correspondence? (Indicate with a check mark in Column B)

15. Do you ever use a shorthand machine (touch shorthand) in the performance of your *present* secretarial duties?

a) yes

b) no

* If the answer to Question #15 is b) no, answer Question #16.

** If the answer to Question #15 is a) yes, omit Question #16.

16. Do you foresee a time in the near future when you may use a shorthand machine (touch shorthand) in the performance of your secretarial duties in your *present* secretarial position?

a) yes

b) no

c) don't know

Overall Comments:

APPENDIX B

Interview Guide - Managers

INTERVIEW GUIDE

(Managers)

1. How do you reply to your correspondence?
 (Use F for *Frequently*, S for *Sometimes*, R for *Rarely*, and N for *Never*)

	Column A	Column B
a) Dictate reply to secretary who records dictation using manual shorthand		
b) Write original reply in longhand draft form and give to secretary for typing		
c) Write reply directly on original correspondence and mail the original back to sender		
d) Dictate reply to dictating/transcribing machine		
e) Dictate oral reply to secretary who types directly at typewriter		
f) Dictate reply to secretary who records dictation using a shorthand machine (touch shorthand)		
g) Delegate secretary to reply		
h) Delegate someone, other than secretary, to reply		
i) Reply by telephone		
j) Reply by telegrams		
k) Reply by telex		
l) Type my own replies		
m) Other: (Please specify)		
n)		

2. How would *you prefer* to reply to your correspondence?
 (Indicate with a check mark in Column B)

3. If you were hiring a new secretary, would you hire one who did not have proficiency in manual shorthand?

a) yes

b) no

Why or Why not?

Comments:

APPENDIX C

Interview Guide - Personnel Directors

INTERVIEW GUIDE

(Personnel Directors)

1. To be a *secretary* in your firm, proficiency in which of the following systems of *shorthand* is *required* as a *prerequisite* for a *secretarial* position?
 - a) symbol (Gregg, Pitman, Thomas)
 - b) alphabet (Forkner, Stenoscrypt ABC, Speedwriting)
 - c) machine (touch shorthand)
 - d) either symbol or alphabet
 - e) symbol, alphabet, or machine
 - f) no shorthand is required
 - g) other
2. What is the *minimum manual shorthand* speed required of a secretarial applicant for a secretarial position?
 - a) no shorthand is required
 - b) under 60 words per minute
 - c) 60 up to 80 w.p.m.
 - d) 80 up to 100 w.p.m.
 - e) 100 up to 120 w.p.m.
 - f) 120 up to 140 w.p.m.
 - g) 140 w.p.m. and above
 - h) no specific speed is required
3. What type of *shorthand test* is administered to test the secretarial applicant's ability to take shorthand at a specific speed?
 - a) no shorthand test is administered
 - b) applicant takes dictation and reads notes back
 - c) applicant takes dictation and transcribes notes by using typewriter
 - d) other

4. If there is a relationship, what is the relationship between the starting salary to be paid to and the degree of manual shorthand proficiency possessed by a secretarial applicant when the applicant's proficiency exceeds the minimum shorthand speed required for a secretarial position?

- a) shorthand is not required for a secretarial position, therefore, there is no relationship to starting salary
- b) shorthand is required, but there is no relationship to starting salary
- c) shorthand is required and there is a relationship to starting salary
- d) shorthand may be required, but there is no relationship to starting salary
- e) shorthand may be required and there is a relationship to starting salary

	<u>Shorthand Speed Required</u>										<u>Monthly Salary</u>									
f)	under 60 w.p.m.	_____	450	475	500	525	550	575	600	625	650	675	_____	_____	_____	_____	_____	_____	_____	_____
g)	60 up to 80 w.p.m.	_____	450	475	500	525	550	575	600	625	650	675	_____	_____	_____	_____	_____	_____	_____	_____
h)	80 up to 100 w.p.m.	_____	450	475	500	525	550	575	600	625	650	675	_____	_____	_____	_____	_____	_____	_____	_____
i)	100 up to 120 w.p.m.	_____	450	475	500	525	550	575	600	625	650	675	_____	_____	_____	_____	_____	_____	_____	_____
j)	120 up to 140 w.p.m.	_____	450	475	500	525	550	575	600	625	650	675	_____	_____	_____	_____	_____	_____	_____	_____
k)	140 w.p.m. and above	_____	450	475	500	525	550	575	600	625	650	675	_____	_____	_____	_____	_____	_____	_____	_____
l)	other																			

APPENDIX D

Sample of Coding Forms Used to Stratify Population
of Secretaries and From Which Secretaries
Were Randomly Selected

TOP MANAGEMENT SECRETARIES - STANDARD INDUSTRIAL CLASSIFICATION #1

1.	26.	51.
2.	27.	52.
3.	28.	53.
4.	29.	54.
5.	30.	55.
6.	31.	56.
7.	32.	57.
8.	33.	58.
9.	34.	59.
10.	35.	60.
11.	36.	61.
12.	37.	62.
13.	38.	63.
14.	39.	64.
15.	40.	65.
16.	41.	66.
17.	42.	67.
18.	43.	68.
19.	44.	69.
20.	45.	70.
21.	46.	71.
22.	47.	72.
23.	48.	73.
24.	49.	74.
25.	50.	75.

APPENDIX E

**Digests (Some with Reviewer's Commentaries) of 45 Research Studies
Findings From Which Were Included in
Chapter II - "Findings of Related Research"**

The Adams Study

Adams¹ studied the responses of 114 Indiana University graduates who had been enrolled in programs designed to train them for high-level office positions to ascertain the relevancy of the Indiana University business education and office management curricular programs to the occupational experiences of these graduates in an effort to discover the extent to which they had used the knowledges, understandings, and skills included in those programs. She wanted to know if the graduates really needed the background of knowledges, understandings, and skills they were required to develop in college. Courses in shorthand and transcription were required of students enrolled in the business education program and in the professional secretarial emphasis on the office management program.

Graduates indicated the extent of use made of each of 32 factors in the category of secretarial and office administration which pertained to the knowledges, understandings, and technical skills that might be included in their university courses. Adams stated that extent of use was really an index of "need" for a factor in performing the duties attendant to an employment situation. She provided four alternatives for indicating use: frequently, occasionally, seldomly, not used.

Adams said:

. . . "frequency of use" is not synonymous with "importance." The fact that a factor is used seldomly does not necessarily mean that it is of less importance than another that is used occasionally or frequently. No attempt was made to rank the factors according to importance: It is assumed that whenever specific knowledges, understandings, or technical skills are drawn upon, they are important.²

¹Mary Ellen Adams, "A Study of Selected Graduates of the Indiana University Four-Year Secretarial Program (unpublished Doctor's dissertation, Indiana University, 1969).

²Ibid., p. 58.

Of the 114 respondents, she found that shorthand dictation was used frequently by 71 graduates (62.3 percent), occasionally by 16 (14.0 percent), seldomly by 10 (8.8 percent), not used by 16 (14.0 percent), and there was no response by 1 (.9 percent). Use of shorthand, therefore, was made by 85.1 percent of the graduates in this study.

One of the points for consideration in the conclusion of Adams' study was a reduction of the amount of study in the technical aspects of the curriculum - primarily shorthand, transcription, and typewriting - so that greater emphasis might be given to general education and business administration subjects.

Reviewer's Comments

In this present study, as well as in the study by Adams, the fact that a secretary may be called upon to use shorthand indicates that the secretary has a need for the knowledge of shorthand. In other words, even though shorthand skill may be rarely used in the performance of a secretary's duties, it may be highly important.

The Ashworth Study

Ashworth³ sent mailed questionnaires to 81 (84 percent response) former second semester shorthand students of Grossmont College, a community college located in El Cajon, California, to determine the extent to which the secretarial program of the college was meeting the vocational needs of students. Of the 68 respondents, who were enrolled at Grossmont from September, 1961 through June, 1963, 57 were currently in the labor force or about 84 percent. Approximately one-half of the respondents indicated their positions as secretaries (22 respondents) or stenographers (6 respondents).

Based on the 68 respondents, she found that 43 (63.2 percent) of the former students took routine dictation and transcribed; 46 (67.6 percent) composed letters at the typewriter; 40 (58.8 percent) transcribed from recording machines; 38 (55.9 percent) took dictation over the telephone; 31 (45.6 percent) took dictation of minutes and transcribed; and 1 (1.5 percent) used shorthand for court reporting purposes.

Ashworth also found that 45 (66.2 percent) of the 68 respondents typed letters and reports from longhand, and 41 (60.3 percent) of the 68 respondents indicated that they typed reports, articles, and manuscripts from rough drafts.

Reviewer's Comments

It appeared to this reviewer that Ashworth based the percentages of the respondents who performed the various duties identified in this

³Martha Salmi Ashworth, "Follow-Up of Grossmont College Secretarial Students as a Basis for Curriculum Modification" (unpublished Master's thesis, San Diego State College, 1965).

review on the total number of respondents to the survey rather than on the number who were currently in the labor force. If the percentages had been based on the number of respondents who were currently in the labor force, the percentages would have been greater than the percentages shown in the study. For instance, the percentage of those who took routine dictation and transcribed would have been 75.4 percent if the percentage had been based on the number who indicated that they were currently in the labor force (57 respondents) rather than on the total number of respondents (68 respondents).

The Baron Study

Baron⁴ used mailed questionnaires to obtain data from 129 (of which 57 were employed in offices; the other 72 either were not employed in offices or did not respond to the questionnaire) secretarial graduates of three senior high schools in Racine, Wisconsin, in an effort to assess their job competencies. He also questioned the employers of the 57 office-related respondents to obtain their ratings of the employees' competencies. Forty-two (73.7 percent) of the 57 graduates who were working in offices and 45 (78.9 percent) of the employers of these 57 office-working graduates responded to the opinion questionnaires.

Twenty-seven (60 percent) of the employers reported that shorthand did not apply to the jobs they had for beginning office workers. All 57 graduates in this survey had completed advanced shorthand in high school; 14 (33 percent) of the graduates indicated that shorthand did not apply to the employment of beginning office workers from their experiences.

Baron stated that it appeared that beginning office workers did not use shorthand skills in the early phases of office work.

⁴Ronald J. Baron, "A Study of Secretarial Graduates to Determine Competency in Initial Employment with Implications for Improvement of the Secretarial Curriculum" (unpublished Master's thesis, Wisconsin State University [Whitewater], 1970).

The Barr Study

Barr⁵ analyzed, classified, synthesized, and summarized 220 masters' and doctoral theses which were written on the subject of shorthand during the period of January 1, 1957 through December 31, 1967.

He felt that in the last few years that there had been an increased interest in research in business education and particularly in shorthand and transcription due in part to changes in the Gregg shorthand system, improvements in electronic dictation equipment, and increased use of programmed materials. Yet, Barr felt that the findings of this body of research were available to others essentially only through interlibrary loan.

He, therefore, sought to make meaningful, manageable, and useful the mass of research findings and conclusions which pertained to shorthand and transcription by analyzing, classifying, synthesizing, and summarizing these 220 theses into one study.

Included in his summary of research findings regarding the occupational use of shorthand, Barr stated that shorthand is not used on the job by many graduates since graduates responding to various surveys indicated on-the-job use of shorthand ranging from 47.1 percent to 70 percent and the reasons given for not using shorthand included: lack of efficiency, dislike for shorthand, lack of confidence, and change of vocation.

He also summarized other research findings by stating that there is a close relationship between the amount of shorthand training and the use of shorthand on the job and that approximately 75 percent of those who earned A's in shorthand and English used their shorthand on the job.

⁵James Elvin Barr, "An Analysis, Classification, and Synthesis of Research Findings in Shorthand and Transcription 1957-1967" (unpublished Doctor's dissertation, University of Oklahoma, 1971).

Barr indicated that researchers have found that employers rank personality and appearance in first and second place respectively and test results fall into third place when new employees are hired. Employers reported that employees tend to waste time, can't spell, need to learn punctuation rules and how to proofread, and use incorrect grammar and composition.

The Battist Study

Battist⁶ surveyed, by means of mailed questionnaires, 57 (82.5 percent response) 1962 through 1968 graduates of the Secretarial Science curriculum of the North Central Technical Institute (Wausau, Wisconsin) to determine the effectiveness of the program. The North Central Technical Institute is a post-high school educational institution which offers a two-year Associate Degree Secretarial Science program.

A student may elect at the beginning of his program to take either Gregg shorthand or Stenographic machine shorthand in the North Central Technical Institute's secretarial science program.

Of the 47 respondents, 34 (72 percent) were currently working full time for a fairly broad spectrum of business classifications and of those working, 65 percent were employed as secretaries.

Battist reported that 18 (39 percent) of the graduates used manual shorthand "often" (daily), 9 (20 percent) of the graduates used manual shorthand "some" (weekly) and 19 (41 percent) of the graduates used shorthand "seldom, if ever" in their "current" jobs.

She found that 2 graduates (4 percent) reported using the Stenograph "often" (daily), 1 graduate (2 percent) used the Stenograph "some" (weekly), and 43 graduates (94 percent) reported that they did not use the Stenograph "in current jobs."

Machine transcription was used by 8 (17 percent) of the graduates "often" (daily), 9 (20 percent) used machine transcription "some" (weekly), and 29 (63 percent) reported that they "seldom, if ever" used machine transcription "in current jobs."

⁶Bettyann Battist, "A Follow-Up Study of Secretarial Science Graduates from the North Central Technical Institute, Wausau, Wisconsin, 1962 Through 1968" (unpublished Master's thesis, Wisconsin State University [Eau Claire], 1969).

Reviewer's Comments

It is not known to this reviewer how many of the graduates who responded to Battist's study chose to study manual versus machine shorthand.

The figures reported by Battist regarding the use of shorthand by 47 graduates "in current jobs" seem irreconcilable with the previous figure which indicated that only 34 of the graduates said they were "currently employed."

The Behl Study

Behl⁷ sent letter-questionnaires to 93 graduates of Lake Mills (Wisconsin) High School who had taken courses in shorthand; 69 (74 percent) responded. He sought to determine whether these graduates were using their shorthand skills.

He found that 25 (36 percent) of the graduates who used their shorthand skills since graduation, 38 (55 percent) had never used their shorthand skills, and 6 (9 percent) did not reply.

He also found that 21 graduates (31 percent) had used voice transcription machines since graduation, 43 (62 percent) had not used voice transcription machines, and 5 (7 percent) did not reply. When asked if they felt that voice transcription is rapidly replacing shorthand, 41 (59 percent) of the graduates answered "yes," 19 (28 percent) answered "no," and 9 (13 percent) did not reply.

Most of the graduates recommended that other students take advanced training in business college or a vocational school after graduation from high school.

Behl also sent letter-questionnaires to 64 employers of the graduates who were employed in office work in an effort to determine employers' satisfaction with the graduates. Forty-eight (75 percent) of the employers responded.

The employers' replies indicated that 11 (23 percent) of the former shorthand students were utilizing their shorthand skills, 31 (65 percent) were not employing those skills, and 6 (12 percent) did not reply.

⁷Lloyd A. Behl, "A Follow-Up of Graduates of Lake Mills, Wisconsin High School Shorthand Classes" (unpublished Master's thesis, Wisconsin State University [Whitewater], 1969).

Employers stated that 18 (38 percent) of the former shorthand students were using voice transcription machines, 24 (50 percent) said they were not, and 6 (12 percent) did not respond.

Employers emphasized that employees should have strengthening in grammar, spelling, and vocabulary. They also stressed the importance of a neat appearance and punctuality.

Although many of the graduates who had completed courses in shorthand were not using shorthand, most of them indicated that they were satisfied that they had learned the skill.

Graduates who had taken two years of shorthand felt more adequately prepared to use the skill than did those who had taken one to one and one-half years of shorthand.

Most of the graduates said that if they were starting out again in high school, they would again take shorthand courses because they felt there would always be jobs for people with shorthand training.

More than one-half of the graduates felt that voice transcription is replacing shorthand and 49 percent of the graduates indicated that they would have taken courses in machine shorthand if they had been available in their high school.

Behl concluded that since over one-third of the graduates used shorthand on the job that shorthand should be retained in the curriculum. He questioned, however, why all of the graduates did not use their shorthand skills.

The Biggers Study

Biggers⁸ sent mailed questionnaires to 200 businesses (117 companies responded with 102 usable responses or slightly over 50 percent) in Columbus, Ohio in 1969 to determine and compare the status of shorthand and recording machines used for recording dictation and the status of stenographers and other transcription workers. She compared the findings of her study with two previous studies: Welsh, 76 firms, in 1946; and Lower, 79 firms, in 1956. All three studies were of Columbus firms - using the same ones were possible to observe trends.

Biggers found that in a total of 1,874 employees who used various media (including shorthand, longhand, voice recorder, Stenotype, and the typewriter) to record dictation that 61.6 percent used the medium of shorthand while 38.4 percent did not use shorthand. These employees included 1,102 secretaries, 230 stenographers, 260 clerk-typists, 223 machine transcribers, 19 Stenotype operators, and 40 receptionists as reported by 97 companies which provided a breakdown of personnel classifications.

She found from the responses of the personnel directors that the 1,102 secretaries used various media to record dictation: 897 (81.4 percent) used shorthand, 435 (39.5 percent) used longhand, 456 (41.4 percent) used voice recorders, 13 (1.2 percent) used Stenotype machines, and 21 (1.9 percent) used the typewriter.

Comparing the findings in her study with two previous studies (Welsh, 1946, and Lower, 1956), Biggers found that in 1946, 83 percent

⁸Beverly A. Biggers, "The Status of Shorthand and Recording Machines Used for Dictation in Representative Business Firms in Columbus, Ohio in 1969" (unpublished Master's thesis, The Ohio State University, 1969).

of the firms and 71 percent of the employees used shorthand to record dictation; in 1956, 81 percent of the firms and 70 percent of the employees used shorthand to record dictation; and in 1969, 76 percent of the firms and 66 percent of the employees used shorthand to record dictation. A decline in the use of shorthand from 1946 to 1969 is noted in these three studies. The percentage of firms and employees using shorthand to record dictation decreased from 1946 to 1956 and from 1956 to 1969.

Using the two previous studies for the purpose of comparison, Biggers reported that the use of voice recorders compared as follows: in 1946, businesses 37 percent, employees 27 percent; in 1956, businesses 58 percent, employees 26 percent; and in 1969, businesses 57 percent, employees 48 percent. She noted an increase in the use of voice recorders by employees and in firms between the years of 1946 and 1969.

The Stenotype machine was used by .6 percent of the employees and in 4 percent of the firms in 1946, while in subsequent studies the Stenotype was used by 3 percent of the employees and in 10 percent of the firms in 1956; and by 2 percent of the employees and in 6 percent of the firms in 1969.

Both in 1956 and in 1969, 80 - 100 words per minute was the most frequent range of shorthand speeds required by firms. Of the 41 firms which indicated specific minimum speed requirements, 26.8 percent required 60 - 80 words per minute, 58.5 percent of the firms required 80 - 100 words per minute, 12.2 percent of the firms required 100 - 120 words per minute, and 2.4 percent of the firms required 120+ words per minute. She found that 23.7 percent of 97 firms did not require shorthand of employees and the principal reason given for not using shorthand was economy of time.

Most firms differentiated among beginning salaries for transcription workers: secretaries with shorthand ability were paid the highest salary in 92 percent of the firms, 65 percent of the firms with secretaries without shorthand ability paid these secretaries the highest or second highest salary according to Biggers.

About one-half of the firms (48 percent) differentiated among transcription workers with regard to promotional opportunity based on shorthand ability and educational background while 38 percent of the firms indicated that other factors determined promotional opportunity.

Both in 1956 and in 1959, employers emphasized that spelling was a deficiency in both shorthand-equipped and non-shorthand-equipped employees.

Among her conclusions, Biggers pointed out that there were jobs available for transcribers who did not know shorthand. She felt that the percentage of firms which employed shorthand writers increased with the size of the office.

Biggers also concluded that shorthand still held a prominent position in the preference of media used by business firms to record dictation.

Among other conclusions:

- (1) Transcription workers were increasing in relation to the number of office workers.
- (2) There was a trend toward more testing.
- (3) In general, business school or college business majors, with or without shorthand ability, were preferred by businesses.
- (4) Shorthand competency was rewarded by higher salaries. Transcribers with shorthand ability were paid more regardless of title and secretaries with shorthand ability were usually paid the highest salary of all transcribers.

Biggers recommended that high schools continue to offer programs designed to prepare transcription workers to use many types of media to record and transcribe dictation.

The Colvin Study

Colvin⁹ used mailed questionnaires to survey 37 randomly selected firms (31 respondents or 84 percent response) located in Owatonna, (Steele County) Minnesota and a random sample of currently employed office workers who were graduates of one of four public high schools in Steele County during the years of 1959 through 1964 and who had completed two years of shorthand training in high school. There were 336 graduates who met the qualifications and limitations of this study and of this number, names of graduates were drawn at random until each school had an equal initial number of graduates, 30 from each, who were requested to participate in his research study.

He found that 64.5 percent of the firms indicated that they employed shorthand-trained office workers, whereas 35.5 percent of the firms did not employ workers who used shorthand. Of the 31 responding firms, 18 were classified as industries, and 55.6 percent of these industrial firms reported that employees were employed who used their shorthand skills frequently.

Of the 34 former students who responded to the questionnaire, 28 (82.4 percent) indicated that they had taken 2 years of shorthand for vocational training. Of the 34 respondents, Colvin found that 16 or 47.1 percent made frequent use of their shorthand training on the job since graduation from high school, 7 or 20.6 percent indicated that they seldomly used their shorthand skill, and 11 or 32.4 percent stated that they had not used shorthand on any job since high school.

⁹Ray Colvin, "The Needs and Use of Shorthand in Steele County, Minnesota" (unpublished Master's thesis, Mankato State College, 1965).

He found that 58.8 percent of the respondents felt that their shorthand skills had helped them in securing an office position.

Colvin found that of the 34 former-student respondents, 29.4 percent indicated that they frequently used, 11.8 percent indicated that they seldomly used, and 58.8 percent indicated that they never used a transcribing machine on the job. Of the 31 businesses responding to Colvin's study, 67.7 percent reported that transcribing machines were used in their businesses.

The Cook and Lanham Study¹⁰

Cook, as principal investigator, and Lanham of Wayne State University directed professional interviewers in a study of the availability of entry-level jobs for high school leavers (aged 16-21) and the specific business skills demanded as a prerequisite for these positions as indicated by employers located within the political boundaries of Detroit. A list of 35,091 businesses was stratified by size and by type of business (Standard Industrial Classification) and from these strata a disproportional stratified serial sample of 683 companies was drawn.

A random proportional stratified sample of 969 cases was drawn from the June, 1963 graduates (7,422 in number) from Detroit's 21 public high schools and from those who should have graduated in June, 1963 (330 cases), but who dropped out in their senior year.

They found that in a projected total of 99,509 office and retail occupations, 4,752 (5 percent) were for secretaries and stenographers and that shorthand was required of the secretaries and stenographers in 96 percent of the 4,752 positions.

They found that secretaries and stenographers required the highest ratio of skills per job (typewriting and shorthand), but that there were not many skills required of most entry jobs. They also found that there were not many entry-level jobs available to high school leavers in relationship to the total jobs available and that stenographers and secretaries, who required the highest ratio of skills for their jobs, did not account for a great number of entry jobs available to high school leavers.

¹⁰Fred S. Cook and Frank W. Lanham, "Opportunities and Requirements for Initial Employment of School Leavers with Emphasis on Office and Retail Jobs" (Cooperative Research Project No. 2378, Office of Education, U. S. Department of Health, Education, and Welfare, Wayne State University, 1966).

Cook and Lanham also found that of the total office and retail jobs, only 5 percent were identified as positions for stenographers and secretaries. They recommended careful screening of students prior to admission to preparatory programs for these job roles because of the high proportion of skill demands.

The Cook and Shapiro Study¹¹

Three hundred twenty-six employees of a single public utility in Detroit, Michigan were personally interviewed by a team of professional interviewers in an effort to identify and to describe "successful" secretaries and to utilize this information to serve as a basis for revision and updating curricula for the training of secretaries.

Among the 326 who were interviewed, there were 149 secretaries, 132 supervisors, and 45 other clerical employees. These three groups rated secretaries on *subjective* bases. Included in the findings was the *belief* that a secretary must possess high levels of secretarial skills (shorthand and typing), although she may not use them with great frequency.

It was also found that secretaries with more education were more successful than secretaries with less education.

In general, it was found that there was little indication that high skill levels, when measured *objectively*, were significantly related to secretarial success. No objective measures of dictation and transcription skill were taken at the time of the interviews in this study since pre-testing experience revealed that objective testing on the job was impractical. However, personnel records of the previously tested abilities of the secretaries were made available to the researchers.

Skill in shorthand was necessary to attain success as a secretary, but success as a secretary was not a function of greater success if a greater number of shorthand courses had been taken.

¹¹Fred S. Cook and Edward Gary Shapiro, "Factors Associated with Successful Adaptation to the Secretarial/Stenographic Role" (USOE Grant No. OEG 3-6-062181-2079, Wayne State University, 1968).

When asked to respond to the question of what skills, knowledges, and personal qualities must a secretarial employee possess in order to function effectively in most offices, shorthand was mentioned by 67.4 percent of the supervisors, 74.5 percent of the secretaries, and 86.7 percent of the other clerical employees.

It was found that groups of secretaries who receive high ratings on ability to take and transcribe dictation have higher group mean success scores than do those groups that receive lower ratings. This was true of all three sources of ratings.

"Successful" secretaries were generally assumed to possess higher skill levels than did "unsuccessful" secretaries.

Those secretaries who were *subjectively* rated high in secretarial skills were also those secretaries who were high in secretarial success.

There was no accord between the *subjective* and the *objective* evaluations of secretarial skills by the raters in this study.

Curriculums which contain more than one year of shorthand and typewriting should be questioned by administrators and businessmen.

Secretaries were also asked to indicate the frequency with which they performed 56 office duties which came from a list of 80 office duties developed and used in a study by the Pittsburgh Chapter of the Office Management Association in 1954. Cook and Shapiro did not include 24 of the 80 duties included in the Pittsburgh study which dealt with those duties concerned with office equipment and machines. The duty "take dictation in shorthand and transcribe dictation" was ranked 2 in the Pittsburgh study of 1954 and was ranked 27.5 in the Cook and Shapiro study of 1968 of duties most frequently performed by secretaries. The duty "compose and type letters with/without instruction as to content"

was ranked 14.5 in the Pittsburgh study and ranked 19.5 in the Cook and Shapiro study. The duty "type letters" was ranked 1 in both studies.

Reviewer's Comments

It is of interest to note that, although secretaries in the Cook and Shapiro study ranked "typing of letters" as their most frequently performed duty, "taking dictation and transcribing dictation" was ranked 27.5. It would seem, therefore, that many of those letters were not dictated to secretaries who used shorthand to record the dictation.

Daniel D. Howard Associates, Inc. Study

Daniel D. Howard Associates, Inc., a Chicago headquartered management consulting firm, revealed, as a result of a survey, how 179 board chairmen or company presidents in Chicago wasted or misused their time by not dictating to a secretary or to a dictating/transcribing machine.

Answering letters, putting out memos and other forms of writing also eat into the top executive's time more than seems necessary. One reason is that only 21% of them use a dictating machine. Another reason lies in their addiction to writing letters, memos, and so forth in longhand. Some 40% of them say they normally do this.

By contrast, some 58% say they normally dictate to their secretaries. Add this 58% to the 40% who normally write in longhand and the 21% who normally use a dictating machine, and you'll come up with a figure well in excess of 100%.

What's the explanation? In many cases, says Paul L. Rice, executive vice president of Howard Associates, the executives may first write things out in longhand, then dictate them - either to their secretaries or into a machine. This may be a needless duplication of effort. An executive might better dictate, then correct his dictation in longhand.¹²

¹²"How 179 Chief Executives Waste Their Time," Business Management, 33:12-14, March, 1968.

The Drexler Study

Drexler¹³, with the aid of teacher-coordinators in 17 schools (high schools and two-year colleges) in New York State, sent questionnaires to 1,499 graduates of two shorthand programs - 699 machine shorthand graduates (355 respondents or 50.8 percent) and 750 manual shorthand graduates (377 respondents or 50.3 percent). Participants included all graduates of machine shorthand programs from years 1962-1966 and a similar group of manual shorthand writers who had graduated during the same period. She sought to determine the real need for courses in machine shorthand that existed at that time and to discover the potential merit of establishing future programs in machine shorthand.

Drexler found that of the 377 manual shorthand graduates who responded to the study that 91 (75.8 percent) of the two-year college graduates reported using their manual shorthand while 29 (24.2 percent) were not using their shorthand on the job, that 55 (40.7 percent) of the New York City secondary school graduate respondents used their shorthand while 80 (59.3 percent) did not use shorthand on their current jobs, and that 46 (37.7 percent) of the Upstate and Long Island secondary school graduates used their shorthand and that 76 (62.3 percent) did not use their shorthand skills on the job. Overall, 192 (50.0 percent) of the respondents used shorthand while 185 (49.1 percent) did not use the skill on the job although all had studied the skill for at least two years and more two-year college graduates used shorthand on the job relative to the high school graduates.

¹³Violet Drexler, "A Study to Determine the Vocational Use of Machine Shorthand" (unpublished Doctor's dissertation, New York University, 1967).

Of the 192 graduates who reported using manual shorthand on the job, 135 (70.3 percent) were classified as secretaries, 56 (29.2 percent) were classified as stenographers, and 1 (.5 percent) was a reporter. Of the 185 who reported that they were not currently using shorthand on the job, none were classified as secretaries in Drexler's study.

Drexler stated that the overwhelming success of the stenographic programs from the two-year colleges, particularly in manual shorthand could not be questioned when from a group of 120 graduates, only 10 had not profited vocationally from the shorthand skill they were taught during their higher education.

Reviewer's Comments

Of particular interest to this reviewer were the findings of Drexler which pertained to the use of manual shorthand.

Since the literature reports a paucity of secretaries and stenographers, this reviewer questioned why so many graduates who had studied shorthand did not use their shorthand skills on the job.

The Fujii Study

Fujii¹⁴ surveyed, by means of mailed questionnaires, a cross section of 170 businesses (68 percent response) in Honolulu, Hawaii, to determine the need for shorthand skills and the extent to which shorthand was used as compared to machine shorthand and voice transcription equipment. Twenty-two (17.5 percent) of the 114 firms did not complete the questionnaire primarily because they did not hire stenographers and secretaries or shorthand was not utilized by personnel in these firms. Personnel managers in 92 (54 percent) of the companies completed the questionnaire.

Fujii requested the personnel director in each of the 170 businesses to ask a stenographer or secretary employed by the company to complete a one-page questionnaire. This secretary or stenographer, who was not to be an executive or administrative secretary, was to be one who "takes dictation using manual (written) shorthand." There were 89 questionnaires returned by secretaries or stenographers of which 83 fulfilled the restrictions set by Fujii.

Fujii found that all of the 83 responding secretaries and stenographers indicated that they used manual shorthand to record dictation. Fujii reported in tabular form the percentage of total correspondence which the secretaries and stenographers indicated they recorded using manual shorthand and reported that all of the secretaries or stenographers in her study said they used manual shorthand to record some portion of their bosses' total correspondence.

¹⁴Amy T. Fujii, "A Survey to Determine the Need for Shorthand Skills in Selected Business Firms in Honolulu, Hawaii" (unpublished Master's thesis, University of Montana, 1971).

Fujii reported that secretaries indicated a lower usage of manual shorthand than personnel directors indicated that secretaries utilized, and she also stated that more secretaries and stenographers believed that there had been a decline in the usage of shorthand in the past five years than did personnel directors. When predicting usage of shorthand for the next five years, more secretaries predicted a decline in usage than did personnel directors.

Nearly 92 percent of the secretaries/stenographers indicated that they had studied Gregg shorthand; 3.6 percent of the secretaries/stenographers learned Pitman shorthand, and 2.4 percent learned either ABC or Briefhand systems of shorthand. Either shorthand was not known by or no response was given by 2.4 percent of the secretaries.

Fujii reported that although machine shorthand was not taught in the public schools of Honolulu, 52 (56.5 percent) of the personnel directors indicated that machine shorthand was used for some of the dictation in their firms.

Two-thirds of the firms expected their secretaries to be able to compose letters without direct supervision. Nearly 80 percent, or 66 secretaries, reported that they composed letters for their superiors.

One-third of the firms indicated that they had entry-level secretarial and stenographic positions for inexperienced applicants.

Of the 92 firms, 72.8 percent used voice transcription machines to some extent for dictation.

Secretaries and stenographers reported a higher percentage of usage of dictation/transcription machines than did personnel directors.

Fujii recommended that secretarial students be given training both in manual shorthand and in the use of dictating/transcribing machines.

Of 83 secretaries, 31 or 37.3 percent indicated that they used voice transcription machines, while 52 or 62.7 percent said they did not use this type of equipment.

Fujii indicated the following dictation methods were those most preferred by executives in 92 firms as reported by personnel directors:

Manual (written) shorthand	59.8
Machine shorthand	0.0
Voice transcription	12.0
Manual or machine	2.2
Manual or voice transcription	2.2
No preference	19.6
No response	4.3

Reviewer's Comments

It was no surprise to this investigator that Fujii found that all of the secretaries or stenographers in her survey indicated that they used manual shorthand to record some portion of their dictators' total amount of dictation since she stipulated to the personnel directors that they choose a secretary or stenographer who "takes dictation using manual (written) shorthand" to respond to the questionnaire.

The findings of Fujii regarding the use of machine shorthand in the firms in Honolulu seemed unusually high when compared to the findings regarding the use of machine shorthand in firms as revealed by other studies contained in this appendix.

The Geller Study

Geller¹⁵ mailed questionnaires to 80 (61 respondents or 76 percent) secretarial graduates (1967-1970) of Thomas College, Waterville, Maine, to determine the effectiveness of their college training in preparing them for initial full-time positions. She also studied the responses of other business education graduates of Thomas College, but only the responses of the secretarial graduates were considered for this review.

Initial full-time positions as secretaries were held by 48 (78.7 percent) of the graduates. Of the 60 respondents who had been employed since graduation, 42 (70 percent) indicated that they used shorthand on their first full-time position while 18 (30 percent) indicated that they did not use shorthand of any kind on their first job.

Letters were composed by 45 (75 percent) of the 60 working respondents and 26 (43 percent) reported that they took direct dictation at the typewriter on their first full-time positions.

The transcription machine was used by 48 percent or 29 of the graduates on their first job.

¹⁵Elizabeth M. Geller, "Follow-Up Study of the 1967-1970 Secretarial and Business Education Graduates of Thomas College, Waterville, Maine" (unpublished Master's thesis, Boston University, 1971).

The Graham Study

Graham¹⁶ analyzed and synthesized source materials relating to the preparation and employment of administrative secretaries and formulated specific recommendations for the improvement of the collegiate administrative secretarial curriculum. He aimed to identify the knowledges, abilities, and traits needed by administrative secretaries; define the fundamental educational elements in the preparation of administrative secretaries; and formulate recommendations for the improvement of the collegiate administrative secretarial curriculum.

Among his findings regarding shorthand and based on materials published from 1960-68, Graham stated that most collegiate secretarial programs continued to offer shorthand as a four-semester course although he quoted Elvin S. Eyster from an article published in the Ball State Commerce Journal as saying in the future " . . . we will provide intensive business skill courses for high level students that challenge them to get in two semesters what has been covered in four."

Graham also emphasized that the proficiency demonstrated by an administrative secretary, when taking dictation and transcribing, went far beyond merely writing shorthand outlines and stroking typewriter keys. Added to the use of these technical skills were many other special and unique knowledges and abilities which must be sharpened to the highest possible proficiency levels and then effectively coordinated if the administrative secretary was to fulfill the mission of being an extension of the employer.

¹⁶Harry P. Graham, "A Study of the Qualifications of the Administrative Secretary With Implications for the Collegiate Curriculum" (unpublished Doctor's dissertation, University of Oklahoma, 1969).

Graham concluded that business will continue to demand secretaries who are highly proficient in secretarial skills. The evidence is solid that shorthand skills are essential to secretarial work in high-level secretarial positions . . . the collegiate administrative secretarial curriculum should consist of a balanced combination of general education, the business core, and the area of concentration.

The Graves Study

Graves¹⁷ conducted personal and telephone interviews, using check lists, with representatives of personnel departments, many of which she knew to hire her former students, to determine the education and skill requirements for beginning clerical and stenographic employees in the Sacramento metropolitan area. These interviews were from one-half hour to two hours in length.

She found that employers required of beginning stenographers a shorthand speed of 80 words per minute in 8 of the 14 companies, 2 companies required a speed of 70 words per minute, and 4 companies reported "no positions available."

Reviewer's Comments

It was not known to this reviewer if the personnel representatives of the four companies which reported "no positions available" interpreted Graves's questions regarding stenographers as an inquiry for a stenographic position or if they simply did not hire stenographers in their firms.

¹⁷Esther B. Graves, "A Study of Job Specifications for Clerical and Stenographic Positions Available to Recent High School Graduates in Selected Industries" (unpublished Master's thesis, Sacramento State College, 1961).

The Gray Study

Gray¹⁸ mailed questionnaires to 168 (151 respondents or 89.9 percent) Secretarial Technician majors (1961-1966) of a two-year degree program at Brigham Young University (Utah) in an effort to evaluate the adequacy of the program.

She also sent questionnaires to 51 (96 percent response) of the first employers of the graduates asking for an evaluation. Four responded that they could not remember the graduates. However, employers responded that they were essentially satisfied with the graduates.

The initial positions held by the secretarial technicians were: secretary (66 or 43.7 percent of the responding graduates), executive secretary (8 or 5.3 percent of the graduates), stenographer-secretary (4 or 2.6 percent), secretary-receptionist (4 or 2.6 percent), secretary-bookkeeper (2 or 1.3 percent) and stenographer (11 or 7.2 percent). A total of 55.5 percent of the graduates held secretarial positions on their first job.

When the graduates were asked how useful certain skills had been to them in their employment, their response to shorthand was as follows: 58.9 percent said very useful, 16.6 percent said quite useful, 11.9 percent said somewhat useful, 11.3 percent said of little or no use, and no answer was given by 2.0 percent.

When asked if they were to complete their training program again at Brigham Young if they would take more, less, or about the same amount of shorthand, the responses were: 27.8 percent said more emphasis recommended, 7.9 percent said less emphasis recommended, 60.3 percent said about the same emphasis recommended and 4.0 percent gave no answer.

¹⁸Helen Joann Gray, "A Follow-Up Study of the Effectiveness of the Two-Year Secretarial Technician Program at Brigham Young University" (unpublished Master's thesis, Brigham Young University, 1968).

Dictating machines were used a great deal by 14.6 percent, quite a lot by 19.9 percent, little or none by 60.9 percent, and no response was given by 4.6 percent of the graduates.

The Hershey Study

Hershey¹⁹ studied 198 academic secretaries employed at the Bloomington campus of Indiana University (91.7 percent of the 216 secretaries invited to participate) by means of group interviews where the participants completed questionnaires. The focal point of his study was to identify the nature and extent of relationships existing between ratings of job satisfaction and biographic-experiential data pertaining to secretaries.

Although his study did not pertain to the use of shorthand by these secretaries, it was interesting to note that Hershey found that 34 (17.2 percent) of the 198 secretaries had taken no courses in shorthand and transcription, 17 (8.6 percent) had taken one semester and 42 (21.2 percent) had taken two semesters or the equivalent. Therefore, 47.0 percent of these 198 secretaries had had one year or less of shorthand study.

Hershey found that 88 of 198 secretaries or 44.4 percent did not take a pre-employment shorthand test. Of the 110 secretaries who did pass a pre-employment test, he found that 33 or 30.0 percent of the secretaries reported their highest dictation rate to be less than 80 words per minute and that 66 or 60 percent indicated that their top speed passed was 80 up to 100 words per minute. No secretary reported passing the pre-employment shorthand test at a speed above 100 words per minute, but 11 or 10 percent of the 110 secretaries indicated that they passed the shorthand dictation test at 100 words per minute.

¹⁹Gerald Hershey, "Experimental Attributes and Attitudinal Postures of Indiana University Academic Secretaries" (unpublished Doctor's dissertation, Indiana University, 1971).

The Horlacher Study

Horlacher²⁰ conducted an experimental study with 75 high school students of Westwood High School (Mesa, Arizona) during the 1968-1969 academic year to make a comparison of the learning progress of students studying the more commonly taught Gregg (DJ) symbol shorthand system and Stenoscrypt alphabet shorthand which is a relatively new system. There were 29 students enrolled in the Stenoscrypt alphabet and 48 students enrolled in the Gregg (DJ) symbol shorthand classes.

Horlacher wanted to find if students instructed in an alphabet shorthand system might learn more in two semesters of instruction than students instructed in Gregg (DJ) symbol shorthand. He also wanted to justify the incorporation of Stenoscrypt shorthand, or some other alphabetic shorthand system, into the business education curriculum.

He felt that with the increasing demands for students' time that new approaches to learning should be tried with the hope of accomplishing the same shorthand speeds in less time. He reported that the publishers of the Stenoscrypt shorthand system claim that their shorthand method can be learned to a marketable proficiency, 80 - 100 words per minute, in one semester, which is partly attributed to the relatively short time required for theory presentation. Horlacher also indicates that Jerre Gratz reports in Monograph 106 (South-Western Publishing Company, April, 1962, p. 69), Major Issues in Business Education, that 50 percent of business education leaders believed that a three-semester shorthand course was requisite to beginning job proficiency while another 26.3 percent thought

²⁰Floyd Kent Horlacher, "A Comparison of the Learning Progress in Stenoscrypt Alphabet Shorthand and Gregg (DJ) Symbol Shorthand After Two Semesters of Instruction" (unpublished Doctor's dissertation, Arizona State University, 1969).

that four semesters of instruction were needed to attain job proficiency with symbol shorthand.

Since the two groups of students studied by Horlacher did not have pre-experimental sampling equivalence, as the only groups available were intact or administratively organized groups within the Westwood High School, it was necessary for him to equate the two groups statistically on scores obtained for every student on aptitude and abilities thought to affect shorthand achievement by using a statistical technique called analysis of covariance to obtain a meaningful and unbiased comparison of stenographic achievement.

Horlacher found that there was a significant difference at the .05 level in the achievement of Stenoscript alphabet shorthand students and Gregg (DJ) symbol shorthand students after two semesters of instruction. He found that the Stenoscript group achieved higher shorthand speeds than the Gregg group at speeds of 60, 70, 80, and 90 words per minute and that there was no significant difference between the two groups at shorthand dictation speeds of 50 and 100 words per minute.

Horlacher recommended that business educators at all levels of education recognize Stenoscript alphabet shorthand as a vocational skill which should be taught in the public schools.

The J. M. James Study

James²¹ used mailed questionnaires to survey 35 graduates and 31 non-graduates of the two-year secretarial science training program at Utica Junior College (Utica, Mississippi), an institution which educates predominantly Negroes and which has as an objective to provide all students with a marketable skill by the end of the first year if they are not able to return to complete two full years of training. She sought to find from these 1954 - 1968 graduates and the non-graduates of this time period the effectiveness of their secretarial training.

The graduates had completed two years of shorthand training while the non-graduates had completed two years or less of shorthand.

She found that three of the graduates and six of the non-graduates were serving as secretaries. No mention was made of their use of shorthand in their secretarial roles.

²¹Jessie Mildred James, "A Survey to Determine the Effectiveness of the Two-Year Secretarial Science Training Program at Utica Junior College, Utica, Mississippi" (unpublished Master's thesis, The University of Wisconsin [Madison], 1971).

The Thomas James Study

James²² mailed questionnaires to 200 selected firms in New York City (100 respondents or 50 percent) and conducted personal interviews with the personnel directors of 10 percent of the respondents to verify the questionnaire responses to find those criteria they utilized to hire beginning stenographic-secretarial workers and to find those criteria they utilized to promote effective stenographic-secretarial workers to higher positions.

Respondents were asked to list, in order of importance, five prime technical skills which they considered of most importance when hiring beginning stenographic-secretarial workers. James found that accurate dictation (80 to 100 words per minute) and transcription was ranked in first place by 39 respondents, second place by 34, third place by 11, fourth place by 4, and fifth place by 2. Accurate typewriting was ranked in first place by 32 respondents, second place by 27, third place by 14, fourth place by 1, and fifth place by 1. English fundamentals was ranked in first place by 12 respondents, second place by 11, third place by 10, fourth place by 5, and fifth place by 4. These three technical skills were at the top of a list of twenty-three technical skills.

When respondents were asked to list, in order of importance, the five prime personal characteristics they considered of most importance when hiring beginning stenographic-secretarial workers, the top three characteristics were: grooming, intelligence, and attitude.

²²Thomas James, "A Comparison of Criteria Utilized by Employers in Employing and Promoting Beginning Stenographic-Secretarial Workers" (unpublished Doctor's dissertation, New York University, 1963).

When asked what technical skills firms rated of most importance when promoting stenographic-secretarial workers, respondents rated accurate dictation and transcription in first place, accurate typewriting in second place, and English fundamentals in third place from a list of 31 technical skills.

When asked what personal characteristics were of prime importance when promoting stenographic-secretarial workers, respondents rated intelligence in first place, grooming in second place and cooperativeness in third place as the top three in a list of 32 personal characteristics.

James emphasized in the conclusions of his study that although it must not be overlooked that beginning stenographic-secretarial workers must possess the basic skills of the job, employers look for personal characteristics beyond the bare skill essentials. He found that employers give great importance to personal characteristics both when hiring and when promoting stenographic-secretarial personnel.

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The Justis Study

Justis²³ mailed questionnaires to 26 graduates (65 percent or 17 respondents) of a four-year secretarial course offered at Brigham Young University. Graduates for the years 1963-1968 and who worked as full-time secretaries for six months or longer were included in the study.

Questionnaires were also sent to 154 business teacher graduates (1963-1968) who might have been employed as secretaries for six months or longer following graduation instead of entering the teaching profession. Questionnaires were returned from 47 of the business-teacher graduates who were employed as secretaries. Therefore, a total of 64 graduates responded to her study.

The purpose of the study was to determine the effectiveness of the secretarial training of the executive assistant who was a graduate of the four-year secretarial training program and of the business-teacher graduates.

All (100 percent) of the business-teacher graduates who had worked as secretaries indicated that they took dictation and transcribed on the job. All composed letters or memoranda. Transcribing machines were used by 59.8 percent or 28 of the business-teacher graduates.

All (100 percent) of the executive-assistant graduates took dictation in shorthand and transcribed, and all composed letters or memoranda. Transcribing machines were used by all but one or 94 percent of the executive-assistant graduates.

Of the 64 respondents, 39 or 60.9 percent reported that they recorded dictation at meetings by using shorthand.

²³Susan Z. Justis, "A Study of the Executive Assistant and Business-Teacher Graduates Who Obtained Full-Time Secretarial Employment After Graduation from Brigham Young University, 1963-1968" (unpublished Master's thesis, Brigham Young University, 1970).

The Kalchoff Study

Kalchoff²⁴ studied by means of mailed questionnaires, 178 graduates who had successfully completed two semesters of shorthand at Granite City High School (Illinois) to determine their application of their skill. Of the 178 graduates in the January and June classes of 1958, 1959, and 1960; 45 (26 percent) had completed two semesters of shorthand and 13 (29 percent) had used shorthand on the job; 24 (13 percent) students had completed three semesters of shorthand and 11 (46 percent) had used shorthand on the job; 24 students (13 percent) had completed four semesters of shorthand and 16 (67 percent) used shorthand on the job; and 85 students (48 percent) had completed four semesters of shorthand and secretarial training and 69 (81 percent) had used shorthand on the job.

Of the 178 respondents who had successfully completed two or more semesters of shorthand, 61 percent or 109 of the former students had used the skill on the job since graduation.

Kalchoff reported that two graduates who were unemployed and seeking full-time employment had successfully completed four semesters of shorthand and one semester of secretarial training.

Kalchoff found that 102 of the 178 respondents held full-time positions at the time of her study of which 40 were secretaries, 14 were stenographers, and 18 were clerical employees. No indication was made of the use of shorthand by these secretaries or stenographers. When asked to rank the value of previous courses as to present job value,

²⁴Kathleen Kalchoff, "The Application of Shorthand Training by Graduates of Granite City High School" (unpublished Master's thesis, Illinois State University, 1962).

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shorthand was rated as the first most valuable course by 20 graduates, the second most valuable course by 30 graduates, and the third most valuable by 12 graduates out of 62 graduates who responded to this question.

Of 39 graduates who reported minimum shorthand speeds required by employers, 25 or 64.1 percent said a speed of 80 words per minute was required. A further breakdown of speed requirements indicated that 7 or 18.0 percent of the 39 respondents said that 60 up to 80 words per minute were required, 27 or 69.2 percent said 80 up to 100 words per minute were required, and 5 or 12.8 percent said that shorthand speeds of 100 up to 120 words per minute were required of them by employers.

Duties the former shorthand students had performed on the job included composing letters (59.4 percent) and transcribing from a dictaphone (32.6 percent). Typing from handwritten copy was a job performed by 80 percent of the graduates on either their current or on a previous job.

Kalchoff also studied employers' replies to questionnaires sent to 20 businesses which frequently employed graduates of Granite City High School. They indicated that 95 percent of the firms employed Gregg shorthand writers, 7 (35 percent) said other shorthand systems were used in their firms, and 12 (60 percent) indicated that voice writing machines were used in the firms they represented.

Employers emphasized that students should have better training in spelling, grammar, and vocabulary.

Kalchoff stated that students who planned to become stenographers or secretaries should be encouraged to take four semesters of shorthand plus secretarial training since evidence indicated that students with the

greatest amount of shorthand training made more vocational use of shorthand than those with less shorthand training. She concluded that only in exceptional instances could stenographic or secretarial positions be acquired by persons with only two semesters of high school Gregg shorthand.

The Kanger Study

Kanger²⁵ mailed questionnaires to 133 (84 respondents or 67.2 percent) of the two-year program in business education at the College of Saint Mary (Omaha, Nebraska) and to 40 of the employers of these graduates to determine the extent to which the business training they had received had been of practical value and to discover in the light of the findings if there were areas in the curriculum that needed revision.

The business education program consisted of two divisions: secretarial and clerical. All secretarial students were required to take shorthand. It was not indicated in the study how many of the respondents had been enrolled in the secretarial or clerical divisions of the business education program, consequently, it was not known to this researcher how many of the former students had studied shorthand.

At the time of the study, 46 (54.8 percent) of the graduates were employed full time and 1 (1.2 percent) of the graduates was employed on a part-time basis.

Of the 47 employed graduates, Kanger found that 29 (61.7 percent) reported that they composed letters with instructions as to content while 24 (51.0 percent) said they composed letters without instructions as to content.

Copying from rough drafts or corrected copy was a duty performed by 31 or 65.9 percent of the graduates.

²⁵Sister Mary Edwarda Kanger, "A Follow-up Study of the Graduates of the Two-Year Secretarial Program at the College of St. Mary, Omaha, Nebraska, 1958-1963" (unpublished Master's thesis, Catholic University of America, 1965).

Of the 47 employed graduates, 28 (59.6 percent) indicated that they took dictation in shorthand and transcribed, and 19 (40.4 percent) said they transcribed from machine dictation.

Of the 40 responding employers, 31 (77.5 percent) said that they had secretarial positions open to graduates of a two-year business program.

Employers indicated the following duties were among those most frequently performed by beginning secretaries: compose letters with instruction as to content (52.5 percent), compose letters without instruction as to content (40.0 percent), copy from rough draft (50.0 percent), take and transcribe dictation (42.5 percent), take dictation directly at the typewriter (12.5 percent), and transcribe from machine dictation (52.5 percent).

Employers stressed the importance of the following traits in employees: ability to follow instructions, dependability, accuracy, honesty, and common sense.

Basic shorthand skill requirements of 80 - 100 words per minute were required of beginning office workers as indicated by 21 or 52.5 percent of 40 participating companies. Of these companies, representatives of 15 or 37.5 percent indicated that no shorthand was required of beginning office workers.

The Kelly Study

Kelly²⁶ studied the secretarial graduates of Notre Dame High School, a diocesan school for girls in Moylan, Pennsylvania, in an effort to evaluate the "true effectiveness" of their secretarial program. Using the normative-survey method, Kelly sent questionnaires to former students to find out how well the high school curriculum had prepared the graduates for their initial full-time positions.

At the time of the survey there were 104 former students working full time and 2 working part time of the 120 responding graduates.

When asked to respond to the usefulness of business subjects studied at Notre Dame High School, 38 students reported having studied business English and 38 felt it was useful; 120 students had studied shorthand and 111 stated it was useful while 9 had no immediate use; and of 120 students who had studied typewriting, 119 thought it was useful, but 1 had no immediate use for the skill.

When asked which business machines were used by the graduates, 63 (over 50 percent) reported using the transcribing machine "often," 9 "occasionally."

In another question, Kelly asked how frequently some secretarial duties were performed by the former students. She found that 79 indicated that they transcribed from shorthand or from the transcribing machine "often," 39 "occasionally"; 63 former students indicated that they composed letters at the typewriter "often," 40 "occasionally"; and 12 indicated that they used the teletype "often," 12 "occasionally."

²⁶Sister Rose Marie Kelly, S.N.D. de Namur, "A Follow Up Study of the Graduates with Secretarial Training at Notre Dame High School, Moylan, Pennsylvania 1962-1965 Inclusive" (unpublished Master's thesis, Catholic University of America, 1968).

Employers of the former graduates were also surveyed to find out what duties they required of these graduates. Of the 118 respondents, 109 indicated the duty of "taking dictation," 102 indicated "composing letters at the typewriter," 97 indicated "typing from rough draft or handwritten copy," 76 indicated "typing cablegrams or telegrams," 24 indicated "using the teletype," and 72 indicated "using the transcribing machine."

Over 100 of the 118 employer respondents also indicated that they regarded the following attitudes or traits as very valuable in employees: accuracy, dependability, appearance, cooperation, initiative, neatness, and punctuality. They also put strong emphasis on the importance of spelling, grammar, and punctuation.

The Lamb Study

Lamb²⁷ surveyed, by means of mailed questionnaires, prominent business firms in the United States with a minimum of 100 employees and including several industrial classifications using Dun & Bradstreet's Million Dollar Directory, 1966 as a source document.

The purpose of her study was to provide a basis for the improvement of the stenographic program in the secondary school.

Initially she sent letters requesting job descriptions and specifications of beginning stenographic jobs to 200 business firms throughout the continental United States excluding Alaska from which she received 128 responses and 58 included complete sets of job descriptions. She then contacted 90 of the responding firms which had expressed a willingness to be of further service with regard to 99 stenographic and entry-level positions. Eighty-one of the 99 firms responded with 55 usable checklists.

Supervisory personnel were asked to respond to a checklist of activities performed by beginning stenographers. The supervisory personnel most often responding were personnel assistants, employment supervisors, personnel directors, and supervisors of training.

Lamb defined the beginning stenographer at the beginning of the checklist as one who takes shorthand dictation either manually or by machine and transcribes at the typewriter. Of 55 business firms responding to the checklist, 55 (100 percent) indicated that taking dictation in shorthand and transcribing was a requirement of the beginning stenographer. Originating routine correspondence was a requirement of 65 percent of the

²⁷Mary Lou Lamb, "The Relevance of Stenographic Instruction in the Secondary School to Entry-Level Stenographic Positions" (unpublished Doctor's dissertation, Indiana University, 1969).

55 firms, and composing correspondence from brief notes or oral directions was required by 69 percent of the responding firms. Transcribing machine-recorded dictation was required of beginning stenographers in 60 percent of the 55 firms.

Lamb also sought information from the teachers of advanced stenographic courses in 145 Indiana secondary schools accredited by the North Central Association of Colleges and Secondary Schools to obtain information regarding the amount of emphasis placed on stenographic activities. In most cases she found that teachers' expectations exceeded business requirements with reference to the stenographic duties mentioned previously.

Reviewer's Comments

This study was included in the review of research since it was felt by this reviewer that in many companies the promotional path to the role of secretary leads from service in a stenographic capacity.

11

The Lanham, Lanham, Herschelmann, Cook Study²⁸

As background information for this study, the authors wrote the following as part of the total problem of curriculum renewal for office education:

New Office and Business Education Learnings System (NOBELS) is a long-range curriculum renewal project in which the current report is of the first phase. Utilizing a system model, NOBELS' overall function is to assess and modify learning programs in which purposes are preparation for office jobs. The bases of modification of office learnings programs are educational specifications or behavioral goals in which successful attainment by students are prerequisite to office employment

The purpose of the project reported herein was the development of educational specifications to be used as guides in the modification of behavior of learners necessary for office employment. The focus of each specification was behavior needed for office employment.

A principal criterion for developing specifications for office education has been that they be relevant to tasks as performed in current and emerging office jobs

. . . The office task data were collected by personal interview from 1253 office workers and their supervisors yielding 1232 usable cases. Basic tasks performed by these workers, 4548 in number, were identified, classified, and analyzed²⁹

The researchers designed their study to embrace several Standard Industrial Classifications and predetermined to gather most of the data from metropolitan areas of 100,000 or more population. Large companies, those employing 100 or more workers, represented 81 percent of the 1232 workers. Data collection contracts were located at the University of Minnesota (Minneapolis), the State University of New York (Albany), the

²⁸Frank W. Lanham, Cathryn P. Lanham, Kathleen M. Herschelmann, and Fred S. Cook, "Development of Task Performance Statements for a New Office and Business Education Learnings System (NOBELS)" (Office of Education, U. S. Department of Health, Education, and Welfare Grant No. OEG-0-080414-3733 (085), The Center for Vocational and Technical Education, The Ohio State University, 1972).

²⁹Ibid., p. 1.

University of Georgia (Athens), and the University of California (Los Angeles) while the project director operated under contract with the Center for Research and Leadership Development in Vocational and Technical Education at The Ohio State University (Columbus) and at Wayne State University (Detroit).

When the 1232 interview cases, gathered from workers in the 16-24 year-old category, were grouped into job classifications, the greatest number, 285 (23 percent), were classified as stenographers or secretaries.

The 1232 interviews yielded 4564 task sheets which were generalized into 373 task statements. Of the 373 task statements, the second most frequently performed task was *the worker types dictation from shorthand*. This task was reported 172 times (3.8 percent) in the 4564 task sheets.

Reviewer's Comments

Considering the research report that 285 of those who were interviewed were classified as stenographers or secretaries and that the task *the worker types dictation from shorthand* was reported 172 times, it would seem that about 60 percent of the secretaries and stenographers *used* shorthand in the study by Lanham, Lanham, Herschelmann, and Cook.

The Lawrence Study

Lawrence³⁰ investigated the role of shorthand as an employment tool in business in Minnesota by obtaining information from three sources: the help wanted sections of newspapers, public and private employment agencies, and the female office employees of four businesses in Minneapolis, two in Mankato, three in New Ulm, and one each in Long Prairie and in Browerville (all cities located in Minnesota).

Personnel directors distributed the questionnaires to the female office employees and data from 380 questionnaires were used by Lawrence for his study. There were 34 public and private employment agencies which returned questionnaires regarding requests for female office employees with shorthand training, numbers of requests per month, number of requests filled, and whether placements with shorthand training usually received a higher starting salary. Only Thursday-edition want ads stating a demand for female shorthand workers, a combination of work requiring both shorthand and clerical work, and straight clerical work were studied from six newspapers over a six-month period of time.

He found that 276 (72.6 percent) of the 380 female office workers who responded had taken shorthand from less than one year to more than two years and that 59.9 percent of those who had taken shorthand made use of this skill on the job to some extent. He concluded that the more shorthand instruction received, the more likely that the worker would make use of this skill on the job. Of the employees who took shorthand in high

³⁰Richard E. Lawrence, "The Use of Shorthand by Office Workers in Certain Minnesota Businesses With Implications for the High School Teacher" (unpublished Master's thesis, Mankato State College, 1962).

school only, Lawrence found that 50 percent never used their shorthand skill on the job, whereas only 27 percent of those employees who had studied shorthand in business school or college only did not use their shorthand skill. It was found of those employees who took shorthand in high school plus business school that 23 percent did not use their shorthand skill, and that of those employees who took shorthand in high school and in college that 20 percent did not utilize this skill on the job. Lawrence assumed that perhaps few high schools made use of aptitude tests, grades in English, or intelligence quotients for the purpose of selecting shorthand students and felt that the caliber of the student often precludes success in shorthand.

Lawrence found a direct relationship between high school English grades and frequent use of shorthand on the job. He also found that students who received grades of "A" and "B" in shorthand classes used their shorthand to a greater percentage than did students who received a grade of "C" or less. He also found that students who had achieved high shorthand speeds in high school used their shorthand to a greater degree than did those with lesser speed attainments. He concluded that possibly higher grades in shorthand, gained through high achievement in that course, might be a plus factor in the use of shorthand because high achievers might have more confidence in their ability to succeed.

He found that transcription machines were used by a little more than 25 percent of the office employees who responded, and of those who used the transcription machines, one-fourth used the machines more than they used shorthand, while the other three-fourths used shorthand more than they did the machine.

From the public and private employment agencies, Lawrence found that approximately 45 percent of the requests for clerical workers were for



workers with shorthand skill and that the demand for shorthand-trained clericals far exceeded the supply available.

Lawrence reported from his examination of want ads of the six Minnesota newspapers (Thursday editions only) that 26 percent of the want ads, as delimited by Lawrence, examined during a six-month period expressed a demand for workers with a knowledge of shorthand.

The Levine Study

Levine³¹, using mailed questionnaires, analyzed the responses of 196 graduates (66 percent response) of the Washington School for Secretaries, Washington, D. C., in an effort to discover the strengths and weaknesses of the school's training program. She described the school as a "highly regarded private business school that has served the daughters of Washington's upper middle class for over fifty years." The school, which catered to high school graduates and to students with college training, aimed to produce executive secretaries for high-ranking governmental officials, business leaders, and lawyers after a one-year program.

Of the 196 respondents, 155 (79.1 percent) were employed full time and 11 (5.6 percent) were employed on a part-time basis. Nearly 85 percent of the respondents had secretarial positions.

Taking dictation in shorthand was a secretarial duty performed by 96.9 percent of the graduates.

Typing from transcribing machines was a duty performed by 47.5 percent of the respondents.

Other typing duties included typing letters from rough draft (93.8 percent) and from longhand (87.2 percent).

Composing letters was a secretarial duty reported by 90.8 percent of the respondents.

³¹ Elaine S. Levine, "A Follow-up Study of the Graduates of the Washington School for Secretaries (June 1, 1968 through June 30, 1971 Inclusive) with Implications for Curriculum Revision" (unpublished Independent Study, Michigan State University, 1972).

The Lloyd Study

Lloyd³² used mailed questionnaires and studied the responses of 168 women in secretarial positions in the Ogden-Salt Lake City-Provo (Utah) area who were 35 years of age or older, who had a 10-year continuous period of unemployment, and who were formerly employed in secretarial areas in an effort to discover causes of physical and emotional problems encountered by these older secretaries upon their return to secretarial employment.

All of the secretaries had studied shorthand in school; 25 percent of them less than one year, 41 percent from one to two years, and 34 percent had had over two years of training.

Prior to their prolonged absence from employment, 50 of the 168 women surveyed indicated that they were secretaries and 34 said that they were stenographers. At the time of the survey, Lloyd found that 122 of the 168 women indicated their title as secretary, 9 were executive secretaries, and 13 were classified as stenographers. Nearly three-fourths of the 168 respondents had resumed work for over three years.

Fifty-four of the respondents took courses for updating technical skills: 72 percent took shorthand, 58 percent took typewriting.

Lloyd asked respondents to rank the frequency of use of shorthand and use of dictating machines among five clerical skills (rank 5 = most frequently used, rank 1 = least frequently used, 0 = not used). She found the following:

³²Glenna G. Lloyd, "A Study of the Physical and Emotional Factors Required by Women Returning to Secretarial Employment After a Prolonged Absence" (unpublished Master's thesis, Brigham Young University, 1970).

Frequency of
use of shorthandInitial positionPresent position

Rank 1	20	38
Rank 2	8	15
Rank 3	22	32
Rank 4	39	23
Rank 5	67	49
No response	12	11

Frequency of use of
dictating machinesInitial positionPresent position

Rank 1	26	30
Rank 2	15	14
Rank 3	8	10
Rank 4	6	18
Rank 5	14	18
No response	99	78

Reviewer's Comments

It is not known to this researcher if Lloyd meant by "No response" if the respondent left the place for a response blank or if the respondent marked a "0" to indicate that the skill was "not used."

The Malsbary Study³³

Beginning office workers were studied in the state of Connecticut, under the direction of Dean Malsbary, in cooperation with and funded by the Division of Vocational Education, State Department of Education, Hartford, Connecticut. The purposes of the study were to identify the office job-entry positions in business firms located in Connecticut; the nature of the work assigned to beginning workers; and the knowledges, skills, attitudes, and understandings they need in order to perform their duties.

He found that the four courses taken by the greatest number of beginning office workers were typewriting (83 percent), bookkeeping (58 percent), shorthand (46 percent) and business arithmetic (36 percent). He also found that typewriting, shorthand, and bookkeeping skills were most often cited as those of which full advantage was not taken by the companies, which caused considerable dissatisfaction among beginning office workers.

³³Dean R. Malsbary, "A Study of Beginning Office Workers in Connecticut" (Independent Study, University of Connecticut, Storrs, Connecticut, 1967) as cited by Don J. Scalamogna in "A Survey to Determine Office Positions for Initial Employment of the High School Graduate with Recommendations for Updating the Business Education Curriculum (unpublished Doctor's dissertation, University of Houston, 1969).

The Marcellis Study

Marcellis³⁴ sent questionnaires to 107 graduates (96 respondents or 89.7 percent) of the secretarial program at Saint Peter High School, New Brunswick, New Jersey (1962-1964, inclusive) to determine the extent to which the secretarial program was meeting the needs of its graduates.

When asked to rate the value of shorthand, the respondents replied as follows: 38 (39.6 percent) considered shorthand to be great value, 19 (19.8 percent) said shorthand had been of some value, and 39 (40.6 percent) said shorthand had been of little worth to them.

Of the 73 graduates who were currently working full time, Marcellis asked the frequency of taking dictation on the job. They replied as follows: very often (11 or 15.1 percent), often (13 or 17.8 percent), seldom (16 or 21.9 percent). This finding was considered to be of great significance to Marcellis and she questioned the justification for the amount of time (two full years) devoted to the development of this skill. She felt that perhaps certain adaptations might be advisable in this regard.

She found that although office work was available, the use of shorthand by the secretarial graduates of Saint Peter High School was apparently not utilized by the businesses employing them, although all of them had completed two years of shorthand in the secretarial program.

Other findings: shorthand tests were given to 24 (32.9 percent) of the graduates prior to employment, 16 (21.9 percent) of the 73 working graduates used the dictating-transcribing machine, and nearly 60 percent of the graduates composed letters on the job.

³⁴Sister Anita Charles Marcellis, S.C., "A Follow-Up Study of the Secretarial Department of Saint Peter High School, New Brunswick, New Jersey for the Years 1962 - 1964, Inclusive, with Implications for Curriculum Revision" (unpublished Master's thesis, Catholic University of America, 1966).

The McCrea Study

McCrea³⁵ sought to determine what business firms required of applicants, specifically high school graduates, seeking initial employment in clerical positions in 66 business firms located in Sonoma and Marin Counties of California. The 66 companies, which were selected by McCrea because in his judgment they were representative of the two counties, employed 2052 clerical employees and crossed several Standard Industrial Classifications.

He found that 85 percent of the firms surveyed indicated that they had employment opportunities for inexperienced high school graduates and that 74 percent of the personnel managers specified that typing was the most important skill for an applicant to possess while 23 percent rated shorthand as an important skill for an applicant.

Reviewer's Comments

In the opinion of this researcher, the demand for shorthand by the personnel directors of the 66 companies seemed low, but perhaps this was because the thrust of McCrea's study seemed to be directed towards information regarding clerical positions in general and not secretarial positions specifically.

³⁵Wendell McCrea, "An Analysis of Employment Requirements for Applicants for Clerical and Secretarial Positions in Selected Sonoma County and Marin County Businesses" (unpublished Master's thesis, San Francisco State College, 1964).

The McKee Study

McKee³⁶ mailed questionnaires to administrators and secretaries in 89 Seventh-Day Adventist organizations in the United States and Canada to determine differences in purpose and functions of church-oriented (Seventh-Day Adventist) offices from those of business-oriented offices.

She felt that the secretarial training and curriculums of training institutions should be consistent with the needs and the interests of the businesses they serve.

She received 275 completed questionnaires from administrators (47.9 percent response) and 285 questionnaires from secretaries (54.6 percent response). She compared these responses with previous studies related to business-oriented offices. The responses came mainly from small offices.

Of particular interest to this researcher were McKee's findings in the area of communication. She found that 32 percent of the secretaries used the voice machine entirely for transcription, 14 percent used shorthand notes exclusively for transcription while the remaining 54 percent used a combination of voice transcription and shorthand.

When the duties of the secretaries were ranked according to the time spent per week, McKee found the following in a list of 61 duties: *rank 2*, transcribe from a voice machine (227.5 average minutes per week per secretary), *rank 11*, compose letters (67.5 average minutes per week per secretary), *rank 15*, transcribe from shorthand notes (55.0 average minutes per week per secretary), and *rank 28*, take dictation (30.0 average minutes per week per secretary).

³⁶Lois Evelyn McKee, "An Analysis of Secretarial Work in Seventh-Day Adventist Offices to Identify the Factors that Differ from a Regular Business Office and to Determine How Seventh-Day Adventist Colleges Can Prepare Secretaries for These Differences" (unpublished Doctor's dissertation, University of Nebraska, 1968).

The Olson Study

Olson³⁷ surveyed, by means of mailed questionnaire-opinionnaires, 500 businesses (68 percent response) in the Minneapolis-Saint Paul, Minnesota area in an effort to find out if dictating machines were replacing shorthand writers. Of the total firms, 102 (82 percent response) had 500 or more employees and were classified as large firms.

Of the 339 responding businesses, 89 (26 percent) were manufacturing concerns and 88 (26 percent) were service organizations. Of the 84 businesses classified as large, 39 (47 percent) were manufacturing firms and 18 (21 percent) were engaged in service operations.

Olson defined secretaries as employees who used or needed shorthand in connection with their assigned duties and defined a dictating-machine operator as an employee who typed from a dictating machine. This reviewer questioned whether a dictating-machine operator could ever be classified as a secretary or whether a secretary needs to know or use shorthand. Are Olson's definitions of a secretary and of a dictating-machine operator mutually exclusive?

Olson concluded that because 73 percent of the total firms which responded to her survey employed secretaries and stenographers (27 percent of the responding firms employed no shorthand writers), and because 95 percent of the large firms, included in the total firms in the survey, employed secretaries and stenographers that "large use is made of people with shorthand skill."

In response to a question asking if firms employed office personnel because they have had shorthand, even though it may not be used on the job,

³⁷Adelyn Olson, "Comparison of Shorthand and Machine Transcription Utilization in Selected Firms in Minneapolis and St. Paul, Minnesota Area" (unpublished Master's thesis, Wisconsin State University [Eau Claire], 1969).

Olson reported that 34 percent of the 339 firms indicated a shorthand background was preferred when employing office workers and 47 percent of the large businesses expressed a preference for personnel with shorthand skills even though shorthand might not be necessary for the job.

When asked if the need for shorthand writers was on the decline in proportion to the number of office personnel, 41 percent of the 339 firms indicated that shorthand was not declining, while 26 percent indicated that the need for shorthand writers was declining. Large firms reporting on this question indicated that 52 percent thought that the need for shorthand writers was not declining proportionally to the number of office personnel, while 42 percent stated that the need for shorthand writers was declining.

In response to a question regarding anticipated need for secretaries and stenographers, 16 percent of the total firms and 31 percent of the large firms indicated a decrease in need, while 10 percent of the total firms and 17 percent of the large firms indicated an increase in need.

Dictating machine operators were reported in 60 percent of the total firms and in 89 percent of those classified as large businesses.

When asked to indicate anticipated need for dictating machine operators, 26 percent of the total respondents and 41 percent of the large firms indicated an increase in need, while 3 percent of the total firms and 5 percent of the large firms predicted a decrease in need for dictating machine operators.

Of 168 firms which indicated specific shorthand speed requirements (rather than grouped speed requirements such as 60, 80, 100 w.p.m.), 20 firms or 11.9 percent specified 60 up to 80 words per minute, 87 or 51.8 percent specified 80 up to 100 words per minute, and 11 or 6.6 percent specified 120+ words per minute.

The specific speed requirement of 80 w.p.m. was the speed which was most frequently mentioned by 85 or 50.6 percent of the 168 respondents.

Olson found that when firms were categorized according to the numbers of secretaries and stenographers employed that the most frequent response was the 1-10 secretary-stenographer class. She also found that when the firms were categorized according to the numbers of dictating machine operators employed that the 1-10 category received the most frequent response.

Reviewer's Comments

This reviewer questioned Olson's conclusion that because 73 percent of the total firms, which responded to her survey, employed secretaries and stenographers, and because 95 percent of the large firms, included in the total firms in the survey, employed secretaries and stenographers that "large use is made of people with shorthand skill." Do secretaries and stenographers necessarily ~~use~~ shorthand skills on the job?

The Paddock Study

Paddock³⁸ studied 50 high-level secretaries and their employers, which constituted secretary-executive teams, by means of personal interviews in an effort to form an accurate definition of the high-level secretarial position and to improve development of high-level secretarial personnel. She also interviewed 35 personnel directors, but found that although they were aware of the requirements and the assignments of the secretary's position, their data inputs were not as reliable a source as the secretary-executive teams.

A list of secretaries serving in top-level secretarial positions was compiled through conferences with members of the National Secretaries Association, members of the National Office Management Association, and officers of the Indianapolis Chamber of Commerce.

Seventy percent of the secretaries had a formal education beyond high school. They served as secretaries to presidents of companies, vice presidents, managers, doctors, lawyers, the governor, the state superintendent of public instruction, the mayor, and other executives.

She found that replies of the executives to written communications were dictated to the secretary who took the dictation in shorthand and transcribed from her shorthand notes by 37 of the secretaries (74 percent). Replies were transcribed from machine records and from shorthand notes by 8 of the secretaries (16 percent). Two (4 percent) of the secretaries transcribed from machine records only and two (4 percent) transcribed from longhand notes. The media used in dictation-transcription, therefore, included: shorthand exclusively, 74 percent; shorthand combined with dictating-transcribing machines, 90 percent; dictating-transcribing machines

³⁸Harriet Louise Paddock, "The Nature of the Need for the Development of Personnel for High-Level Secretarial Positions" (unpublished Doctor's dissertation, Indiana University, 1967).

exclusively, 4 percent; and dictating-transcribing machines (in combination with shorthand) 40 percent.

Six percent of the secretaries knew no shorthand and utilized longhand to record replies from the executives.

Some secretaries recorded dictation over the telephone and there were times when secretaries recorded in shorthand the telephone conversation of the executive with another party.

Paddock found that 54 percent of the secretaries interviewed answered 9 percent or less of the mail (16 percent answered over 50 percent) since most of the mail was of a technical or policy-making nature which required a response by the executive.

Most of the typing jobs which came to the secretary were in longhand form and the next most frequent form was her own shorthand notes.

Paddock found that the most frequent form of typing job performed by the secretary was letters followed by memoranda, reports, minutes, speeches, and forms to be filled in.

The most frequent forms of dictation given secretaries were letters and interoffice memoranda; but speeches, reports, and agenda were also dictated.

At times, dictation was given to the secretary by others as well as by the executive.

Ninety-four percent of the secretaries who were interviewed felt that the secretarial skills of shorthand and typewriting should be developed well above the average. Fifty percent felt that these skills should be developed to the highest degree of the secretary's capability.

Most of the executives thought that accuracy was more important than speed in skills. Twelve percent of the executives did not believe shorthand skill was essential for secretaries, considered shorthand skill less important than typing skill, or did not mention skills during the interviews.

1

The Powell Study

Powell³⁹ used mailed questionnaires to conduct a follow-up study of 296 graduates (222 respondents or 75 percent) of the North Dakota State School of Science in an effort to determine the effectiveness of the stenographic-secretarial curriculum. Of the 222 graduates of the stenographic-secretarial curriculum during 1957-1963, 118 had received a one-year diploma and 61 had completed two years of study. Shorthand speeds at the time of graduation were reported by 199 of the respondents: 187 reported speeds of 80 words per minute or above, while 12 reported speeds of between 50 and 80 words per minute.

Initial office positions of "secretary" were reported by 101 of the graduates and since graduation, 136 respondents indicated that they had held secretarial positions.

When asked the frequency of use of stenographic and secretarial skills, the respondents reported the following: *rank 17*, composing letters, 60 (27 percent) said "frequently," 106 (48 percent) said "occasionally," and 56 (25 percent) said "never"; *rank 23*, taking dictation in shorthand and transcribing, 96 (43 percent) said "frequently," 54 (24 percent) said "occasionally," and 72 (32 percent) said "never"; *rank 36*, typing from oral dictation, 29 (13 percent) said "frequently," 72 (32 percent) said "occasionally," and 121 (55 percent) said "never"; *rank 39*, transcribing from a dictaphone, 57 (26 percent) said "frequently," 37 (17 percent) said "occasionally," and 128 (58 percent) said "never"; *rank 43*, taking dictation over the telephone, 8 (4 percent) said "frequently," 79 (36 percent) said "occasionally," and 135 (61 percent)

³⁹Noel G. Powell, "A Follow-up Study of the 1957-1963 Stenographic-Secretarial Graduates of North Dakota State School of Science, Wahpeton, North Dakota with Implications for Curriculum Revision" (unpublished Master's thesis, University of North Dakota, 1964).

rank 46.5, operating a voice writing machine (dictaphone), 55 (25 percent) said "frequently," 26 (12 percent) said "occasionally," and 141 (64 percent) said "never"; and *rank* 67.5, taking dictation at conference and committee meetings, 9 (4 percent) said "frequently," 26 (12 percent) said "occasionally," and 187 (84 percent) said "never."

Powell recommended that shorthand students be encouraged to achieve shorthand speeds ranging from 100 to 120 words per minute since he felt that this speed range would "insure employability" for stenographic work in most offices.

Reviewer's Comments

This reviewer did not understand the distinction between Powell's *rank* 39, transcribing from a dictaphone and his *rank* 46.5, operating a voice writing machine (dictaphone).

1

The Scalamogna Study

Scalamogna⁴⁰, seeking information pertaining to initial employment opportunities in the metropolitan Houston area, mailed questionnaires to a population of 2,784 randomly selected businesses and industries which were classified into ten major industrial classifications and which employed four or more persons. These 2,874 business firms were divided into four groups of 696 firms, and each group was studied to obtain information regarding initial employment opportunities in one of the following areas: (1) bookkeeping, (2) data processing, (3) general office, and (4) stenographic-secretarial.

He found that of the 1,036 (37.2 percent) responding firms that 66.8 percent did not have initial employment opportunities for high school business graduates without previous experience and post high school education. Of the 345 companies (33.2 percent) which indicated that they did employ high school business graduates, those firms with 100 or more employees had the highest percentage of employment opportunities.

Scalamogna's findings in the stenographic-secretarial office work area revealed that employers required some ability in manual or machine shorthand in all of the beginning stenographic-secretarial positions available to high school business graduates with no previous experience in office work and no post high school education. Of the 345 firms which reported that they did employ high school business graduates, 44 percent or 152 firms had employment opportunities in the stenographic-secretarial area.

⁴⁰Don J. Scalamogna, "A Survey to Determine Office Positions Available and Knowledges and Skills Needed for Initial Employment of the High School Graduate with Recommendations for Updating the Business Education Curriculum" (unpublished Doctor's dissertation, University of Houston, 1969).

Of 20 employers who indicated shorthand speed requirements, 11 or 55 percent required 60 to 80 words per minute, while 9 or 45 percent said that 80 to 100 words per minute met the speed requirements of their firms.

Scalamogna also sought information on duties performed by beginning office workers. Of the 29 respondents, 14 reported that they studied shorthand in high school. When workers were asked what additional office knowledges and skills they needed in their work that they did not learn in high school, shorthand was mentioned by four. When asked to indicate what skills and knowledges they learned in high school that were not needed in their present positions, shorthand was indicated six times. Ten of the 14 beginning office workers who had studied shorthand indicated that they took dictation using a manual shorthand system.

Of the ten employees who reported that they took dictation using a manual shorthand system, four considered a speed of between 60 and 80 words per minute, four considered a speed of between 80 and 100 words per minute, and one indicated a speed of over 100 words per minute as necessary speeds to perform dictation duties in their present positions. One employee did not indicate a specific shorthand dictation speed.

The Statler Study

Statler⁴¹ used mailed questionnaires to study the responses of 214 graduates of St. Vincent Ferrer High School, located in the "heart" of New York City, in an effort to determine the vocational use they had made of their shorthand training. There were 286 questionnaires mailed to the 1955, 1956, and 1957 graduates who had successfully completed two years of shorthand training.

She found that 50 percent of the two-year shorthand graduates were required to have shorthand skill in order to obtain their first jobs. Statler reminded the readers of her study that the employer often requires shorthand skill as a prerequisite for a job regardless of whether or not it will actually be used on the job.

She also added that many times the would-be employee was not required to know shorthand in order to obtain a position, but that subsequently he might use it on the job.

Of the 214 respondents, she found that 115 (55.8 percent) used shorthand on their initial jobs, 97 (45.3 percent) did not use shorthand on their initial jobs, and 2 (.9 percent) did not respond to this inquiry. She found also that 50 percent of the 214 respondents were required to know shorthand in order to obtain their initial jobs.

At the time of her study, Statler found that 95 (44.4 percent) of the graduates were using shorthand currently, 76 (35.5 percent) were not using shorthand, and 43 (20.1 percent) of the graduates did not respond.

Of those currently using shorthand on the job, 44 were secretaries and 29 were stenographers as reported by employers of the graduates.

⁴¹Sister Rose Clement Statler, "A Study of Vocational Usage of Shorthand by the 1955, 1956, and 1957 Graduates of St. Vincent Ferrer High School, New York City (unpublished Master's thesis, Catholic University of America, 1960).

The Vrieze Study

Vrieze⁴² mailed questionnaires to 227 (139 respondents or 61.2 percent) former students of Rice Lake High School (Wisconsin) who were graduated in the years 1966 to 1970 and who had completed a minimum of one year of shorthand with a passing grade to identify the actual use of shorthand in the performance of a job.

A second year of shorthand had been completed by 57 (41 percent) of the responding graduates.

Of the 82 responding students who had completed only one year of shorthand, 32 (39 percent) used their shorthand skill, while 61 percent indicated that they had not found their shorthand skill of any use.

Of the 57 responding students who had completed two years of shorthand, 38 (66 percent) reported using their skill and 34 percent stated that their shorthand had not been of use to them either on their jobs or for personal use.

Of the 139 respondents, 92.1 percent had been employed since high school graduation with 32 percent indicating that they held office positions.

Of the 139 graduates, 80 percent indicated that they composed letters, and the use of the transcription machine was reported by 26 percent of those who had completed Shorthand I and by 54 percent of those who had completed Shorthand II.

⁴²Nancy Vrieze, "A Follow-Up Study of Shorthand Students Graduating from Rice Lake, Wisconsin, High School from 1966 to 1970" (unpublished Master's thesis, The University of Wisconsin [Eau Claire], 1971).

The Wagoner Study

Wagoner⁴³ sent questionnaires to the personnel directors of 250 Indiana firms in four Standard Industrial Classifications. The personnel directors were to ask a secretary and an executive, who formed a secretary-executive team, to complete the questionnaires. Nine percent of the firms indicated that they employed no secretaries. One hundred forty-five (58 percent) returned both questionnaires in usable form. She sought to determine what effect, if any, the changing world of work had upon the role of the secretary and to determine the significance that such changes would have for the educational preparation of secretaries.

She asked executives to indicate those functions and duties which they would expect their secretary to perform and compared these responses with the responses to the secretaries' questionnaires. The secretaries were asked to indicate those functions and duties that they performed on the job. She indicated that a significant difference in the responses of the executives and secretaries would be declared to exist only if there was a difference at a confidence interval of 95 percent.

Regarding methods of handling business correspondence (written communication) she found that executives expected their secretaries to take dictation in shorthand and transcribe as follows: always, 59 percent; often, 20 percent; sometimes, 13 percent; rarely, 1 percent; and never, 5 percent.

Secretaries, when asked how frequently they took dictation and transcribed, responded: always, 63 percent; often, 14 percent; sometimes, 11 percent; rarely, 3 percent; and never, 8 percent.

⁴³Kathleen Parker Wagoner, "The Role of the Secretary in a Changing World: An Analysis of the Duties and Functions Performed by the Secretary" (unpublished Doctor's dissertation, The University of Iowa, 1967).

Executives indicated that they expected secretaries to compose written communications from oral directions in 95 percent of the responses and secretaries indicated that they performed this function in 96 percent of their responses.

Answering routine correspondence without directions was a role expected of secretaries by 94 percent of the executives and was performed by 95 percent of the secretaries.

Handling business correspondence by means of copying from the employer's longhand notes (completely written out) was a duty expected of secretaries by 93 percent of the executives and a duty which 93 percent of the secretaries reported doing.

Composing from the employer's longhand notes (fragments) was a duty executives expected of their secretaries in 88 percent of the responses and a duty performed by 85 percent of the secretaries.

Preparing rough drafts of responses to correspondence was a task expected of their secretaries by 85 percent of the executives and a task performed by 76 percent of the secretaries.

Transcribing from a volcawriting machine was expected of secretaries by 57 percent of the executives and 40 percent of the secretaries reported that they performed this duty.

Jotting an answer in the margin of incoming correspondence, making a copy on a copying machine, and sending the original or the copy to the correspondent was a method of handling business correspondence expected by 67 percent of the executives and performed by 58 percent of the secretaries.

Taking direct dictation at the typewriter was a role expected of secretaries by 69 percent of the executives and a role performed by 71 percent of the secretaries.

Executives indicated that they expected secretaries to take dictation by means of a notetaking machine (e.g., Stenotype) and transcribe in 34 percent of their responses while 12 percent of the secretaries indicated that they handled business correspondence in this manner.

The Janet Weber Study

Weber⁴⁴ conducted experimental research with students enrolled in beginning Gregg shorthand and Stenoscript ABC shorthand at Fairview High School, Boulder, Colorado, during the 1967-1968 academic year to compare the productivity of those students after one year of shorthand.

Her study was prompted by the queries of several business education teachers in her area who felt that perhaps Gregg shorthand was not meeting the needs of their students because a student had to study this shorthand system for two years in order to become proficient. The teachers also felt that the demands on the students from other fields of education had caused a decline in enrollment in shorthand classes because it took two years of study of Gregg shorthand to become adept.

The students in Weber's study were matched according to Lord-Thorndike IQ scores, verbal scores from the Iowa Test of Educational Development, and average English grades. The two shorthand groups were taught by the same teacher.

All achievement tests were based on typewritten transcripts only. No student in either group transcribed more than 80 words a minute at the end of the first year.

She found that in all instances the Stenoscript ABC shorthand students performed better than the Gregg shorthand students.

Based on an assumption that a vocational skill is reached when the speed of dictation of 80 words a minute and 90 percent accuracy are acceptable, Weber concluded that Stenoscript ABC shorthand should be incorporated into the curriculum to train students for vocational use.

⁴⁴Janet Rae Weber, "An Experimental Study to Compare Productivity of Stenoscript ABC Shorthand with Gregg Shorthand" (unpublished Master's thesis, University of Colorado, 1968).

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The Warren Weber Study

Weber⁴⁵, using a Q-sort design with 60 secretarial skills, knowledges, and personal traits identified on 60 cards, sought to determine curriculum priorities in the training of secretaries based upon an analysis of the opinions of 83 secretaries who were members of the National Secretaries Association, 31 executives, and 22 secretarial-block, vocational office education teachers. All participants were located in the Phoenix, Arizona metropolitan area.

For purposes of analysis, the cards were assigned to three major areas: Fundamental Skills and Knowledges, Specialized Skills and Knowledges, and Personal Qualities or Traits.

He found that all three groups (secretaries, executives, and teachers) considered Personal Qualities or Traits to be more important than Specialized Skills and Knowledges or Fundamental Skills and Knowledges.

Of the 60 items, those ranked of highest importance for secretarial success by secretaries were: acceptance of responsibility or relieving the executive of routine, dependability or ability to be relied upon, accuracy in the performance of duties, initiative or resourcefulness or doing things without being told, and judgment and common sense.

Of the 60 items, those ranked of highest importance for secretarial success by executives were: dependability or ability to be relied upon, accuracy in the performance of duties, judgment and common sense, ability to grasp and follow instructions, and ability to plan and organize work.

Of the 60 items, those ranked of highest importance for secretarial success by secretarial teachers were: cooperation or getting along with

⁴⁵Warren C. Weber, "A Q-Sort Study of Curriculum Priorities in Secretarial Education" (unpublished Doctor's dissertation, Arizona State University, 1969).

others, accuracy in the performance of duties, judgment and common sense, ability to grasp and follow instructions, and a thorough knowledge of the basic tools of English - grammar, spelling, punctuation, vocabulary, and writing.

In a sub-category of Specialized Skills and Knowledges within the broad area of Fundamental Skills and Knowledges, all three rating groups selected as the single most important item that of taking and transcribing dictation from shorthand or Stenotype. Within the same broad area, but in a sub-category Fundamental Communication Skills and Knowledges, all three rating groups selected a thorough knowledge of the basic tools of English - grammar, spelling, punctuation, vocabulary, and writing - as the single most important item.

One of Weber's conclusions was that teachers placed relatively too much emphasis on typing, stenographic, and machine activities since secretaries rated these activities as significantly less important than did the teachers. He assumed that secretaries actively performing on the job had a better knowledge of what truly is important for success in secretarial work than did teachers who might not have had recent work experience and, therefore, he felt that teachers should reexamine their opinions in comparison to secretaries' opinions.

The Webster Study

Webster⁴⁶ surveyed, by means of mailed questionnaires, 86 graduates (1959 through 1966) of the Cedar City High School (Cedar City, Utah) one-year symbol shorthand (Simplified Gregg) program to find out the use they had made of their skill.

Of the 86 responding graduates, 49 (57 percent) maintained that the one-year shorthand program was of little or no value for vocational purposes while the remaining 37 (43 percent) rated their shorthand as either of value or as very valuable.

Forty-nine (57 percent) reported that the one-year shorthand program was of little or no value for personal-use purposes, but the remaining 37 (43 percent) reported value for personal-use activities.

Webster found that 63 (73 percent) of the 86 respondents felt that four semesters of study were necessary for vocational skill development and 12 (14 percent) indicated that three semesters would be sufficient.

He found that 30 (34 percent) of the 86 responding graduates had taken additional training at an institution of higher learning either for the purpose of fulfilling requirements for graduation and/or to increase their shorthand skill. Seventeen of the 30 graduates (57 percent) who had taken additional training beyond high school, took additional shorthand specifically to increase their skill.

Webster also found that 26 of the 86 responding graduates had held secretarial jobs since graduation of which 8 reported shorthand was very valuable, 11 said it was valuable, and 7 (26.9 percent) said shorthand was of little or no value to them as secretaries.

⁴⁶Richard Manning Webster, "A Survey of the Cedar City High School Graduates Who Have Taken the One-Year Gregg Shorthand Course" (unpublished Master's thesis, Utah State University, 1968).

Reviewer's Comments

It was not known by this investigator if those who worked as secretaries were those who had taken additional courses in shorthand beyond the one-year course at Cedar City High School.



The Wiswell Study

Wiswell⁴⁷ compared the responses of 69 business teachers (72 percent return) representing 14 California school districts and 190 personnel directors representing businesses, industries, and government agencies (63 percent return) in the Los Angeles-Orange County area of Southern California to determine the compatability of the two groups regarding typewriting, shorthand, and transcription standards for junior stenographers.

The data, gathered by means of mailed questionnaires, revealed that approximately 12 percent (22 companies) of the 190 responding companies did not employ junior stenographers. Wiswell assumed that many of the nonresponding companies did not have such a job classification.

Wiswell found that shorthand speeds of 60 - 79 words per minute were acceptable to 20 or 13.4 percent of 149 businesses and to 3 or 4.8 percent of the business teachers. Shorthand speeds of 80 - 99 were acceptable to 113 or 75.8 percent of the businesses and to 38 or 61.3 percent of the business-teacher respondents. Shorthand speeds of 100 - 119 were required by 10.7 percent of the businesses and by 30.7 percent of the business teachers. Personnel directors did not require speeds above 120 words per minute, but 3.2 percent of the business teachers sought to have students achieve these speed levels.

Generally business teachers sought higher speed standards of shorthand students than businessmen required of junior stenographers.

⁴⁷Sue Ann Wadt Wiswell, "A Survey of Entry-Level Job Standards for Junior Stenographers" (unpublished Master's thesis, California State College [Long Beach], 1968).

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