A WORD PROCESSING CURRICULUM MODEL

FOR POST-SECONDARY EDUCATIONAL

INSTITUTIONS

APPROVED:

Graduate Committee:

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Major Professor

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Minor Professor

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Dean of the College of Education

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Dean of the Graduate School

A WORD PROCESSING CURRICULUM MODEL

FOR POST-SECONDARY EDUCATIONAL

INSTITUTIONS

DISSERTATION

Presented to the Graduate Council of the

North Texas State University in Partial

Fulfillment of the requirements

For the Degree of

DOCTOR OF EDUCATION

By

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<u>for</u> <u>Post-Secondary</u> <u>Educational</u> <u>Institutions</u>. Doctor of Education (College
Teaching), December, 1978, 242 pp., 50 tables, bibliography, 139 titles.

The problem with which this study is concerned is that of construction
of a curricular model in word processing for post-secondary programs of
business education.

The study has six purposes, as follows: 1) to survey the present
emphasis upon word processing in programs of business education; 2) to
survey the current use of word processing in business; 3) to identify the
characteristic form of word processing systems; 4) to survey the need for
qualified personnel for employment in word processing; 5) to evaluate
current educational practices in educating individuals for positions in
word processing; and 6) to utilize findings from both business and edu-
cation to construct a curricular model for post-secondary educational
institutions.

Data were collected from two sources--educators and businessmen. The
educators were from private business and secretarial schools, junior and
community colleges, and four-year educational institutions located within
the continental United States and having a secretarial education program.
The businessmen were each responsible for the word processing system in
their business organization and were employed in the Dallas-Fort Worth
metroplex.

Questionnaires were first mailed to 897 post-secondary educational
institutions to determine whether the institution had a word processing
program as defined in the study (three or more courses in word processing

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carrying at least two hours credit per course for three courses). A
second questionnaire and a rating sheet were mailed to those institutions
having a word processing program to determine specific topics covered
and emphasis given, equipment used and proficiency level required, and
prerequisites for entering the program.

Thirty-nine businessmen in thirty-six business organizations were
interviewed and asked to complete a rating sheet, which corresponded
with the educators' rating sheet. Business personnel completing the
rating sheet consisted of word processing managers, supervisors, equipment
operators, and administrative support personnel. Each was asked to rate
the entry-level requirements for his or her position.

The rating sheets completed by the educators and business personnel
were compared by means of a Kruskal-Wallis one-way analysis of variance.
The curriculum model was derived from a systhesis of all input data--
review of literature, interviews, questionnaires, and rating sheets.

The data results included the following findings: 1) no separate
word processing course was offered by 73.8 percent of the responding
post-secondary educational institutions; 2) a word processing program
was offered by 2.4 percent of the responding institutions; 3) typing and
English were common prerequisites to word processing courses; 4) most of
the teaching materials used in the courses were vendor products or
teacher-constructed; 5) most of the interviewees felt that from three to
six months' training on the equipment was necessary for proficiency;
6) in the overall comparison of all education responses to all business
responses on the rating sheets, 37.7 percent of the 45 items showed a
significant difference.

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CHAPTER I

INTRODUCTION

Many educators have long been aware of the advantages inherent in
paralleling, as closely as possible, secretarial and business education
with business practice. One of the most recent business innovations
requiring incorporation into business education has been word processing
(WP). During the last twelve years many businesses have found it advan-
tageous to revamp their existing secretarial function to incorporate word
processing.

A few instructional materials relative to word processing have been
published for use by the educator. Many educators are introducing the
concept of word processing in their classrooms; and a limited number of
educational institutions have complete courses or programs in word
processing. This early stage of word processing educational development
is an appropriate time to research business and educational practices and
to present a curricular model for use by post-secondary educational
institutions interested in a word processing program.

With this kind of change in business and business education comes a
new dimension in the traditional image of a secretary. In a word proces-
sing system, secretarial duties are segmented into at least two areas.
Most of the typing duties of the traditional secretary are handled by
typing specialists, usually located in one central location called a word
processing center (WPC), and usually using specialized equipment such as

magnetic keyboard typewriters, common-language high-speed printers, and automatic monitoring transcription tanks.

Remaining duties of the traditional secretary are handled by an administrative support (AS) secretary, who can serve more than one administrator and take on such duties as research assistant, report writer, and routine correspondence dictator. These administrative support secretaries can also be grouped to cover absences and equalize work-loads.

New secretarial job titles emerge simultaneously with new duties. Although the National Secretaries Association objects to the use of the term "secretary" to describe these new positions, (5, p. 14) such titles as "Correspondence Secretary," "Word Processing Secretary," "Associate Administrative Secretary," and "Traditional Secretary" are accepted on a wide scale by businessmen.

A large amount of periodical literature has been published citing benefits businesses have gained through word processing and debating various aspects of word processing: Is it "dehumanizing?" Does it detract from personal job satisfaction? Is the equipment being used as a substitute for good typists? Is shorthand obsolete? Should schools institute programs in word processing, and if so, how much depth is required in the teaching of these concepts and machines? Is it necessary to install expensive equipment in the classroom? Many opinions have been formulated, but few research studies have been conducted to prove or disprove those opinions.

Subject of the Study

The subject of this study is a curricular model in word processing for post-secondary programs of business education.

Purposes of the Study

The study included the following purposes: (1) to survey the present emphasis upon word processing in programs of business education; (2) to survey the current use of word processing in business; (3) to identify the characteristic form of word processing systems; (4) to survey the need for qualified personnel for employment in word processing; (5) to evaluate current educational practices in educating individuals for positions in word processing; and (6) to utilize findings from both business and education to construct a curricular model for post-secondary educational institutions.

Research Questions

Following is a list of research questions explored by this study:

1. What percentage and what types of post-secondary educational institutions offered programs in word processing?

2. What business programs other than secretarial education utilized the word processing courses?

3. What topics were being taught in the various word processing programs and which topics were most emphasized?

4. What word processing equipment was being used in these programs, was the equipment located in the classroom or outside the educational institution, and was the equipment purchased or rented?

5. What was the prime criterion which determined whether or not to install word processing--type of business, size of organization, type of hard copy output?

6. What was the typical size of a word processing center, considering number and type of units (machines), and employees?

7. How much education or training was required to secure an entry-level position in word processing? Does the amount of education affect the entry level?

8. How much on-the-job training was necessary for proficiency? How much on-the-job training was necessary for advancement?

9. What kinds of topics taught in the educational institutions were most beneficial to the student as an employee of the business organization?

10. What kinds of equipment taught in the educational institutions were most frequently used by the business organizations?

11. What level of proficiency was being taught on each type of equipment, and how did this compare with the needs and expectations of business employers?

12. What general and specific topics should be taught? To whom should these topics be taught?

13. What learning objectives are appropriate for courses in a word processing program?

14. What prerequisites are necessary for an adequate understanding and successful completion of a program in word processing?

Background and Significance

About the time of World War II, data processing became more mecha-
nized in American businesses, due to an increase in paper-work. Many
automated devices were initiated into business offices to speed the
production of paper-work. Equipment such as the electric typewriter,
justowriter, and varityper proved to be valuable time-savers. Two
inventions, however, became of especially significant importance--
electronic circuitry and common-language media. Electronic circuitry
indicates operation through electronic impulses, as opposed to automatic
(gear or belt-driven) operation. Common-language media, such as punched-
paper tape and magnetic tape, are "readable" by more than one machine.
Both inventions are important to word processing.

Word processing to some people is a division of a business, which
houses specialized typing media. To others, it is an alternate name for
a kind of typewriter. To others it is a system for improving the flow
of paperwork throughout a company. One generally accepted definition of
word processing is: "Word processing is a program for improving the
efficiency and effectiveness of business communications" (8, p. 3).

When both major aspects of a word processing system--a word proces-
sing center and an administrative support function--are implemented,
secretarial duties are divided. Typing suitable for processing on
electronic equipment is directed to the word processing center and all
other secretarial duties are performed by administrative support personnel.

Administrative support personnel duties, which encompass all the
functions of a traditional secretary except typing, involve mainly new

procedures and very little new equipment. The word processing center, on the other hand, uses primarily new equipment and procedures.

Word processing centers have been in operation in some businesses for approximately seven to twelve years, having first been used by IBM in Germany in 1965. To illustrate the scope and function of equipment used, the major machines offered by IBM will be described. This is not to suggest that these are necessarily better than comparable equipment of other companies; they serve only as illustration.

The Magnetic Tape "Selectric" Typewriter (MT/ST) was introduced in 1964 and uses a magnetic tape to store typed information in coded form. In most companies the initial application of the MT/ST was in repetitive typing. The typewriter can produce error-free copy at a rate of approximately 150 words per minute.

In 1969 the IBM Mag Card "Selectric" Typewriter (MC/ST) made its debut. The MC/ST utilizes, in addition to a typewriter, a connecting console, which handles the recording function. By recording key-strokes on small magnetic cards much like the way a voice is recorded on a home recorder, this machine records everything that is typed on it. The console has only three buttons and a card-loading slot for its entire operation. The MC/ST can produce error-free typewritten material at a rate of 150 words per minute.

Machine operation is relatively simple. Before one begins to type, a magnetic card about the size of a standard punched card is placed into the card-loading slot of the console. The record button on the console is then pressed and the machine is ready to type. As the individual types

in the usual manner, the machine is simultaneously recording and storing text on a magnetic card. Each card can record approximately one page of typewritten material. When the card is full, it automatically ejects from the console.

A backspace/strikeover technique which erases the mistake on the magnetic card is used to make corrections while typing. The strike-over on the "hard copy" shows that the error has been corrected. Should changes be necessary after the material has been removed, the card is reloaded and the machine allowed to play automatically until it reaches that part of the text which needs correction. At that point the machine is stopped and additions, deletions or corrections are made, after which normal operations are resumed.

Right-hand margins are no problem either, since by playing the magnetic card in the "adjust mode," the MC/ST automatically maintains a uniform right-hand margin.

In 1973 the Mag Card II typewriter with an electronic memory was introduced. This machine has a memory capacity of 8,000 characters, or about two and one-half pages of type. Once entered into memory, the information may be recalled on a magnetic tape at 200 characters per second. The typewriter can read cards produced from its own keyboard or from an MC/ST. A console accompanies this typewriter, also, and the features available on the MC/ST are available on the Mag Card II. In addition, the Mag Card II has the capability of switching memories--from the material on the console to material in the memory of the typewriter itself. In addition, the erase mechanism electronically erases typing errors from the typewriter's memory and simultaneously removes errors from the typed page.

IBM later introduced a desktop, 50-page-capacity memory typewriter, an MT/ST Model VI for teaching magnetic keyboarding, a Mag Card/A, and a Communicating Magnetic Card/Selectric Typewriter (CMC). The CMC makes it possible to "mail by phone." Documents may be typed on one CMC and sent via telephone to any other CMC anywhere telephone connections exist, with original typed documents available at both points.

To accompany these advanced typewriters, such equipment as the IBM 46/40 Document Printer was introduced. The Printer "reads" magnetic cards produced by Mag Card typewriters, and electronically prints material by an "ink jet" process. It, too, has the capability of "switching," allowing, for example, a list of addresses and a standard letter to be fed into the machine. The 46/40 will then automatically print the first address, switch to the letter and print it, print a corresponding envelope, and then begin another letter with the next address.

The System/32 and the Word Processor/32, both much more sophisticated pieces of equipment, began to merge word processing, data processing, and computer processing.

Equipment such as the aforementioned, combined with dictation and transcription equipment, forms the "mechanical nucleus" of a word processing center. Trained personnel is, however, the determining factor in the success or failure of any system.

Most knowledgeable individuals will concede that word processing is an irrevocable part of business. A few post-secondary institutions have initiated courses or programs in word processing. An International Word Processing Association has been formed. At least three periodicals

(Words, Word Processing World, and Word Processing) dealing strictly
with word processing have made their debut. A few training materials
have been developed by private corporations. A few textbooks have been
published for educators. Yet, no in-depth attempts have been made to
compare and correlate educational practices with actual business operations
in word processing systems.

Delimitations

The following delimitations were observed in developing this
research:

1. This study excluded high schools. Since by definition a program
in word processing consists of at least three such courses, the usual
high school curriculum requirements would not allow time for a word
processing program. An introduction to the concept of word processing
could be given in conjunction with other courses, but a full-scale pro-
gram in word processing would probably not be possible.

2. Private business colleges and schools not accredited by AICS
were excluded. Admittedly this excluded many privately owned insti-
tutions, but provided a degree of consistency in those included in the
research. Many regional accrediting agencies operate across the nation,
and many non-accredited institutions exist. Standards vary greatly
throughout these institutions, which would have produced inconsistency
in the findings of this study.

Basic Assumptions

The following basic assumptions were made concerning this study:

1. Businesses in the Dallas-Fort Worth metroplex are akin to businesses in other United States metropolitan areas.

2. The applicable questionnaire and interview methods and instruments yielded valid information upon which to base a curriculum model.

3. The educational institutions chosen for inclusion in this study are like other post-secondary educational instituions.

Design of the Study

Procedures for Collection of Data

Procedures for Collection of Education Data.--Two methods of data collection were employed in this study--the questionnaire and the interview techniques. The questionnaire technique was first used to obtain information from three types of post-secondary educational institutions--private business and secretarial schools, junior and community colleges, four-year educational institutions--located within the continental United States and having a secretarial education program.

The private business and secretarial schools included were chosen from the Directory of Accredited Institutions 1976-77 published by the Accrediting Commission of the Association of Independent Colleges and Schools. From that list of institutions, a random sample of 300 which met the above-stated criteria of location and program was selected for inclusion in the study.

Junior and community colleges having secretarial education programs were obtained from the College Blue Book, and a random selection of 300 of those institutions were chosen for inclusion in this study.

Four-year educational institutions meeting the necessary criteria were listed in the "Directory of NABTE Member Colleges and Universities," published in the January, 1976 issue of the Business Education Forum. All 299 of those institutions, except the University of Hawaii and the University of Puerto Rico, were included in the study.

Once the list of 897 post-secondary institutions was compiled, a "Questionnaire for Educators" (see Appendix B) was mailed to each secretarial education Head of Department to determine whether that institution had a word processing program. In addition, the questionnaire was used to obtain the name and title of the person to be contacted for information concerning individual courses in the word processing program.

A second questionnaire, "Questionnaire for WP Instructors," (see Appendix E), and rating sheet, "Rating Sheet for WP Instructors" (see Appendix F), were sent to those educational institutions having a word processing program to determine the scope, nature and content of their program. Some specific information requested included (1) prerequisites for entering the program, (2) number of courses offered, (3) emphasis placed on specific topics included in each course, (4) instructional materials used in the courses, (5) equipment used, and (6) amount of hands-on experience required.

Procedures for Collection of Business Data.--Another facet of the study was personal interviews with people responsible for the word

processing system in their business organization. All businesses were located in the Dallas-Fort Worth metroplex. Interviews were conducted via an "Interview Schedule" (see Appendix G) and the interviews were tape recorded or taken in shorthand. Copies of the "Rating Sheet for Business Personnel" (see Appendix H) were either completed at the time of the interview or left with the interviewee to be completed and returned by mail. Rating sheets were requested to be completed (where positions existed) by the word processing manager, the word processing center supervisor, a word processing center operator and an administrative support secretary. These rating sheets corresponded with the "Rating Sheet for WP Instructors" to allow for correlation between the groups. The "Rating Sheet for Business Personnel" requested information concerning job requirements for entry-level positions.

Some specific information requested during the interview and/or on the rating sheet included (1) the size of the word processing center or system (number of employees and machines), (2) type of equipment used, (3) equipment configuration (centralized, decentralized, satellite, transitional, or mixed), (4) general educational requirements for each position, (5) previous word processing education and/or experience of employees in each position, (6) method of computing pay (salary, hourly wage, output incentive, etc.), (7) number of "traditional secretaries" retained by the organization and the administrative level of the person to whom each reported, and (8) the length of time the center had been in operation.

Procedures for Analysis of Data

Procedures for Analysis of Education Data.--The questionnaires

returned from each of the three types of post-secondary educational

institutions were analyzed separately and collectively. The responses

on the "Questionnaire for Educators" which was sent to the 897 post-

secondary institutions were grouped into four categories for each type

of post-secondary educational institution: (1) post-secondary insti-

tutions with no courses offered in word processing; (2) post-secondary

institutions with one course offered in word processing; (3) post-

secondary institutions with two word processing courses offered and those

with more than two, but not meeting the criteria for a word processing

program; and (4) post-secondary institutions with a word processing

program as defined in this study. The responses were tabulated in each

classification for each type of institution as well as for all instituitons

combined.

The responses on the "Questionnaire for WP Instructors" mailed to

those institutions which indicated that they had a word processing

program were tabulated by type of post-secondary educational institution

and by total post-secondary educational institutions.

The responses on the accompanying "Rating Sheet for WP Instructors"

were computer-tabulated and compared with the responses to the "Rating

Sheet for Business Personnel" by means of a Kruskal-Wallis one-way

analysis of variance. The Kruskal-Wallis is a statistic used to determine

whether independent samples come from the same population and is used

when the measurement is weaker than the interval level.

<u>Procedures</u> <u>for</u> <u>Analysis</u> <u>of</u> <u>Business</u> <u>Data</u>.--Interview responses were compiled by classification to determine characteristics of typical word processing centers. Responses to each item on the "Interview Schedule" were analyzed collectively to determine the percentage of total respondents having similar responses.

To aid in the mechanics of tabulating data, the "Rating Sheet for Business Personnel" responses were computer tabulated. The responses were then compared with the responses to the "Rating Sheet for WP Instructors" as noted above.

Finally, the compiled data were used as a tool in building a curriculum model. Information received from the various business organizations was used as teaching objectives. Existing word processing programs in educational institutions were synthesized and used as general guidelines in determining such things as the amount of material which can be covered in a course, the extent of automated equipment usage, and textbooks and supplies being used for WP courses. The actual model, however, is a product of research, knowledges, and abilities, not simply a compilation of existing programs.

<u>Guidelines</u> <u>for</u> <u>Evaluating</u> <u>Current</u>
<u>Educational</u> <u>Practices</u>

The fifth purpose of the study as stated on page three is "to evaluate current educational practices in educating individuals for positions in word processing." The following guidelines were set forth for the evaluation:

1. Are word processing concepts being introduced to students in all Post-Secondary educational institutions?

2. Are the post-secondary educational institutions which have a word processing program providing the skills and knowledges needed for an entry-level position in each of the positions found in the businesses surveyed?

3. Are the post-secondary educational institutions which have a word processing program providing training on the type of equipment most frequently found in business? Is the training provided at a proficiency level commensurate with that required for an entry-level position?

4. Are the post-secondary educational institutions word processing programs set up so that an individual could obtain a "specialist" or some other degree or area of concentration in word processing? Or is the word processing "program" three or more word processing courses added to the existing curriculum as electives?

5. Does the word processing program provide practical experience in both correspondence secretarial and administrative secretarial duties (through a model office situation or, preferably, through an internship) so that a student can assimilate the things he or she has learned in a practice situation without all of the pressures of a job and with the guidance of trained personnel.

Definition of Terms

The following words and phrases where used in this study have the meanings ascribed below.

Word Processing Program: A course of study within a post-secondary educational institution, consisting of three or more courses in word

processing, on either a semester or term basis, and carrying at least two hours credit per course for three of the courses. No attempt was made to distinguish between semester hours and term hours because of the difficulties involved in equating the two.

Word Processing Center (WPC): A division of a business firm which utilizes at least two automated typewriting machines.

Centralized WPC: A WPC which contains all of the electronic typewriters for that business firm.

Decentralized WPC: Two or more WPC's in the same building for the same company.

Satellite WPC: Two or more WPC's in the same company but in different buildings.

Transitional Word Processing: Traditional secretaries who have electronic typewriters. These secretaries are still performing the same duties but now have electronic typewriters and have not been physically moved from their secretarial location.

Mixed Word Processing: Any combination, within a company, of the possible word processing configurations--centralized, decentralized, satellite, transitional.

Word Originator: An individual who inputs material to be transcribed.

<u>Post-Secondary</u> <u>Educational</u> <u>Institution</u> <u>(P-SI)</u>: An organization which offers training and/or education to persons who have either completed high school or who have dropped out of high school but wish to formally train for a career.

<u>University</u>: Four-year educational institutions used in this study.

<u>College</u>: Junior and community colleges attained from the <u>College</u> <u>Blue</u> <u>Book</u> for use in this study.

<u>School</u>: Independent business and secretarial schools attained from the <u>Directory</u> <u>of</u> <u>Accredited</u> <u>Institutions</u> <u>1976-77</u> for use in this study.

<u>Hands-On</u> <u>Experience</u>: Experience gained through actual use of equipment, without simulation.

There are many definitions of word processing--perhaps as many definitions as people using the term. In its narrowest interpretation, it is a name for a particular kind of typewriter. In its broadest sense, word processing is the entire process from the mental inception of an idea to the final printed form of that idea.

The following are definitions offered by various individuals:

Word processing is the flow of office communications including face-to-face, telephone, or written documents which makes up the total communications system. Included also are the creation, routing, and retention of documents produced within the system (2, p. 7).

The "birth-to-death" systematic process for business communications (4, p. 62).

. . . a futuristic plan for blending procedures, personnel, and tools in order to convert ideas and concepts into written communications (6, p. 14).

To the Computer and Business Equipment Manufacturers Assn. (CBEMA) word processing means, "the transformation of ideas and information into a readable form of communication through the management of procedures, equipment and personnel" (3, p. 29).

In an article published by The Office, manufacturers of WP equipment were asked their definition of word processing. Some of their replies were as follows:

To me it means handling the wordflow in your office in the most efficient and economical way possible . . .

Word processing is a program to improve the efficiency of business communications. . . . It is the combination of people, procedures and equipment in the proper system design to meet the needs of an organization.

. . . word processing is the capturing, reproduction and minimal reformatting of textual information using equipment of a single-concept nature; equipment which was designed to do a single, specific input or playback task and was not designed for general text manipulation.

. . . a managed system of people, procedures and equipment for the handling of business communications . . .

Word processing means the professional application of management science and technology to accomplish verbal communications with maximum productivity.

A combination of people, procedures and equipment that transforms ideas into printed communication and helps to facilitate the flow of related office work . . .

Word processing is the activity of getting an ultimately typewritten message from the person who originated it to his intended audience . . . It encompasses the flow of words from the person who dictates them, through typing, editing, correction, repetition, updating and merging of messages, as well as distribution by electronic communications and computerized typesetting.

It includes all of the equipment and systems needed to prepare, dictate, or in any way originate the written material which could then be communicated in a typewritten mode . . . (12, pp. 67-68).

According to one author, the United States Government has adopted a definition of WP which lays the groundwork for an integrated approach.

The efficient and effective production of written communications at the lowest possible cost through the combined use of systems management procedures, automated technology, and accomplished personnel (11, p. 52).

Other definitions of WP include:

Word processing has often been defined as a secretarial system whose primary appeal is increased productivity at lower costs. As inviting as this might be, I suggest word processing could be the keystone of a new and far superior system encompassing the entire administrative function (9, p. 6).

Word processing is the correct combination and specialization of people, procedures, and equipment that allows an organization (or individual) to transform its ideas into written communications at substantial savings over existing methods (7, p. 9).

A method of producing all types of written communications with optimum speed and accuracy; with the least possible effort; at the lowest possible cost; by means of a correct combination of policies and procedures, automated equipment, and specially trained personnel (1, p. 18).

The fastest, most efficient, and most economical method of expediting paper flow from its authorship to distribution of the printed word (10, p. 9).

A definition established by the X4A12 American National Standards

Committee of Washington, D. C. reads:

Word processing is the transformation of ideas and information into a readable form of communication through the management of procedures, equipment, and personnel (10, p. 9).

In the 1960's, when the term word processing was coined, IBM

Corporation defined it as:

The combination of people, procedures and equipment to more effectively produce written communications (8, p. 2).

As WP systems began to grow and change, IBM amended its definition

to read:

The transition of written, verbal or recorded ideas into type-written or printed form and the distribution thereof (8, p. 2).

In mid-1976, the definition was again changed to allow for the effect a WP system has on every level of management, administrative personnel, and secretaries:

> Word processing is a program for improving the efficiency and effectiveness of business communications (8, p. 3).

Were the broadest definition above to be adopted, business educators could contend that the entire business department has been teaching WP since the inception of the department. Were the narrowest definition adopted, the teaching of WP would be condensed to training on a specialized typewriter.

In companies where the total WP system has been implemented, the entire secretarial structure has been revamped, affecting virtually every employee. In other companies, where the only change has been the addition of sophisticated equipment, many employees are not even aware of the change. Most "textbook" definitions express the ideal situation. In order to achieve the highest possible efficiency and economy from WP, a total implementation is necessary, even though this is not possible in many instances. Therefore, the definition of WP adopted for use in this study is as follows:

Word Processing (WP): A deliberate system of expediting business communications from originator to intended audience, encompassing a division of the secretarial function and the utilization of electronic typing equipment.

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CHAPTER II

REVIEW OF RELATED LITERATURE

This chapter presents a review of the background literature used in this study. Included in the review is literature concerning word processing (WP) written primarily by or for businessmen, literature concerning training programs in WP, the writings of educators regarding WP, and material pertaining to development of a curriculum model.

Word Processing Literature Written
By or For Businessmen

History

The processing of words is claimed by many (5, p. 7; 52, p. 27; 65, p. 14; 129, p. 12) to have begun around 2500 B.C. with the carvings of messages on clay tablets. There are, however, important distinctions between simply processing words and the concept of WP. The introduction in 1964 of the IBM Magnetic Tape Selectric Typewriter (MT/ST) conjoined with sophisticated dictation equipment, made WP feasible (5, p. 8; 113, p. 12).

Virtually every business "processes" words, beginning with the originator's desire to have words on paper and ending when that originator approves and dispatches the resultant document. According to Anderson and Trotter, WP ". . . is what happens in between those two fixed terminal points--not what happens nearly so much as how it happens" (5, p. 5).

Ulrich Steinhilper of IBM's German products division is credited with first coining the term "textverarbeitung" or "text processing" in 1965 (5, p. 8; 70, p. 15; 113, p. 10; 122, p. 3). The concept emerged in an attempt to decrease the soaring costs of the secretarial function. According to a report of the Dartnell Institute of Business Research, the cost of a one-page business letter rose from $1.83 in 1960, to $2.74 in 1969, and to $3.20 in 1972. Other reports proffered an even higher figure: ". . . about $4 for a standard typewritten letter . . ." (129, p. 13); "The typical letter today costs over $4. (Some even estimate it as high as $9)" (108, p. 5).

Steinhilper theorized that "if all dictation could be directed toward one or more secretarial transcribing locations, time and money could be saved because automatic typewriters can produce error-free documents at speeds of 150 to 180 words per minute" (113, p. 10). When the idea spread to the United States, it was usually referred to as "power typing" (5, p. 8). As the concept gained wider acceptance and as more hardware and software products were developed specifically to handle specialized WP functions, the term "word processing" became standard.

Objectives

Too often systems are introduced into businesses and courses are included in educational curricula simply because it appears to be appropriate. Precise objectives should be formulated in both instances. As Collins states,

> If the word processing system is to be responsible and accountable for its existence, the needs and expectations of top management must be constantly considered. These objectives should

be formally stated and agreed upon by both word processing management and top management just prior to start-up" (25, p. 9).

Collins did not offer any specific objectives of WP, but other authors did, as shown in the following paragraphs.

Usually the first objective ascribed to WP is the financial savings involved. However, it must accomplish more than cost savings to be fully successful.

Burk (19, p. 75) states three objectives for the WP system, which are frequently listed: (1) to render superior secretarial service to all principals based on a measured workload; (2) to create career paths that offer secretaries more responsibility, better pay, job status and the opportunity to do the work they are best suited for; (3) to reduce personnel problems, attract better employees with higher pay, and save money for management. Other authors (37, 38, 122) list quite similar objectives.

Additional objectives are stated by several authors. According to Bart Stevens, 1972 president of IBM's Office Products Division,

It must provide faster turnaround time, a finished product of superior quality, and improved filing and retrieval of information. . . . expert supervision of priorities as well as the flexibility to handle an emergency overflow of paperwork . . . swift allocation of resources to the point of need . . . (122, p. 3).

Doonan (37) and Edmonston (38) state that the objectives of WP are to remove the one-to-one secretary-to-principal relationship, to increase production, and to provide more meaningful work for administrative assistants.

One objective in particular--the creation of career paths--warrants additional coverage at this point. Just as no single WP system will suffice for all situations, no single configuration of career paths will suit all organizations.

Under the traditional secretarial organization, a secretary's promotions and salary increases are often limited to the level of achievement of her or his boss. When the boss is promoted he or she often retains the same secretary; and so the secretary realizes a promotion because the boss is in a higher-level position--not because of the secretary's own merits, but because the boss was promoted. With WP, this is no longer the case. Since a secretary does not have a one-to-one working relationship with a boss, advancement is not tied to the achievements of another individual.

Beller (8, p. 5) suggests career paths for both WPC and AS personnel which allow for six levels of advancement, as shown in Figure 1.

Document Production	Secretarial Administration
Word Processing Center Manager	Administrative Secretarial Manager
Executive Correspondence Secretary	Executive Administrative Secretary
Senior Correspondence Secretary	Senior Administrative Secretary
Correspondence Secretary Specialist	Administrative Secretary Specialist
Correspondence Secretary	Administrative Secretary
Associate Correspondence Secretary	Associate Administrative Secretary
Keyboarding, formatting and language skills	Cognitive and general business skills

Fig. 1--Suggested secretarial career paths (8, p. 5)

In stair-step arrangement, either career path includes Associate, Secretary, Specialist, Senior Secretary, Executive Secretary, and Manager.

Although not stating a specific stair-step arrangement, Anderson lists the following job titles in conjunction with the installation of WP:

> . . . manager or supervisor of the word processing center; word processing center coordinator; manager, supervisor, or coordinator of administrative or secretarial services; correspondence secretary (often up to six grades); administrative secretary; word processing proofreader and editor; and methods, procedures, job and equipment analyst (3, p. 7).

The above are suggested job classifications. What are some of the actual business arrangements? Eastern Airlines offers a career path starting with Associate Secretary and advancing through Secretary, Senior Secretary, and Coordinator. Each rung of the ladder carries with it greater responsibilities and increased pay (102, p. 8).

Armco Steel Corporation's entry-level WPC position is Correspondence Typist. The career path then progresses through Correspondence Stenographer, two levels of Correspondence Secretary, Technical Word Processor, and lastly, Senior Word Processor (66, p. 4).

Being in charge of the entire WP system, by whatever title, is not necessarily the ultimate for an individual in WP, however. At least one company reports a high degree of success in using the WP career paths as a step into other areas of business. Promotions in the company have been made to Personnel (interviewing secretarial applicants), Engineering (as data analyst), and ". . . a variety of exempt positions" (98, p. 9).

Configuration

One of the most outstanding features of the WP concept today is its flexibility. Each "standard" system design is "bent" to meet the requirements of the company or department it serves. There are five major components that determine the basic structure of any WP system, according to Haller:

Secretarial Organization--should secretaries be located outside the office of the principals they support, or should they be grouped in support centers?

Work Specialization--should typing and administrative support be processed in the same or different environments, and to what degree should administrative support activities be specialized?

Job Design--Should a secretary provide all the support for one or several principals (principal-oriented), or provide support in certain designated services for all principals in the group (activity-oriented)?

Secretarial Supervision--Should word processing personnel report to the principals they support, an office manager, or a secretarial supervisor?

Management--If a secretarial supervisor is chosen, does this person report to the function supported or to a word processing department which serves all functional areas (50, pp. 6-7)?

LaDue asserts that the following factors should be taken into consideration when determining the best system:

--the users, their work habits, expectancies and perceptions;
--the secretaries, their skills, expectancies and perceptions;
--the environment--management style, facilities and organizational dimensions;
--the work requirements, the diversity, complexity, values, peaks and valleys, lead time, volumes and levels of work;
--the organizational objectives--whether they are related primarily to cost or service or are oriented to user effectiveness (76, pp. 4-5).

Perhaps the most basic classification of WP systems is simply "centralized" or "decentralized" (121, p. 19). A fully centralized

approach groups all AS personnel together and all correspondence center (or WPC) personnel together, with both centers reporting to an Administrative Manager. The centers are open for use by all members of the organization. Traditional secretaries are completely eliminated (16, p. 63). This system requires the greatest change in personnel structure but eliminates possible friction because one person retains a personal secretary while another does not or because one secretary moves to a center while another does not. Coordination of the secretarial function is enhanced by this system since everything is handled at one or two locations and coordinated by a single individual. In addition, a fully centralized system affords the largest number of steps in the career path because of the greater number of employees in the department and the opportunity for job specialization.

Taken to the ultimate, a fully decentralized system is like a traditional office, with the exception that automated typewriters are used (50, p. 8). A fully decentralized system requires the least amount of personnel disruption. No physical changes in location are made, and existing boss-secretary relationships are retained. The WP equipment is not utilized to the fullest extent, because secretaries are still required to perform both correspondence and administrative support duties.

Alternate approaches are generally more acceptable. One author (26, p. 911) suggests three designs between the two extremes of a centralized and a decentralized system. First, a single secretary could perform both administrative and correspondence duties for two or more principals. A microphone input system should be installed for input and a magnetic

keyboard used for output. The microphone input would eliminate the time consumption of taking dictation in shorthand. When a secretary serves two or more principals in a single department, duplication of filing could be eliminated and the scheduling of meetings could be simplified since one person would have the schedules of two or more principals.

The second configuration (because of the workload) divides and specializes correspondence and administrative duties between two or more secretaries. All of the secretaries would, however, still report to a principal rather than to a secretarial manager. The greatest advantage of this system is the specialization of duties. The correspondence secretary devotes full time to correspondence duties and thus utilizes the WP equipment more fully. The administrative secretary specializes, too, and filing is consolidated, scheduling of meetings is simplified, and secretarial personnel is decreased.

The third suggested system, suited to a larger organization, is called a "systems approach." A fully centralized WPC is set up, with a WPC manager. Microphone or telephone input systems are utilized, along with magnetic keyboards and communicating typewriters or terminals. The AS function is grouped in smaller units, serving managers or principals by departments or functional areas. A secretarial administrative manager could be assigned to these units, or one manager could control both the correspondence center and administrative support functions. This system affords the greatest advantages attained through specialization of duties. With all correspondence being directed to a central location, the WPC supervisor can equalize work loads among the WPC

employees, and priority jobs can be handled more quickly. Some machine operations are more complicated than others, and the WPC supervisor can assign jobs according to the skill level of each employee. In addition, a WPC makes it easier to standardize machine operations and media filing. The AS function realizes the same advantages as in previous approaches. In addition, with more than one AS secretary located at the same center it is easier to cover absenteeism and to schedule vacations.

Lynett (85) suggests that all administrative services should be consolidated and integrated into organizational units to support the various business functions. Such a configuration would physically consolidate such things as AS, copying, data processing, computer processing, facsimile transmission, library services, telephone services, visitor escort, mail handling, filing and retrieval, calendar maintenance, insurance, and other special services. It would, in effect, create a department of its own, managed by someone responsible only for that department. The advantages cited in such an arrangement are the justification for equipment, once fragmented jobs are consolidated, and the more efficient management of information. In addition, it is supposed that "professional administrative management, higher skill levels and sophisticated equipment would raise the quality of support and speed of response well beyond that possible today" (85, p. 9).

Bonjean (15, pp. 12-13) classifies possible WP designs as vertical or horizontal. A vertical structure is one in which WP and AS centers report to an administrative-level secretarial manager. This kind of system crosses functional lines, has several levels of management to

which a secretary can be promoted, and has a defined career path. In a horizontally structured system, the secretarial staff reports to the managers of the functions they support--marketing, personnel, sales, etc. Therefore, promotions are more likely to be restricted to openings within a single function or department, and career opportunities are fewer.

Kalow (67) lists four basic types of systems--traditional, semi-consolidated, consolidated, and remote or computerized--from which many alternate approaches are possible. Neither equipment nor procedures is the determining factor used to differentiate between systems, but rather the personnel practices. He states:

> In the traditional system, . . . the distinguishing factors are the generalized job of the secretary [he or she does a little of everything] and the fact that she reports directly to the principal for whom she works.
>
> In a semi-consolidated system, the typing is consolidated, . . . while the balance of the secretarial workload is shared by administrative secretaries. . . . the key element is the personnel structure. Both corresponding and administrative secretaries report to secretarial managers rather than to the principals they support. The secretarial managers may report to the department manager in a decentralized system, or to an administrative manager in a centralized approach.
>
> In a consolidated word processing system, all secretarial functions are specialized. . . . to use more sophisticated equipment. In addition to specialized typing, other secretaries specialize in filing, copying, telephone messages, reservations, calendar and other functions. . . . all secretaries report to a center manager. The manager may report to the manager of the department the center supports or to an overall administrative manager.
>
> In a remote word processing system, the secretaries involved in typing share the work as they would in a center, using communicating keyboards connected to a central processing unit. They report to a professional manager who may or may not be specialized according to all duties. Instead of centralizing personnel to manage, control and handle work flow, the computer will be able to provide management with the information required to make possible

the desired degree of control in a widely-dispersed secretarial force, eliminating the need for a word processing center (67, pp. 9-10).

The author goes on to say that most organizations today are still using the traditional type of word processing system, and some are stepping into semi-consolidated systems. However, he anticipates that increased consolidation of activities will occur, and eventually the remote WP system will be a reality.

WP System Management

In an ideal situation, a WP system manager (or administrative services manager) spearheads the activities of both the WPC and the AS function. This particular line of authority is not always possible nor practical, but is representative of some larger organizations and shows the division of work pattern which allows the broadest possible career path.

Implementation.--Many factors must be considered by both top management and those chosen to implement a WP system. Top management is usually persuaded to install a WP system because of its potential cost savings. In some instances, initial feasibility studies through actual installation of equipment and training of personnel is handled by the vendor issuing the WP equipment. Vendors, on the other hand, may do little of the planning and initiating.

The process through which top management decides to install a WP system is immaterial to the purpose of this study; however, once that decision has been made and a manager has been chosen, the steps toward

implementation are significant if the WP manager is given that responsibility. The following eight steps were reportedly taken by one company to implement their system: inform, study, redistribute, present, design, train, implement, review (23, pp. 53-62).

1) Inform--All employees were informed by top management of what was going to happen. It was made clear that management was behind the move and that cooperation was expected from everyone.

2) Study--A two-week in-depth study was made of all typing. Materials were categorized to determine the feasibility of designing form letters or paragraphs. Also determined were methods of input, number and type of author revisions, retypes because of typist error, kind of typing (letter, memo, report, file labels, cards, envelopes, etc.). In addition, task lists were used to indicate all duties performed by each secretary and the time spent on each job.

During the next three months the study team categorized all correspondence by method of input, amount of new output for each typist, application, line count and page count.

3) Redistribute--In an attempt to consolidate all typing in a correspondence center, form letters and paragraphs were created, based on the study described in number two above; many forms were consolidated or eliminated; and typing which could not be removed or eliminated was centralized within each department.

Once typing was theoretically removed, the remaining work was redistributed among those positions remaining in the department. New workflows were designed, job descriptions rewritten, old duties modified and new duties created.

4) Present--At this point, the proposed plan was presented to top management, departmental heads and section supervisors.

5) Design--Procedures were then developed and a manual printed showing how correspondence would be handled from its point of origin to its conclusion. One manual was developed to show word originators how to use the WPC--methods of dictation, priority handling, revision handling, etc.--and to show them what items were to be processed outside the Center. Another manual was produced for Center usage, giving key-boarding and playout instructions, procedures for distributing finished copy, and work measurement procedures.

6) Train--Applications for transfer to the WPC were accepted, and a battery of tests was administered to all applicants. These tests included spelling, grammar, and machine dictation. Those individuals chosen were transferred to the Center and given a one-week training course on the MT/ST.

7) Implement--One department at a time was converted to the WP system until all were incorporated. This produced a relatively smooth transition and allowed time to handle specific problems.

8) Review--After six months of operation, the form letters and paragraphs were reviewed to determine actual usage, and appropriate revisions were made. In addition, manuals were rewritten to show updated procedures.

Probably the most difficult part of implementing WP is gaining user acceptance, and this task usually falls to the WP manager. WP can necessitate a major change in systems, procedures, and thinking, and most people resist change. According to Sexton:

By understanding how change works, management can achieve three important objectives: (1) knowledge of why people accept or resist change, and with that knowledge (2) the ability to take action to maximize the climate for acceptance and minimize it for resistance, and (3) gain lead time to develop strategies to handle any resistance that might occur. . . .

Observation tells us that behavior toward a change to word processing is influenced by or depends on

--self-image
--what "makes sense" to the individual
--perception of the situation
--interaction between individual and environment
--individual's needs at a particular time (117, pp. 11-12).

The following techniques have been used successfully by at least one company in gaining employee acceptance of WP implementation:

1) Show top management's support of WP to be unanimous.

2) Keep all users, especially potential dissenters, involved whenever possible in the transition--ask their opinion or comments for improvement.

3) Explain the system thoroughly and dispel misconceptions.

4) Make the system responsive to user needs--quality output, good turnaround time, flexibility.

5) Organize AS secretaries to meet other needs more effectively than ever before.

6) Provide incentives to dictators--i.e., Dictator-of-the-Month award.

7) Build "esprit de corps" within the center--a sense of team effort toward a mutual goal (91, pp. 3-5).

The second technique above was "involve the user." Operators can be involved, too. In one company, secretaries visited WP installations

and vendors, evaluated available equipment, submitted written evaluations, and actually made the final equipment selection (56, p. 67).

Office Design.--Office design experts could be consulted when planning the physical layout and environment of a WP system. However, the WP manager must be able to knowledgeably express desires and needs of the center. The first consideration is the physical location of the WPC and the furniture with which to equip the center. The center must be accessible to all users, yet not in the center of disruptive traffic. Accessibility in some instances is achieved through decentralization, or satellite centers located throughout a building or company. Office landscaping, or open planning, could help to control traffic and at the same time offer a flexible approach to office design.

Permanent walls are kept to a minimum with office landscaping. Movable partitions, plants, acoustical screens, and furniture serve to define work areas. Since all the elements are movable, remodeling to accommodate change can be handled easily.

Phillips (106) and Goldfield (46) list the following components of office landscaping as work enhancers: (1) Acoustical screens to absorb sound and control sight lines; (2) Soundproof walls; (3) Modular fur-nishings for efficient space utilization; (4) Floor carpet to reduce footfall and machine noise; (5) Acoustical ceiling tiles to help control sound; (6) Coordinated color schemes and a unified decorative theme; and (7) Plants, to add attractiveness, help divide work areas, and provide an acoustical sound-dampening service.

Finally, according to at least one study, (28, p.20) office land-
scaping is cheaper than conventional methods of office design.

The second consideration of office design is noise. Increasing
technology and the resultant noise has caused noise to become an environ-
mental pollutant. Figure 2 shows some types of sound, the decibel level
of each, and its position on a graduated scale of noise classification.

Noise Level Classification	Decibel Range	Type of Sound
DEAFENING		Thunder, artillery Nearby riveter Elevated train Boiler factory
	100	
VERY LOUD (Office Machine room)		Loud street noises Noisy factory Police whistle
	80	
LOUD (Noisy Office)		Average street noise Average radio Average factory
	60	
MODERATE (Average Office)		Noisy home Average conversation Quiet radio
	40	
FAINT (Private Office)		Quiet home Average auditorium Quiet conversation
	20	
VERY FAINT		Whisper Soundproof room Threshold of audibility

Fig. 2--Classification and decibel level of sounds (99, p. 15)

An ordinary office machines room is listed in the "Very Loud" noise
classification, having a decibel range between 80-100.

The noise level resulting from multiple magnetic keyboards makes
necessary the consideration of noise control in the WPC. The sound

cannot be subdued to match a general office environment; however, the noise level can be reduced by insulating the ceiling, walls, and floor. Tiles, cork, draperies, paneling and carpeting are all sound-absorbing materials. An acoustical specialist can measure noise levels and make recommendations for selection of materials (99, pp. 14-15).

A third consideration of office design is air comfort. Varying temperature patterns greatly affect one's performance. An appropriate relationship between temperature and relative humidity must be maintained. In an office machines room the temperature is usually kept between 68-72 degrees Fahrenheit and the relative humidity is maintained between 35-40 percent. In addition, a method of cleaning the air--keeping dust and dirt out--should be employed. Finally, a good system will avoid extreme differences between inside and outside temperatures. An air conditioning-heating specialist can advise on an optimum installation for a particular situation (82, pp. 1415).

Expensive heating and air conditioning units for buildings are no longer a necessity, however, as forms of energy conservation emerge. Solar energy is one method. Another is electrical space conditioning which uses heat from the interior of a building to heat the perimeter, which is exposed to the elements. Sources of heat include machines, people, lights, etc. Generally, extra heating is needed only when the temperature drops below zero degrees Farenheit (123, p. 29).

Lighting is the next element of office design. Many of the visual tasks required in a WPC such as reading duplicated material, proof-reading, and editing, are visually demanding and require a higher quantity

and quality of light than that necessary for ordinary observation.
Figure 3 shows minimum illumination levels measured in footcandles
necessary for various office tasks.

As shown in the illustration, business machine operation requires
the most illumination, along with reading poor reproductions and rough
layout drafting. The correspondence secretary works with business
machines constantly and should be in a room with adequate lighting.

Type of Work	Minimum Footcandles Recommended
Business machine operation, reading poor reproductions, rough layout drafting, etc.	150
Regular office work, reading good reproductions, reading or transcribing handwritten work in pencil or on poor paper, active filing, mail sorting, etc.	100
Reading or transcribing handwriting in ink or medium pencil on good quality paper, intermittent filing.	70

Fig. 3--Minimum footcandle recommendations for office tasks
(81, p. 9)

All surfaces, including the ceiling, walls, floor, furnishing and
equipment, have light-reflecting characteristics, and affect the light
delivered to work. Lighting contractors and electric utility companies
can offer advice on lighting.

A final consideration of office design is static electricity, which
can be hazardous to a WPC. The problem associated with static electricity
is exemplified by one author, who notes: "Paper and mag cards stick
together. Cards pick up dust. Machines go into constant error. As the

card becomes demagnetized, content is lost. High breakdown factor results" (40, p. 24).

Some illustrations of specific events caused by static electricity lend a note of relevance to the situation:

'We had magnetic devices equipped with line finders. The operators hated them. Some even refused to type. They were all getting shocks at the keyboard,' reports Dr. James Kasprzak, U. S. Army senior management analyst. 'On occasion, I would walk by, point my finger at a machine, and "ZAP!" a spark would automatically trigger spontaneous typing.'

In a Denver Army center typewriter platens were found to spin as sparks, generated by operator foot movement on the carpet, jumped from the operators' knees into the machines. 'One spark could blow a $1500 circuit board, . . .' (40, p. 24).

Static electricity can be reduced appreciably (but not eliminated) from the WPC through the following means:

Keep relative humidity at 48 percent and dry bulb temperature at 78 degrees.
. . . .

Do not store WP equipment and/or media too close together.
. . . .

Place rubber mats under equipment for effective reduction of charge to machines. (Operators, however, will still experience shocks with this solution.)

Apply a chemical spray to existing carpeting. (This is only a temporary measure, and sprays are expensive and attract dust.) (40, p. 24)

Another author made similar statements concerning the possible unpleasantness of static electricity and added the following concerning carpeting:

Many carpet mills manufacture a commercial grade of carpet that eliminates the problem of static electricity. The Carpet and Rug Institute has established minimum standards for carpets that are classified as permanently static free (99, p. 15).

Procedures Manual.--A procedures manual for WP tells the user what process to employ to accomplish a desired result. According to the company and its applications of WP, procedures manuals vary in form. Some companies group all procedures for the total system in one manual, while other companies have many manuals, each designed for a specific application.

In an article devoted solely to WP procedures manuals, Ruprecht (114, pp. 6-7) suggests that one manual contain procedures for everyone and that copies of all stored material (form letters and paragraphs, for example) be provided in a separate binder. The following is an outline of her suggested contents for the procedures manual:

PURPOSE

A. Serves as a training guide
B. Serves as a reference guide
C. Reduces disputes
D. Allows easier delegation
E. Facilitates work measurement
F. Tends to improve morale

WORD PROCESSING CENTER PROCEDURES

A. Center operation
B. Original dictation
C. Prerecorded materials
D. Special requests
E. Tape identification
F. Logging

AUTHOR'S PROCEDURES

A. Documents to be processed
B. Original dictation and reports
C. Dictation techniques
D. Use of the WPC
E. Priorities
F. Routine work
G. Special conditions
H. Confidential items
I. Questions

ORIGINAL DICTATION

A. Dictation techniques
B. Use of dictation system
C. Detailed instructions for use of WPC

PRERECORDED MATERIAL

A. Stored documents
B. Stored paragraphs
C. Format samples

STORED TAPES AND TAPE IDENTIFICATION

Stored	Identification
A. Daily	A. Rush
B. Variable	B. Hold
C. Special	C. Rough draft

REVISIONS AND RETENTION

A. Normal retention   C. Rough draft
B. Extended retention

SPECIAL REQUESTS AND LOGGING

A. Rush items	5. Recipient
B. Confidential items	6. Playout date
C. Logging to include:	7. Number of pages
1. Tape reference	8. Date revised
2. Date recorded	9. Number of revised pages
3. Dictator	10. Comments
4. Description	

SUMMARY

A. Additional procedures which could be included, i.e.

1. Recording instructions	4. Procedures for
2. Style	written communications
3. How to handle confusing	5. Glossary of terms
dictation	6. Controls for the center

Ruprecht's outline deals only with word originators and WPC operations, as do other manuals mentioned in WP literature. Nowhere has a manual for AS personnel been described.

Equipment Financing.--In larger companies, the purchasing department normally decides which method of financing equipment should be used; however, the WP manager could have that responsibility in another company. One important factor in equipment financing is length of equipment retention. Generally, ". . . if [WP] equipment is rented for more than 29 months, it costs more than if it were purchased" (134, p. 22).

It is generally accepted throughout the industry that WP equipment is initially rented. Rental agreements usually run from three to six months, at which time the customer has an option to purchase, applying part of the previous rent to the purchase price, or to continue to rent. After the initial rental period, the equipment may be returned with a 30-day notice.

Leasing usually is based on a contract of from one to five or more years. Manufacturers many times have a lease-purchase option, allowing the customer to buy equipment after the initial leasing period, and applying part of the leasing cost toward the purchase price (134, p. 22).

Management of Administrative Support Personnel

The administrative support side of word processing is often ignored or at best only haphazardly initiated when all the glamorous equipment is being set up for the WPC. The reasons for this are varied: (1) work measurement in the WPC is more tangible and easier to evaluate than in AS; (2) many people do not regard AS as part of WP; (3) if proper job analyses are not made prior to the installation of WP, most people do not know what AS is supposed to do; (4) there is still a resistance among personnel to relinquish their personal secretary--their security blanket; (5) vendors of WP equipment have no direct vested interest in the conversion to AS, so do not promote its installation as aggressively as they do the WPC (12, p. 19; 13, p. 74; 37, p. 9; 137, p. 16).

In a typical workday of a traditional secretary, Shiff identifies the following five major activity groups and indicates the percent of time the secretary engages in each:

Dictation, typing, proofreading	25%
Away from desk (coffee, supplies, making copies, etc.	19%
Waiting for work (duplication of effort)	14%
Personal	5%
Administrivia (clerical, filing, telephone, etc.)	37%

(120, p. 4).

Of those areas, the first group (representing 25%) is the direct target for automation; the last group (representing 37%) should be the primary concern of the AS function. The duties inherent in that 37 percent consist of (1) mail handling, (2) telephone answering and message handling, (3) filing and information retrieval, (4) reception, (5) copying, (6) proofreading and distributing typed material, (7) doing research and completing data for principals, and (8) maintaining calendars and arranging meetings (19, p. 75; 68, p. 6; 120, p. 4; 121, p. 18; 136, p. 16).

The AS secretary is likewise a liaison between the principal(s) and the WPC. The responsibilities for a document cycle, except for typing, remain with the AS secretary. These responsibilities include ". . . proofreading not only for possible spelling and typographical errors, but for proper grammar, sentence structure and punctuation, coordination of attachments and/or enclosures, and for the final distribution of the document" (12, p. 20).

The success of the AS function is highly dependent upon the executives involved. Traditionally the greatest complaint rendered by executives is a lack of time. How is their time spent? According to Shiff,

> An overview of the typical middle manager or executive reveals that instead of spending 30-50% of his time on planning, he is fortunate to spend 5%. He is on the phone 15% of the time, taking

many routine calls that could be handled by a competent assistant. He is away at meetings 15% of the time. Most of his time, over 60%, is spent on trivia: forms, reports, routine mail, etc. These tasks can, and should be delegated to support personnel (121, p. 19).

One of the most common resistance factors in implementing an AS cluster is the unwillingness of executives to relinquish their personal secretary. In a study reported by vonDrekle, (128) over 34,000 observations of the activities of executives revealed that less than four percent of his day is spent interfacing with his secretary. Of that time, ninety percent is verbal and usually initiated by the secretary.

The study exposed, too, that only six minutes of an executive's time can be spent on one project or item before he or she is interrupted to do something else. Interruptions have been shown to decrease with the utilization of AS. Traditionally, one executive supervises the work of one secretary. Under the WP concept, the executive is relieved of that duty, which ". . . in many cases increased their productive time by 10% or more" (19, p. 75).

In most instances, an AS center is responsible to several executives. Having more than one secretary to a center serving more than one principal, affords many advantages: (1) workloads can be shifted when one executive has a peak period or during an illness or vacation; (2) telephone backup is provided; (3) duplicate filing can be avoided when each of the principals receives the same communication; and (4) meetings can be arranged more easily and changes made more quickly because the secretary maintains calendars of several principals (12, p. 19; 19, p. 75; 68, pp. 6-7; 125, p. 28).

The secretaries in a clustered center work as a team, many times rotating jobs to keep abreast of all work generated through the center. Sometimes these secretaries report to a secretarial manager. "This way, the work does not queue up according to the hierarchy of the organization and the secretary can get training and support from a professional secretarial manager" (68, p. 6).

The only way to successfully implement and manage an AS function is through competent supervision. However, since the position is new to most businesses, no standard policy has been established for filling the position; and, the labor market is limited because few people have experience in the field. Some authors suggest that by promoting a secretary from within the organization to the position of supervisor, benefits such as the following would be realized: (1) the "career path" objective of WP would be promoted; and (2) the supervisor would already be familiar with company policy and personnel (12, p. 20; 45, p. 36; 103, p. 134).

Commonly recognized drawbacks to this method include the following: (1) most traditional secretaries are unsupervised and unfamiliar with supervisory duties; and (2) it is often difficult for "one of the gang" to supervise former co-workers, and for those former co-workers to accept the supervisor (12, p. 20; 45, p. 36; 103, p. 134).

An alternative method of attaining a WP supervisor would be to promote someone (perhaps an assistant manager) from inside the company. Such a person would already be viewed as a superior by the secretarial personnel (instead of "one of the gang"), and he or she would be familiar with company policy, organization, and personnel.

Another method of attaining a WP supervisor would be to hire someone from outside the company. The individual may or may not be familiar with WP. If the person is not familiar with WP, the company training program should allow time to make up that deficit as well as time to become acquainted with company policy, organization and personnel.

Regardless of the method chosen for selecting a WP supervisor, there are certain attributes that an employer can look for in a potential supervisor. Some of the desirable traits and abilities of a supervisor offered by various authors included

> . . . leadership abilities, psychological insight, organi-zation, patience, tact, management skills, . . . knowledge of machine operation, . . . (45, p. 38).

> . . . a positive attitude toward change, the ability to express ideas and to relate to others, peer group acceptance, a tolerance of stress, . . . (12, p. 20).

> . . . flexibility, . . . contagious enthusiasm, a real desire for upgrading . . . self-confidence, a steady, pre-dictable and consistent temperament, . . . ability to plan, organize, implement and measure a project; to communicate in all directions; sensitivity to the needs of others at all levels; the talent to select people; accounting and reporting expertise, and the ability to use confrontation skills for discipline and motivation . . . (103, p. 134).

Once chosen and installed, the AS supervisor has a formidable task. One of the first obstacles encountered will probably be resistance from both executives and secretaries to the breakup of their one-to-one relationship (41, p. 8). However, as one writer put it, "As long as the extravagant ratio of one secretary to one principal is allowed, work distribution cannot be controlled and equitably divided" (121, p. 19).

Users of the AS center need to be sold on the idea. The center supervisor should be sure that users know the capabilities of the AS

personnel and are encouraged to delegate meaningful tasks to these
assistants (37).

Other supervisory duties include training and evaluating employees,
maintaining quality control and production, shifting work loads when
necessary, and making sure that principals receive required support
(50, p. 9). "The most valuable contribution an AS supervisor can provide
is to organize the flow of work through the center so that it is both
conducive to motivation and increases individual productivity" (12, p. 20).

According to Zangrilli,

> The great promise of WP, from a secretarial point of view,
> is the chance to become a specialist, to accept more challenging
> duties and be recognized for personal accomplishments, while
> gaining promotional opportunities and a broader awareness of all
> corporate activities. . . . Administrative Support programs must
> be maintained on a par with the WP center in both pay and
> prestige. One is indispensable to the other (136, p. 17).

Word Processing Center Management

The qualities of a WPC supervisor are like those for an AS super-
visor, with perhaps more emphasis on machine knowledge or adaptability.
The supervisor still must be a leader, be able to equitably distribute
work, maintain quality control of the center's output, be able to measure
production of operators, be knowledgeable of the company, be able to
recognize superior performers with advancement potential, and have time
to supervise.

It seems obvious that a supervisor must have time to supervise,
yet in some instances a "working supervisor" approach is taken. The
concept means that an individual is expected to spend only part of his
or her time in typical supervisory or managerial duties, and the

remainder is spent doing the same thing subordinates are doing. As one
author notes,

> Generally, supervisors in large manufacturing firms are not
> expected (in some cases not permitted) to perform actual assembly
> activities. Yet, in large banks, insurance companies and utilities
> it is rather common to find supervisors of clerical groups who are
> expected to spend as much as 50% of their time performing a portion
> of the clerical unit activities (60, p. 7).

When one realizes the magnitude of the task of supervising a WPC,
it is obvious that being a full- or part-time correspondence secretary
as well is not practical (60, p. 8; 75, p. 3).

Quality control is a vitally important area for the supervisor to
regulate. Fast turnaround time is never justification for inferior
production. As part of that control, proofreading should be emphasized.
"While each operator should proofread his or her own material, there
should always be the quality check of someone else in the center proofing
the work of another operator" (14, p. 5). In some instances operators
are solely responsible for proofing their own work; in others, a full-
time "proofer" may be employed; and in still others proofing is the
responsibility of the supervisor.

Another very important responsibility of the WPC supervisor is work
measurement, not only of the individual operators, but also of the WPC
itself. Conformity, however, has not yet been attained among vendors
for claims made for their WP systems, much less among the more numerous
users of equipment. And, commonly agreed upon definitions of the things
being measured have not been formulated. What is "turnaround time"--by
definition? What is "letter cost"--by definition? What does it mean if
a machine prints sixty "lines" per second?--What is a "line" (71, p. 3)?

Evelyn Berezin, (11) president of Redactron Corporation, recognizes the need for standards of measurement, points out where some of the differences originate, and offers a suggestion. The speed of printers is one confusing issue. In computing the wpm of their machine, manufacturers use no uniformity. The character-to-character speed cannot be compared, because speed of printing includes spacing, carriage return, tabulating, etc. Bereqin adds:

> . . . the actual speed depends upon what is a standard line length, what is the average number of characters in a word, whether or not printing is monospaced or proportional, and if monospaced whether it is 10 or 12 pitch, and whether or not bustrophedon printing (that is, printing alternately left to right and right to left) is done (11, p. 69).

Character clustering is also a consideration in printing speed. Some machines have the most commonly used characters close together, so printing, depending upon the material, takes less time. Printing speed, then, depends on the character sequence.

As a solution, Bereqin suggests timing printers on a universal paragraph and calculating their wpm from that number. In addition, perhaps a paragraph for tabular data should be used (11, p. 69). It was not evidenced in the literature, however, that the industry had given any consideration to the suggestion.

A company can, however, measure its own progress against past performance, both before and after WP was instituted. The figures might not be comparable industry-wide, but would certainly provide an adequate measure of WP progress for an individual company.

In one manufacturing firm, an evaluation was made of the actual work produced in their WPC against estimated costs of doing the same

work in the conventional way. In a year's time, $103,644 was saved by using a WPC (39, p. 12).

Another manufacturing firm maintains a line count for work measurement (86). As work reaches the center, its time of receipt is recorded by a time-and-date stamp. When a secretary takes a piece of work, he or she posts that information--the time the work was received by the center--to a log sheet, as well as recording the originator's name and department. After the job is completed, the secretary records the time of completion, the line count, and the type of work--longhand, dictation, revision or statistical. Templates placed over the finished copy determine line count. Revisions receive line credit only for the lines revised. Each line on the log sheet is keypunched, compiled, and displayed by principal, with totals by department and totals for the secretaries and the WPC.

Macomber (86) states that from the system it is learned

--How our turnaround is running. Our records show an average turnaround of 236 minutes or about 3 1/2 hours.

--How much dictation there is and by whom. From this we make efforts to place dictating units where most needed, to suggest training sessions where needed, and to suggest using form letters or standard format letters where possible.

--How the secretaries are performing. We don't "play" one secretary against the other, but we do like to see the activity above a certain line count on average.

--When to expand the center--either with people or equipment. We can monitor the users; we know when other departments are expanding personnel and work, and we can plan to have the support necessary when needed (86, p. 10).

Although most companies pay their WPC employees an hourly wage, some companies use line or page counts as the basis for compensation. Armco

Steel Corporation does not agree, and states, "We never dangle it over people's heads, and no one is bothered by it" (66, p. 5). Individual information is used to evaluate an operator's progress in Armco's training program and to identify possible problems at an early stage. In Armco's center, each secretary completes a daily work sheet, based on page count (as opposed to the line count used in the system just described by Macomber). These log sheets are accumulated monthly, factored according to type of input (dictation, longhand, statistical, etc.), and used to calculate the center's "percentage of effectiveness."

Another company (111) uses a weighted page count measurement system in which the individual operator logs work as it is done and a "Daily Log Summary" is computed monthly. Typing from original dictation is given 100 percent credit; from hard copy, 75 percent credit; revised material, 50 percent credit; and prerecorded material, 15 percent. Weighting recognizes that it is more difficult to type from original dictation than to let the typewriter replay prerecorded material.

One bank also reports a system of measurement which incorporates factoring, but its figures are used to scrutinize each secretary's output. A time stamp is used to log turn around time to the second, and a computer program used to calculate individual performance. According to the writer, "Never has each secretary had such a true report of her work produced, . . . where help is needed, promotions and demotions are deserving . . ." (119, p. 11).

One final article dealing with operator measurement suggests a range of performance for each operator. Thus if it were determined that the

average production in a center was 125 lines per hour, the following
rating structure would result:

Rating	Lines per Hour	
Excellent	155 & over	
Superior	135 - 154	
Satisfactory	115 - 134	
Marginal	95 - 114	
Unsatisfactory	below 94	(115, p. 33)

Such a structure would allow each secretary's performance to be
appraised on a tangible scale according to the total center output, and
would likewise give the secretary a basis for a personal goal.

It is becoming common practice to have a "charge-back" system for
work done in the WPC. This shows how the costs of the center are dis-
tributed throughout the various departments using the center's services.
Costs per page or per line are the most common methods of determining the
amount to be "charged back" to each user department. The same weighted
system used to determine operator output is recommended (32, p. 14).

Besides allocation of charges, the information gained in a charge-
back system can be an important management tool for the center itself,
as noted by Sandburg:

> Detecting problems. A fully-trained operator should
> maintain good production levels relative to past performance. . . .

> Upgrading your standards. If all your operators are consis-
> tently maintaining "superior" or "excellent" ratings, upgrade
> your standards.

> Calculating Equipment Potential. If other equipment can
> increase your standards, calculate new probability charts on new
> equipment potential. Use these increased standards as part of
> your evaluation of the new equipment.

> Evaluating objectively. Use your production reports in your
> performance appraisal of your staff for objective evaluation.

Discovering Go-Getters. Use your submitted weekly production reports to evaluate non-measured work. Oftentimes, this report can detect those individuals showing that extra initiative to assume additional responsibility.

Deciding on Flexible Working Hours. If you have flexible working hours, you will be able to justify its value or consider eliminating it (116, p. 50).

Equipment

In their recently published (January, 1977) book on WP, Rosen and Fielden (113, p. 11) list as WP equipment the automatic typewriter, CRT editing devices, shared logic systems, high-speed printers, copiers, facsimile machines and composers.

One's definition of WP determines which machines are "part of the system." Someone who defines WP as another name for a kind of typewriter would have only the one piece of equipment on the list. If, however, WP includes all aspects of getting a communication from a word originator to the intended audience, then the list of equipment expands considerable. In this section, equipment is categorized as input WP equipment, keyboard equipment, facsimile equipment, and records management and reprographics equipment.

Input WP Equipment.--The first phase of the WP system is dictation by an originator--manager, salesman, policeman, engineer, AS secretary. In a traditional office this function is generally accomplished through a one-boss--one-secretary situation, with the dictation being taken in shorthand or transcribed from a desk-top transcription unit. In a WP environment, the dictation is usually via some recording medium, and much of the time, directly into the WPC.

Benton (10) divides recording media into three categories: Off-Line, On-Line, and Remote systems. Off-Line systems are designed as individual desk top input units. A belt or tape is the recording medium, and these must be delivered to the typist. Off-Line systems allow as many word originators to dictate at once as there are units available, and allows a word originator with lengthy work to dictate without tying up the On-Line system.

On-Line systems use the telephone to input dictation, and Benton cites the following advantages:

> . . . faster typing service because all inputs are directed to central recorders . . . faster secretarial access . . . accurate up-to-minute knowledge of workloads. Since all inputs are recorded at the point of transcription, there will be far less media lost . . . easy to use . . . more facility for less money . . . no "make ready" or "clean up" . . . (10, pp. 19-20).

Benton subdivides On-Line systems into three types--Private Wire, Touchtone, and PBX input. All three are centralized systems, using the telephone to input dictation. The Private Wire set-up is installed by the dictation systems company, and offers the following advantages:

> --Equipment gives instant response to originator's control signals
> --Better input control
> --One company responsible for maintenance
> --Does not tie up Bell Telephone equipment
> --Less expensive for most installations (10, p. 19).

On-Line Touchtone systems utilize Bell Telephone equipment (10, p. 20). Advantages of the system include

> --Allows complete control from any touchtone phone in the U.S.
> --Equipment gives instant response to control signals
> --One company responsible for maintenance . . .
> --Less expensive to operate than PBX (10, p. 20).

The last On-Line system is the PBX Input; a central system using any Bell Telephone to input dictation. Its advantages include

   --Use any telephone
   --Cost justified for low volume originators (or telephone locations)
   --Easier installation for scattered locations
   --Can be used where private wire installation is not possible
   (10, p. 20).

The final classification of dictation equipment is "Remote" input equipment. Some remote equipment is lightweight recorders that are hand held and battery operated, allowing dictation anywhere. A "phone-in" remote system allows any Bell telephone (at or away from the company) to access the On-Line centralized system. ". . . the office is as near as any telephone, 24 hours a day" (10, p. 22).

The above classification of dictation equipment is dependent upon the way the equipment is connected to the transcription location. The same equipment is classified differently by other authors. For example, one classification (34) is according to the type of recording media--discrete media and continuous flow (endless loop). Discrete media are categorized as desk top units and portable units. Continuous flow is categorized as central recording via telephone or PBX systems, and central recording via private wire systems. It is important for the WPC supervisor to recognize classification differences when evaluating equipment.

Keyboard Equipment.--IBM's Selectric Typewriter, introduced in 1961, was in large part responsible for the growth of WP; for it provided the mechanism around which IBM and most other manufacturers built their separate editing logics. "The Selectric, with its familiar 'golfball'

typing element, provided the heart of the first true WP machine, IBM's
text-editing MT/ST . . . as well as the later . . . MC/ST, and the
publication-oriented MT/SC, or Selectric Composer" (72, p. 21).

Varying discussions and breakdowns of equipment are given by dif-
ferent authors (5, p. 18; 24, pp. 20-22; 72, pp. 22-23; 77, p. 38;
113, p. 84). Rosen and Fielden offer, perhaps, the most current
classification:

> Automatic repetitive typewriters
> Stand-alone correspondence and text-editing typewriters
> Communicating typewriters
> Computerized systems (113, p. 84).

The automatic repetitive typewriter is a rendition of the player
piano roll, using paper tape to code and replay material.

Stand-alone (not connected to a computer) correspondence and text-
editing typewriters use some form of magnetic media (tapes, cards,
cassettes, cartridges) for recording, correcting, and printing material.
Both single and dual media stations are available. Single media stations
are limited in revision capabilities, since revised material cannot be
transferred to an updated tape or card. Dual media stations utilize
magnetic cards or tapes and have greater revision capabilities than single
media stations.

Selection of type pitch (pica, elite, or proportional spacing) is
available on some models by simply changing a knob on the typewriter. A
console accompanies the typewriter to accommodate the internal logic and
a magnetic media reader.

The cathode ray tube (CRT) is similar to a television screen.
Instead of typing initially onto a sheet of paper, typing appears on

the screen. Revisions, additions, corrections, etc., of a single character or an entire paragraph are easily effected. A cursor (position indicator) appears on the screen to allow the operator to pinpoint a specific location. Then the material can be changed, deleted, or even moved to another location on the page.

After error-free copy is attained on the screen, it can be output typed at speeds of 540+ wpm. (According to Rosen and Fielden, CRT models are now available which can print at 650 wpm, and models will soon be available which can print up to 1,000 wpm.) Print-out time need not be wasted, either, since the operator can begin corrections on the next document while the first is printing. (113, pp. 84-90).

Communicating typewriters can transmit text from one terminal to another (and produce original quality copies at both locations) or to a computer. Using standard Bell telephone system telephone lines, the terminals can be located anywhere--in-house or across continents. "Because of their ability to 'type it here and receive it there,' some communicating typewriters are being marketed not only as WP devices, but also as message terminals, substitutes for conventional TWX or Telex arrangements at much less cost" (72, p. 23).

Another author defines a communicating word processor (CWP) as ". . . an automated piece of office equipment that is in essence the combination of a telephone, typewriter, and a small-scale, special purpose computer. . . ." (89, p. 2).

According to Cumpston (30) the convenience of communicating typewriters is that material already typed on magnetic medium can be sent

via the communicating typewriter without further typing. The Xerox 800 sends information at up to 120 characters per second--about two pages of double spaced text per minute. The Daconics shared-logic system, on the other hand, can communicate at up to 6,000 words per minute.

Rosen and Fielden (113, p. 91) add that the error correction capabilities of the equipment allow for editing and review of information off-line; the only on-line time to pay for is actual transmission. That could be a tremendous cost-savings when using a time-sharing computer.

Computerized systems offer greatly increased capabilities for the creation of lengthy documents having many complex revisions. Adding, deleting, and rearranging are accomplished easily and quickly by the computer. Changes are facilitated by such capabilities as a global search, which enables the computer to scan all material to locate all instances in which a specific word or phrase is used and to change or delete the word or phrase.

In addition, more than one operator can be working on the same text at different terminals. Printout can be as fast as three seconds per page on the computer or at 150 words per minute on the terminal. It can be printed on bond paper or multilith masters; the computer can typeset the material for publication; or it can be used to instruct photocomposition equipment.

The communicating typewriter and computerized systems merge data processing and word processing (113, p. 91). As early as 1972, in the second issue of IBM's Word Processing magazine, it was reported that DP and WP functions were being successfully combined by a steel company via

use of a CMC (Communicating Mag Card) to communicate with a remote time-sharing computer (78, p. 14).

Other accounts of a communicating typewriter being used as a word and data processor appear in several publications (7, 17, 104, 133, 135).

In a 1973 article, it was asserted that ". . . about 75% of firms presently using or considering using WP, can feasibly utilize the computer in this area" (6, p. 18).

By 1974 shared logic and multi-function word processors were in use. Shared logic systems ". . . wed several WP terminals, . . . to a mini-computer that performs file maintenance, text editing, and other tasks for all of the terminals" (90, p. 11). The multi-function system is ". . . gradually displacing the familiar keypunch station in third generation DP operations" (90, p. 11).

An article published in 1975 stated that the technologies existed to integrate WP, copying, and DP equipment (24, p. 36). That prediction is fast becoming reality, as evidenced in an article published September, 1976 concerning an International Word Processing (IWP) conference. It stated:

> . . . the DP'ers couldn't help feeling that their territory was being invaded--their domain never again to be sovereign. They saw minicomputers, microprocessors, cathode ray tubes (CRTs) and data communications all merged into word processing machines that put more power into the hands of the administrative secretary than DP'ers could care to admit (131, p. 29).

These new technologies, as noted by Konkel and Peck (73), have expanded the usefulness of WP/DP systems. Stand-alone minicomputers have a global search, scrolling (rolling text off top or bottom of CRT), automatic pagination and headings, and deletion, addition,and insertion

capabilities. Shared logic systems can provide even more--more storage,
OCR, high-speed printing, photocomposition, and peripheral programs.
More sophisticated systems can yield computer output microfilm (COM).

As a prediction of the potentials created by the WP/DP marriage,
Konkel and Peck note a paperless office, a worldwide communication
network from terminal to terminal to transact all business, and all
publications available in soft copy form (CRT) instead of being printed
on paper (73, p. 30).

In the Spring of 1976 IBM introduced two WP/DP products--the
46/40 Document Printer and the Word Processor/32. The 46/40 Document
Printer, in the computer communication mode, can   "(1) generate auto-
matic letters from DP files, (2) act as a terminal to a time sharing
data base, (3) act as a remote printer, and (4) batch information for
transmission to a computer or to another 46/40" (110, p. 3).

The Word Processor/32 combines a computer and magnetic card
storage. "Its DP/WP functions are practically limitless; it brings
word processing functions to DP users and data processing functions
to WP users" (110, p. 4).

These technological achievements make it necessary to train
equipment operators. It is predicted that both administrative and
correspondence secretaries will have to acquire a more technical
knowledge of the systems and be able to understand data bases, report
formulation, and computer data access methods (48, p. 49).

Facsimile Equipment.--Another system of sending and receiving infor-
mation is facsimile transmission, which is a cross between the

communicating typewriter and office copier. Facsimile equipment handles typed, graphic or handwritten material. Mich McCaughey, the Xerox 800 communicating typewriter product manager, states that ". . . if a document is already typed but not recorded on a magnetic medium, facsimile is the ideal means of priority distribution" (30, p. 21). He continues, "Most large offices already have facsimile equipment; consequently the cost of using it to supplement the word processing center's needs is modest--especially in the case of companies already using WATS lines" (30, p. 21).

Richard Nelson, chief executive of QWIP, a facsimile manufacturer, says,

> . . . facsimile transmission is a necessary part of the WP/AS system because it fills the gap between the multiplicity of locations at which material may originate and the WP center. . . . the convenience facsimile transceiver complements and enhances the cost-effectiveness of the WP/AS system (30, p. 55).

According to one author, "facsimile equipment is now in its third generation (sub-minute, one-minute, and two-minute transmission), to be replaced by 1979 by microprocessor facsimile transceivers"--the fourth generation (2, p. 101).

Records Management and Reprographics.--The management of information includes three major segments: DP, WP, and executive control. During recent years the budgets of each have shown a marked increase in the allotment for automation (42, p. 19). Increased use of automated equipment using cassettes, belts, magnetic tape and cards, etc., has expanded the traditional filing system. Efficient storage and retrieval is dependent on specialized equipment and procedures.

A look at the advertisements in almost any business periodical reveals some of the storage options which, of necessity, have replaced the file folder. Just a few that are now available include (1) a top-bound, flip-up mag card desk organizer, for storing up to ten mag cards and hard copies together; (2) a file protector, which is a three-ring notebook containing pages with pockets--one pocket for the mag card and one for the hard copy; (3) modular cassette storage--a square unit with pockets on each side for storing three rows of cassette tapes, five tapes per row, or a storage capacity of sixty cassettes, with the option of stacking additional units on top as the need arises; (4) cassette binders, which open like a file folder and have pockets to accommodate six or twelve cassettes; (5) floppy disc storage--a three-ring binder containing vinyl sheets with pockets for storage.

Having a WPC and an AS center in two locations also alters the traditional filing setup. Since AS centers eliminate the one-boss--one-secretary situation in which the secretary maintained files and knew most of the correspondence initiated by the principal, centralized files can be used. The WPC can route hard copies to all involved parties, as well as a copy to the AS center. The AS copy is filed and all others are discarded after being read. There is no need to maintain several copies in individual offices, since several originators use the services of one AS center.

Harling (54) reported that carbon copies had been completely eliminated in one utility company. MC/ST's were used for typing originals

and gummed mailing labels. Then a junior office clerk produced the necessary copies on a high-speed copier, attached the labels, and mailed or delivered the copies. The following advantages to the system were cited: (1) labor costs were reduced with the use of a junior office clerk instead of a typist to handle non-typing functions; and (2) turn-around time was improved (54, p. 10).

Reprographics as an industry has grown rapidly during the past several years. As the industry has grown, so has the user's job of selecting and managing copying equipment. Wilds states, ". . . copying machines have . . . [begun] to look more like printing presses, and some are called copier-duplicators. Now the line between duplicating and copying is blurring to the point of invisibility" (132, p. 75). The prime buying consideration for copying equipment has proceeded through quality of copies, speed of reproduction, and cost per copy, and we're entering the systems approach. Hastings states, ". . . copy management on an organization-wide basis is becoming recognized as the way to achieve the productivity and economy necessary in the current environment" (58, p. 2).

Three basic approaches to copy management are noted by one author. A "one-on-one" system, found in many small firms, has one individual responsible for one copier as well as other duties. In the second system, a "floater," often employed in large firms, is responsible for maintaining a number of copiers throughout the building. And lastly, a "dedicated" operator monitors copiers in a centralized center and makes almost all copies (27, p. 7).

Weisman (130) feels that WP should be an integrated system, encompassing automated typewriters, remote input WP equipment, and a wide

range of office machines, including copiers. He says that to exclude the copier from WP is both "short-sighted and self-defeating," since it is part of the paperflow system with which WP is concerned.

Hanson, (53) too, feels that the copying function is part of the WP system. He classifies copy management as basically centralized or decentralized. A centralized system entails a central duplicating department or a single copy station and depends on a mail delivery service for receiving originals and sending copies.

A decentralized system (also referred to as a "satellite" or "water cooler" system) affords free access by any individual to any copier for whatever purpose.

Mutations of these systems are common, and when the copying function is included in WP the configuration possibilities multiply. One company reportedly centralized all copying in its mail distribution department, located adjacent to the WPC, and connected by a "pass-through counter" door. On final work, carbon sets were used by the WP personnel to make up to five copies. For work requiring more than five copies, an original was given to the mail distribution department. In that department, up to seventy-five copies were produced on a high-speed copier, and jobs requiring more than seventy-five copies were offset duplicated (53, p. 12).

In another company, WP personnel again used carbon packs for up to five copies; for six to twenty-five copies, the AS was responsible for reproduction on a copier; and for more than twenty-five copies an offset duplicator was utilized (53, p. 13).

Depending upon the company set-up and requirements, either the WPC or the AS staff is responsible for making and distributing copies. Having the copiers located in an AS center minimizes copier misuse and enhances the efficiency of a consolidated filing system. Associated departments do not have to maintain file copies of each other's documents. Any needed reference material can be obtained from the consolidated files of the AS center, copies made on the copier, and the file copy replaced.

Wilds' (132) viewpoints parallel Hanson's (53) concerning the impact of WP on office copying. Wilds feels that the integration of typing, copying and mailing can be profitable, and states:

> . . . By locating the WPC, copier, collator and mail in the same place, a marked decrease in paper handling can be achieved. WP produces a single master set of original pages which are copied and collated in one pass, removed from the collating bins and sorted into mail racks in one handling (132, p. 76).

An increasing number of companies are beginning to use in-house printing operations for jobs which formerly were sent to a commercial printer. "Quick Copy Centers," as they are called, generally utilize strike-on or photocomposition equipment. The IBM MT/SC (Mag Tape "Selectric" Composer) is a strike-on model. Krauss says, ". . . the most sophisticated . . . model [MTSC] has a computer capable of storing 24,000 characters and can be programmed to do almost an infinite variety of composing challenges. . . . Its print-out capacity is 186 words a minute" (74, p. 9). Photocomposition equipment, Krauss states, ". . . uses a photographic process thus making the image sharper than that obtained with a strike-on machine" (74, p. 9).

Perhaps Krauss' most important statement for the WP application is, "One plus in all these units is that you do not need a professional, high salaried compositor to operate the equipment. A regular typist can easily be taught to become a first rate compositor in a relatively short time" (74, p. 11).

Another area of reprographics and records management is micrographics. Laird defines microphotography as a means of "photographing papers in a greatly reduced size, maintaining the film either in rolls or strips or data-processing aperture cards" (77, p. 153). Micrographics offers several advantages to conventional filing of "hard copies," according to Harrod:

(1) . . . microfilm is . . . more permanent than the finest rag content paper available.

(2) . . . microfilm images . . . save over 98 percent of the space original documents require.

(3) Low reproduction and distribution costs . . .

(4) . . . little likelihood of losing a document. . . . original film copy need never leave the filing area . . .

(5) . . . any one of a million records can be retrieved and viewed in a matter of seconds . . .

(6) . . . virtually eliminates the need for costly filing cabinets or shelving. . . .

(7) One of the largest factors in deciding to go to micrographics is the mere cost of handling paper. Paper files and paperwork processing usually cost . . . an average . . . per file, . . . of thirty-five dollars. Then, the maintenance of this information may be the largest single cost within an organization. Not only does it cost $6500 every year to create and file the content of one, four-drawer file cabinet, but it also costs $200 each year in floor space and personnel charges just to keep each cabinet. Add to this the cost of misfiles. Studies show that a typical company misfiles from 1 to 5 percent

of its records, and one-half of these files are permanently
lost. . . . (57, p. 9).

Reprographics and records management is a large and growing field,
which when examined in its entirety, should be considered part of the
total WP system.

WP Training Programs

There are basically two avenues open to businessmen wishing to
train personnel for a WP system--in-house or vendor training. Training
and education is needed in several areas: word originators need to be
trained in the proper use of dictation equipment and in the art of
dictating; executives need to be retrained in the use of their AS per-
sonnel; and AS personnel need to be trained or retrained in the elements
of their job (which could include being a word originator). WPC oper-
ators need to be trained in the use of equipment; the office manager, AS
supervisor, and WPC supervisor need to be educated in the system of
WP--its advantages, uses, change of paperflow.

Vendor training has been of a very basic nature, dealing mainly
with machine operation of dictation and typing equipment (36, 79, 118).
A few articles have been written as "self-help" for word originators,
pointing out common communications errors and suggesting corrections or
better methods (69, 88, 105).

Several authors (14, 51, 100, 127) discuss in-house originator
training. In-house word originator training responsibilities generally
fall on the WPC supervisor, or a program implementor. The initial step
in such training is to hold a general (and mandatory) seminar for all

word originators in which dictation machine operation instruction is given. The user of the WPC must know how to obtain normal service, how to obtain priority service, how to make corrections, and how to arrange for the proper number of copies. A manual containing the same information should be available to all users.

Next, the trainer or implementor should perform a document analysis for each word originator to determine document types suitable for machine dictation. Individual or small (two or three) group follow-up sessions are recommended to discuss the findings of the document analysis as well as to answer any questions or objections the originators might have. In addition, benefits--to the individual, to the organization, and to the system--of machine dictation should be discussed. For anyone unfamiliar with the dictation equipment, practice sessions should be provided.

Periodic sessions for training new or transferred employees should be scheduled on a regular basis. Later, "brush-up" sessions for veteran users are of value. These sessions should include not only effective machine operation, but should also be aimed toward improved communication skills.

Training should include "live" demonstrations of equipment and a tour of the WPC. Without such an orientation, many originators form the impression that the WPC is equipped with a lot of "magic computers" that automatically type from voice input, bypassing the manual typing.

Hershey (62) suggests development of a seminar for administrators in communications management and support utilization. Such a seminar, he says, "could focus . . . upon audience analysis, communique planning,

message impact analysis, support personnel training and utilization, prior message analysis and adaptation, and the like"(62, p. 22).

Effective utilization of AS personnel could be a tremendous time savings for administrators. Analyses should be made to determine those things which could most appropriately be delegated. (37, p. 62). Seminars for both AS secretaries and their managers could be conducted to suggest specific activities that should be delegated to administrative secretaries. Task-solving seminars could be held for administrative secretaries that require completion of problem-solving exercises similar to those which could be expected from managers (61).

Administrative secretaries relinquish most of their typing jobs when WP is initiated. Revamping and retraining is needed to fill the void. In companies where duties become more specialized, other duties could be given up as well--telephone answering, filing, duplicating. By regrouping administrative secretaries, and having them service more than one manager, the volume of work increases. Effective delegation by each of these managers further utilizes their paraprofessional skills (37, p. 120).

Understanding the job of a manager is considered important for AS personnel. Training given to administrative secretaries by at least one company (1) included a sixteen-hour course illustrating how managerial problems and pressures affect the administrative secretary; showing the planning, organizing, and controlling functions of management; explaining that there is no one best style of management and offering reasons for differences in styles; suggesting that a professional should be flexible

enough to work with and learn from any style; and discussing aspects of change. In addition, the course included sessions on communication skills and employee-supervisor relationships, stressing the importance of open communications and feedback; professional standards of performance, allowing each individual to develop standards for his or her own job; and self-development, assisting the employee in developing short- and long-range goals for on-the-job self-improvement.

The WPC is another focal point of training. Efficient operation of the equipment, knowledge of procedures and standards within the center, and competence in record-keeping are all necessary components for a productive employee.

Gormley (47) reported a training program which included a language skills course consisting of a diagnostic section and self-study lessons. The diagnostic section dealt with proofreading and correcting, typing and layout of handwritten copy, and transcribing and editing dictated material. It was designed to pinpoint individual strengths and weaknesses in ". . . spelling, punctuation, grammar, capitalization, hyphenation, syllabification, consistency, typos and quotes, editing and following directions" (47, p. 88). The self-study lessons were designed to improve those weak areas identified by the first portion.

Vendors in many instances, as reported by various authors (37, 66, 95), provide initial training for a company installing its equipment. They will likewise provide trainer-education to enable an individual to take over future training in-house.

One company (101) reported that their secretaries evinced such a "thirst for knowledge" that luncheon training programs were initiated

on an on-going basis, completely voluntary and without remuneration. On-the-job training was required for WP secretaries beginning on new equipment, and WP and AS secretaries were cross-trained. However, the luncheon training sessions were initiated by the secretaries, Such topics as grammar, spelling, word usage, sentence structure, punctuation, human relations, office etiquette, mail handling, telephone techniques, and filing were discussed with the certified professional secretary (CPS) who conducted the luncheon meetings as well as the required training courses in the company.

Eastern Airlines cross-trains their secretaries in both the AS area and the WPC (102). Initially secretaries spend eight weeks learning to operate the magnetic media typewriters. Then they rotate on a three-week basis learning AS functions and returning to the correspondence side. It was stated that "Our studies show that a secretary's output peaks at three weeks, particularly on the correspondence side, and begins dropping in the fourth. So, far from cutting into production, rotation actually improves it" (102, p. 7).

The rotation and familiarity with work areas allows for shifting of talents to cover absences or heavy work-loads. And Eastern reports having had no turnover for the year prior to the publication of the article.

When a WP system is begun, managers and supervisors are often recruited and trained from the secretarial ranks. In one instance (47), eight secretaries were chosen, after screening all who wished to apply for the positions, to form a project team and implement the WP system.

From those eight, the managerial and supervisory positions were later
filled. The team received a communications-skills workshop and mana-
gerial training. They presented each phase of WP implementation to all
levels of employees, made presentations, handled objections, made expla-
nations, and generally "sold" the system to the company.

Other suggestions for training supervisors include a course in
company policy and procedure in connection with the administration of
personnel, assistance in determining a personal management style, some
basic management education (budgeting, planning, personnel relations,
records management, etc.), machine or technical training, and communi-
cations training (103, p. 118).

Lorraine Lear, (80) Director of Administration for the IWPA, suggests
a certification program for WP managers. Most WP managers are former
secretaries, and often still regarded as such by peers. The certifi-
cation program would, according to Lear, lend credibility to the compe-
tence of these managers. In addition, it would insure that professional,
qualified people fill such positions.

Educators and the WP System

In WP, as in all areas, educators must first become familiar with
the concept and how it operates in business, and then teach. Touring an
operative WPC can be a valuable asset, as noted by Nordiello (97). She
reports having witnessed a dramatic change in teachers' attitudes toward
WP after a tour of her center--a tour which was supposed to have taken
thirty minutes, but which stretched into two hours! Before the tour,
she states that some of the teachers expressed fear that WP might someday

put secretaries out of a job. Upon leaving, they ". . . concluded that
WP isn't a threat to secretaries--it's an ally" (97, p. 87). That same
opinion is echoed by Dillon, who states, ". . . in the end we can expect
word processing to raise the standards of the professional secretaries"
(35, p. 8).

Dillon says, also, that ". . . beginning secretaries of the future
will have to be better qualified than at any other time in the history
of the profession. Educators will have to move fast to close a widening
gap" (35, p. 8). Lira echoes Dillon's opinion, saying, "Some small
change has come about in this deficit area in the last two years; how-
ever, the response must be much greater and come about quickly to fulfill
the needs of industry and our young people who are entering today's job
market" (83, p. 45).

Mary Lira is accredited with being the first person to introduce
magnetic-media keyboard training in a public school system (83). The
adult evening school class began with twenty-two students and only one
machine. Upon completion of the first course, request was made to
present another course, and the school director asked, "How many of that
kind of typist do you think you're going to need . . .?" (83, p. 45).

According to Lira,

> . . . too many educators still ask whether or not we need
> to train for magnetic-media typing. While some don't think it's
> necessary at all, others feel that only a limited, infrequent
> training program is necessary. The attitude seems to be that if
> they don't look at it, the problem will go away (83, p. 45).

Perhaps that attitude is true of some educators, but two years prior
to the 1974 publication date of Lira's article, the first issue of Word

Processing contained an article by a business educator, Ruth I. Anderson, (4) who noted the impact WP would have on business education programs. She cited the necessity for upgrading typing and machine transcription requirements for those training to work in a WPC. In addition, she listed as essential, "A thorough knowledge of correct typing usage, spelling, punctuation and business practice . . ." (4, p. 7).

The secretarial or administrative assistant may or may not use typing and shorthand or machine transcription, but will be assisting management in many areas, from handling business by phone, to assembling information for reports and dictating routine correspondence to the WPC. Anderson suggests, then, that "courses in office machines, office management, including methods and procedures, business and report writing, data processing, records management, psychology, supervisory techniques, and human relations should provide excellent preparation" (4, p. 8).

The need for specialized education for coordinators and managers was likewise noted by Anderson, (4) but of particular interest was the suggestion of an additional, essential ingredient to complete the program--an internship, functioning much like a student-teaching program. If the educational institution has a WP system, the internship might be on campus. If not, business firms throughout the community would probably participate in such a program (as many are doing in cooperative education programs). The learner would first observe and gradually take on more responsibility until at the end of the internship the student would need only guidance instead of supervision.

At least one office has expressed a desire for just such a partici-pating work program (55). The student would be hired by the company while still in school, and upon graduation, qualified students would be eligible for openings as full-time employees, thus aiding the students in their training and the company in its search for qualified employees.

An internship program is a very excellent training mode; however, there are times when such is not feasible and educators would prefer to establish a WPC in the classroom. For educational institutions with several campuses, a "WPC on Wheels" could be a solution. In a California school system, a mobile trailer houses WP equipment used for the initial training of students in five schools. The "trailer"-room course accom-modates fifteen students at a time. It stays at each school from seven to nine weeks to complete the introductory course (31).

At College of the Mainland in Texas City, Texas, no magnetic media equipment is used in their simulated WPC (9). The center has two primary purposes: "(1) to familiarize students--both business and secretarial majors--with word processing, and (2) to develop an understanding of the working relationship between word originators, or principals, and the transcriber/typist" (9, p. 12). Equipment includes electric typewriters, some dictation units, and microphone input units. Management and mar-keting majors as well as some college instructors gained knowledge and experience in dictation techniques by using classroom equipment to dictate actual correspondence or homework assignments from other courses. The transcriber-typist gained experience and skill by transcribing the material and returning it to the word originator.

Tarrant County Junior College, in Fort Worth, Texas, reports a successful program with only one magnetic media typewriter (18). As Burdine states, ". . . it was felt that the WP course should offer more than teaching students to use WP equipment. Too often, people are being led to believe that WP is strictly an equipment-oriented concept. Nothing could be further from the truth" (18, p. 4). These students develop both correspondence and administrative skills such as the use of the magnetic typewriter (acquaintanceship level), machine transcription, machine dictation, planning meetings and conferences, and making travel arrangements. As a culminating experience, students are required to offer solutions to problems one might encounter when setting up a system--how to set up a WPC; how to divide AS among executives; possible resistance factors to be encountered.

Professional educator opinions about WP are many and varied. One issue concerning business educators is the assertion that shorthand will no longer be necessary after WP is fully utilized by businesses. The IWPA in a 1975 news release stated that shorthand skill "is becoming an archaic job requirement" (124, p. 40). In another article it is stated, "In too many high schools and colleges, business courses are still stressing such soon-to-be-antiquated skills as shorthand and typing on manual typewriters, . . ." (84, p. 1).

In response to statements such as the above, a study was made for seven consecutive Wednesdays of listings for secretaries in the New York Times. The results: ". . . of the 956 job listings only 9% say no

steno or indicate machine transcription, [while] 50% specifically indi-

cate shorthand requirements" (64, p. 14).

A responsive article by Anderson (4) notes other evidences of the

continued necessity for shorthand:

(1) . . . only about 10 percent [in 1976] of all companies in
the United States currently use word processing equipment. . . .

(2) . . . basically word processing involves the utilization
of dictation equipment. Manufacturers of dictation equipment
have been predicting the demise of shorthand for the past thirty
years . . .

(3) . . . there will continue to be many businesses that will
not install word processing systems. . . . there are many top exec-
utives who insist on having a private secretary or administrative
assistant who can take dictation in shorthand. . . .

(4) . . . The administrative secretary . . . may find it helpful
to record the exact wording of important phone calls. . . . for
dictating to the word processing center . . . difficult letters
which must be carefully phrased can be jotted down in shorthand for
more accuracy. . . .

Shorthand can also be extremely useful to administrative
secretaries who are required to collect material for their
superiors, outline reports, take notes in the company or public
library, summarize important articles, and record information
during an interview . . .

(5) . . . what about the secretary who desires a promotion [in
a company whose top executives require shorthand].

(6) . . . what happens to the secretary who changes jobs? . . .
the next job . . . [may] require shorthand . . . (4, pp. 18-19).

Nance (96) is concerned with the reliance businessmen seem to be

placing on the capabilities of equipment. He says, "In my discussions

with over a hundred managers of word processing centers, one statement

comes through loud and clear: 'With magnetic card and tape typewriters,

even a poor typist can turn out good material'" (96, p. 14). He offers

a cost analysis which shows that the services of a good typist using a

standard electric typewriter often benefit management more than the
services of a poor typist using magnetic media, and discredits the assertion
that WP is a substitute for a poor typist.

Other articles (21, 22, 93) deal with the job satisfaction of WPC
equipment operators. In a research study by Casady, (22) the following
comments by magnetic typewriter operators indicated the most satisfying
aspects of their job, beginning with the most frequent response:

1. Turning out a large volume of work with speed
2. Turning out perfect copies; the ease of correcting errors
3. The variety of tasks
4. Responsibility, independence, making own decisions
5. Keeping constantly busy
6. The friendly people within the office
7. The feeling of accomplishment when a job is completed
8. Being able to operate a sophisticated machine
9. Working without interruptions (22, p. 4).

The following comments show the most dissatisfying elements of the
magnetic typewriter operators, as reported by Casady:

1. The pressures
2. Repetitious work is boring
3. Being treated as a machine rather than as a person
4. Keeping time and work records--daily log sheets
5. Little chance for advancement
6. Slack periods when time is wasted
7. Pay is low
8. Little responsibility
9. Having to work overtime
10. Personality clashes within the office
11. Doing the same project over many times before the final form
12. No contact with those for whom the typing is being done
13. Secluded; don't meet others
14. Poor dictators slow down transcription (22, p. 4)

Morrison admonishes business educators in their ". . . roles as
leaders of young people [to] attempt to 'decelerate' this mechanized
movement" (93, p. 197). He expresses concern that secretaries might

find themselves in "'assembly line' office roles in a mechanized environment" (93, p. 196).

Morrison (93) feels that far too many managers are ignoring the human element in the operation of WP equipment in their quest to increase production. His concern is echoed by Hershey in the following statement:

> There appears to be some inconsistency in the argument that the correspondence secretary should be rather alert and intelligent while at the same time suggesting that the correspondence secretary will be motivated on a long-term basis by rather mechanistic, routine, and repetitive activities. How long can a manager expect an educated and alert person to continue as an operator of an automatic typewriter (63, p. 3)?

Several authors (43, 59, 65, 92, 94, 109, 112, 126) attest to the permanence of WP as well as to the necessity of including WP in programs of business education and offer suggestions for preliminary studies, challenges to existing courses, and recommendations for curricular changes.

Preliminary study suggestions are exemplified by Frame (43). His first suggestion is for an assessment of resources, including interested teaching personnel (willing to study WP, visit businesses, talk with equipment vendors, plan the physical facility, etc.), adequate facilities, and financial ability (perhaps over a two- or three-year period, and/or through grants). Secondly, Frame recommends a survey of the potential employment community to determine the types of equipment being used (if any), the extent to which WP (both partsWPC and AS) is being used, and the businesses which would cooperate in field trips or guest lectures. Capriotti (20) adds other needs of businessmen to be determined, including skills, knowledges, abilities and aptitudes of entry-level employees.

Challenges to existing courses are typified by Rosen (112) through seven questions:

1. Should our English courses continue to concentrate on works of literature at the expense of learning to spell, punctuate, and divide words?

2. Should our typing courses continue to stigmatize striking over errors as sinful, or can we introduce a new skill-building concept of typing at rough draft speeds that includes the backspace-strikeover method to simulate magnetic keyboarding?

3. Should our present office management courses give equal (or perhaps more) time to word processing concepts, instead of data processing concepts? Should they try to keep abreast and introduce students to new developments in word processing equipment, office landscaping and design, reprographics, and the exciting new developments that are unfolding in the field of micrographics, even though our present management textbooks omit these new areas?

4. Should our business communications courses include a unit on "How to Dictate" for potential word originators?

5. Should we take a realistic look at the whole question of shorthand training with a view to scaling down requirements if the community no longer requires this skill for entry-level jobs?

6. And what about our teacher training institutions setting up programs to train our future teachers to know and understand the concept of word processing (112, p. 17)?

Curricular suggestions range from no change at all (126) to changes in direction and emphasis in the present curriculum (109) to major upheavals in the present curriculum and inclusion of a myriad of additional courses in business and secretarial education (65, 93).

Included in the suggested courses to be implemented are Business Psychology, Business Interpersonal Dynamics, Business Decision-Making, Magnetic Keyboarding, WP Management, Reprographics, Office Design, and most frequently, WP Internship.

In a research study by Merton Powell, (107) designed to determine what, if any, changes should be made in the secretarial curriculum of business schools because of the advent of WP, the following curriculum suggestions were made:

> The administrative secretary's curriculum could emphasize oral skills needed to elicit and transmit information, including telephone techniques; written communication skills with emphasis on how to research information and on how to dictate as they compose items orally; good English grammar, proofreading and editing of drafts; and, finally, the traditional subject areas such as filing, mail handling, etc.

> The word processing center's curriculum could place emphasis on written communication skills, including proofreading, punctuation, good English grammar and spelling; typewriting and machine transcription. . . .

> Finally, toward the end of the specialized training, the program could culminate in a working situation where all the skills the students have learned can be put together in a working environment. This could be a simulation class, a cooperative training program, or another similar situation (107, p. 6).

Curriculum Model Design

Cruickshank (29) outlines four stages in developing a training program. In describing these steps, he says:

> During the needs stage, the training agency organizes for change and establishes needs and priorities . . . ; the design stage includes efforts to identify programmatic thrusts that hypothetically will reduce or eliminate the needs; in the development stage, the training agency seeks to build or adopt new training components and support subsystems; during the implementation stage, the new components and subsystems are instituted and tried out (29, p. 73).

A second model for developing a training program is a systems model by Friesen (44). His model contains the same four stages as Cruickshank's:

1. The needs stage--includes problem identification and classification; population description; entering behavior and subject analysis.

2. The design stage--includes determination of the levels of learning; methods of measurement; instructional objectives and measurement criteria.

3. The development stage--includes the development of teaching points; sequencing of instruction; methodology and media decisions.

4. The implementation stage--includes the validation of the program; implementation and evaluation (44, pp. 3-6).

The model used by Mager and Beach (87) has three stages:

1. The preparation phase--includes job description; target population; task analysis; course prerequisites; course objectives; prerequisite test and criterion examination.

2. The development phase--includes unit outlining; sequencing; content selection; procedures selection; sequence and lesson plan completion and course tryout.

3. The improvement phase--includes a comparison of performance with objectives; a comparison of objectives with the job and revision and tryout (87, p. 6).

Each of these models describes very similar processes for developing curriculum.

In 1972 the Dallas Independent School District Board of Trustees decided to provide a curriculum development unit to furnish the career education programs with needed materials. That committee established the following as necessary components of a curriculum:

1. Capable of addressing itself to the needs of all learners as a wide range and variety of appropriate activities and ways of assessing behaviors can be developed from the curriculum structure.

2. Constructed to account for teacher differences thus allowing for flexibility in the teaching-learning process by dictating only the understandings to be targeted for, not the teaching method or materials to be used.

3. Capable of interfacing with other subject areas by communicating the conceptual understandings involved rather than specific content appropriate only for that given subject area.

. . . .

6. Enabling flexibility of measurement to account for differences in learner abilities by using those factors involved in the understandings to assess student behavioral outcomes and not factors restricted to a specific test or situation.

7. Structured to teach thinking and not specific content by assessing the student's ability to apply his understandings to solve new problems (33, p. 1).

Summary

The review of literature shows that many articles have been published concerning WP. Business people have written about the history of WP and the coining, in 1965, of the term "word processing;" about the objectives of WP; about the possible configurations of a WP system and the necessity of altering configurations to suit individual needs; and about the management of WP. As shown, the management structure depends upon the configuration of the WP system. In a transitional WP system, where the only change has been that the secretaries have been given an electronic typewriter, management undergoes no change whatsoever. In a system which has centralized both the correspondence and administrative support functions under one management, however, the entire traditional secretarial organization undergoes change in location, structure, duties and responsibilities, and management.

Another topic about which business people have written is WP equipment and equipment capabilities. The equipment included in a WP system depends upon the type of system. The transitional system has only

a typewriter and possibly dictation equipment, whereas another system could contain such additional items as a photocopier, a computer, a high-speed printer, an offset press, and micrographic equipment.

The review of the literature revealed many educators' opinions of WP, too. A few educational institutions have initiated courses in WP and have described those courses in the literature. Some educators feel that no change is needed in educational programs due to the advent of WP. Other educators advocate varying degrees of change, from a verbal introduction to the concepts of WP to a complete program of courses in WP with a fully-equipped WPC for student use.

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CHAPTER III

METHODS OF PROCEDURE

Data for the study were collected mainly from two types of sources--post-secondary educational institutions (P-SI's) and business organizations having at least two magnetic media typewriters located in the same building for the same business organization. The research data were gathered during the months of May, June, July, and August, 1977.

P-SI Sample Selection

To obtain information from the primary United States P-SI's, three classifications were chosen--four-year educational institutions, junior and community colleges, and private business and secretarial schools. All of the P-SI's were located within the continental United States and offered a secretarial program.

Four-year educational institutions meeting the necessary criteria of location and program were listed in the "Directory of NABTE Member Colleges and Universities," published in the January, 1976 issue of the Business Education Forum. All 299 of those institutions, except the University of Hawaii and the University of Puerto Rico, were included in the study.

A listing of junior and community colleges meeting the criteria of location and program was obtained from The College Blue Book, from which a random sample of 300 was chosen using a table of random numbers.

The private business and secretarial schools included were randomly chosen from the Directory of Accredited Institutions, 1976-77, published by the Accrediting Commission of the Association of Independent Colleges and Schools. Listed in the Directory were 478 schools which qualified for inclusion, and 300 were chosen for the study using a table of random numbers.

Development of P-SI Data Collection Instruments

Once the list of 897 P-SI's was compiled, the data-gathering instruments were created. Two questionnaires and a rating sheet (with appropriate cover letters) were formulated for the P-SI's--a "Questionnaire for Educators" (see Appendix B), a Questionnaire for WP Instructors" (see Appendix E), and a "Rating Sheet for WP Instructors" (see Appendix F).

The First P-SI Questionnaire

The "Questionnaire for Educators," a preliminary survey instrument, was constructed to obtain the following information from each P-SI: 1) how many courses in WP were offered by the P-SI; 2) if no courses were offered, whether there were plans to institute such a course, and if so, when; 3) if courses were offered, when they began; 4) the departments offering the WP courses; 5) the course titles; 6) the number of credit hours granted for each course; 7) the name and title of the person to contact for additional information; and 8), if WP was incorporated into other courses, what courses?

An appropriate cover letter (see Appendix A), which stated the purpose of the questionnaire, was also constructed.

The Second P-SI Questionnaire
And Rating Sheet

A "Questionnaire for WP Instructors" and an accompanying "Rating Sheet for WP Instructors" were constructed next, to obtain information about each course offered by those P-SI's which had a program in WP. The questionnaire, with an appropriate cover letter (see Appendix D), was designed to obtain the following information about each course: 1) course title; 2) sequence of the course in the WP program; 3) course prerequisites; 4) the academic majors of students enrolled in the course; 5) whether or not students in the course participated in an internship, and if so, whether it was on or off campus and for how long; 6) teaching materials used in the course; 7) equipment used in the course--brand name, number of machines, and time or proficiency level required of the students; 8) whether the machine was being rented or purchased, was part of an internship, was located in or out of the classroom, and if out of the classroom, on or off campus; 9) the amount of laboratory time required outside of class. In addition to the information requested on the questionnaire, the cover letter asked if the instructor had received any special training or education prior to teaching WP.

The "Rating Sheet for WP Instructors" was constructed to gather information about the topics covered in each WP course and the emphasis placed on each topic. Merton E. Powell, who wrote a doctoral dissertation

entitled The Modern Automated WP System--Its Implications for Change in the Curriculum for Business and Office Education, granted permission to adapt his questionnaires to this study.* Segments of his questionnaires were adapted for use in the "Rating Sheet for WP Instructors" (and the corresponding "Rating Sheet for Business Personnel").

The "Rating Sheet for WP Instructors" contained forty-five possible topics to be covered in WP, divided into six categories--verbal communication skills, written communication skills, typewriting, miscellaneous secretarial skills, management abilities, and interpersonal relationships. Each item was to be rated on a scale from one to five, with the numerals having the following meanings:

1 = not included (in the course)
2 = minor emphasis
3 = moderate emphasis
4 = considerable emphasis
5 = major emphasis

Pilot Testing the P-SI Instruments

After the questionnaires and rating sheet were constructed, an instructor of WP at a post-secondary educational institution was visited and asked to complete the educators' questionnaires and rating sheet and to evaluate each item for clarity and content and the entire packet for completeness. The instruments were given to the instructor one at a time in the order in which they would be mailed to the P-SI educators.

The distinction between the terms automatic typewriter and text editor was unclear to the educator, so those items were noted for possible change, but no change was made at that time.

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*The degree was conferred by the University of Montana in 1975. Copies of the dissertation are available through American Doctoral Dissertations, Xerox University Microfilms, Ann Arbor, Michigan 48106.

Mailing and Return of the P-SI Instruments

The Educators' Questionnaire

The "Questionnaire for Educators" was mailed to 297 four-year P-SI's (termed universities), 300 junior and community colleges (termed colleges), and 300 private business and secretarial schools (termed schools), for a total of 897 questionnaires. Approximately four weeks later a second mailing of the questionnaire was made to non-respondents.

Seventy percent (632) of the P-SI's returned a questionnaire. Three percent of the returned questionnaires (three from universities, ten from colleges, and nine from schools) were unusable, mostly because the P-SI was no longer in existence. The total usable returns numbered 610, or 68 percent of the 897 P-SI's, and will henceforth be termed "total returns."

Table I shows the total number of returns and the percent of returns by institution type. As indicated, 82.2 percent of the universities

TABLE I

TOTAL RETURNS AND PERCENT OF RETURNS
OF QUESTIONNAIRE FOR EDUCATORS
BY INSTITUTION TYPE

Post-Secondary Institution Type	Number of Institutions Contacted	Number of Returns	Percent of Returns
University	297	244	82.2%
College	300	208	69.3
School	300	158	52.7
Total	897	610	68.2%

returned a usable questionnaire; 69.3 percent of the colleges responded
to the questionnaire; and 52.7 percent of the schools returned question-
naires. All combined, of the 897 P-SI's contacted, 610, or 68.0 percent
responded to the initial survey questionnaire.

Of those respondents 2.4 percent (15) indicated that that P-SI
offered a WP program as defined in this study (three or more independent
WP courses, each carrying at least two hours credit). The fifteen
P-SI's included nine universities, three colleges, and three schools.

One other respondent stated that three WP courses were listed in
the P-SI catalogue, but only one course had been taught. The other
courses were awaiting sufficient enrollment to warrant teaching. Another
respondent noted that courses in WP had been offered for several years,
but since no one enrolled for the courses, they had been dropped. And
yet another questionnaire return indicated that in the small town in
which that institution was located, there was no demand for WP, and a
community survey revealed no use of WP equipment.

The Questionnaire and Rating Sheet
For WP Instructors

Approximately six weeks after the second mailing of the "Question-
naire for Educators," those P-SI's having a program in WP were sent copies
of the "Questionnaire for WP Instructors" and the "Rating Sheet for WP
Instructors." Individual names had been furnished on the first question-
naire ("Questionnaire for Educators"), and those were the individuals at
each P-SI to whom the second questionnaires were mailed.

Three weeks were allowed for responses to the "Questionnaire for
WP Instructors." Non-respondents were then contacted by telephone to

elicit return of the information. Most of the individuals requested additional copies of the questionnaire, which were mailed, and fourteen of the fifteen (93 percent) responded, as shown in Table II.

TABLE II

TOTAL RETURNS AND PERCENT OF RETURNS
OF QUESTIONNAIRE FOR WP INSTRUCTORS
BY INSTITUTION TYPE

Post-Secondary Institution Type	Number of Institutions Contacted	Number of Returns	Percent of Returns
University	9	8	88.9%
College	3	3	100.0
School	3	3	100.0
Total	15	14	93.3%

Represented in the responses shown in Table II were eight universities, three colleges, and three schools. (One university did not respond.) Nineteen persons took part in the responses. Information supplied on the first questionnaire, "Questionnaire for Educators," indicated that the fourteen responding P-SI's offered a total of fifty-nine courses in WP. The returned copies of the "Questionnaire for WP Instructors" accounted for forty-five courses (76.3 percent of the total originally indicated).

Business Sample Selection

The businesses chosen for inclusion in this study consisted of thirty-six organizations located in the Dallas-Fort Worth metroplex.

Each of the organizations used at least two magnetic typewriters at the location of the interview.

A membership list of an International Word Processing Association chapter was used to locate some of the businesses. Names of other companies having a WP system were obtained from interviewees. Other interview locations were obtained by telephoning companies listed in the telephone directories.

In each instance the person in charge of WP at that business was contacted by telephone to obtain permission to conduct the interview and to arrange a convenient time for the interview. Each person was told the purpose of the interview and given an approximate interview length.

Development of the Business Data Collection Instruments

An "Interview Schedule" and a "Rating Sheet for Business Personnel" were developed for use in gathering data from business personnel. The Interview Schedule was designed to obtain the following information: 1) the title of the person in charge of WP; 2) the type of company using WP equipment, according to type of product or service and number of employees; 3) the type of WP system utilized; 4) the extent to which AS and private secretaries were utilized; 5) the minimum education or training required for an entry-level position; 6) the pretests and hiring standards for an entry-level position; 7) training practices employed; 8) available career paths; 9) the age of the WPC; 10) work measurement practices; 11) equipment used.

The "Rating Sheet for Business Personnel" corresponded to the "Rating Sheet for WP Instructors." Only the directions were changed.

Persons completing the rating sheets were asked to rate the knowledges, skills, and attributes needed for an entry-level position.

Pilot Testing the Business Instruments

To evaluate the "Interview Schedule" and "Rating Sheet for Business Personnel," a preliminary interview was conducted with a past-president of a large city chapter of the International Word Processing Association, who is also a WPC Supervisor. The interviewee was asked to give constructive criticism on all phases of the interview--wording of the questions, thoroughness of the questions, clarity of the interview questions and of the rating sheet, and construction of the rating sheet items.

As a result of the interview, the wording of several items on the Interview Schedule was changed to clarify meaning. For example, the term "logging" had to be clarified, since to some people in WP it means to keep a record of all work coming into a WPC, and to others it means to keep a record of the work the WP operators turn out. The term "weighting" had to be clarified, also, since the verbal term could be interpreted "weighting" or "waiting."

One change was made on the rating sheet as a result of the interview. Prior to the interview the Rating Sheet requested information about automatic typewriter operation and text editor operation as separate items. The two were combined because many people use the terms interchangeably. (These were the same items questioned during the pilot-test of the "Rating Sheet for Educators.")

Conducting the Interviews and Return
of the Rating Sheets

Thirty-six business organizations were included in the study. Three of the organizations had two WPC's, and interviews were conducted in each, for a total of thirty-nine locations. The length of the interviews ranged from approximately twenty minutes to two hours. Most of the interviews were tape recorded, and a few were summarized in shorthand. All of the information from the interviews was compiled at the same time (rather than after each interview) to provide more consistent interpretation.

At the conclusion of each interview, the "Rating Sheet for Business Personnel" was either completed by those requested or copies of the rating sheet were left with the interviewee to be completed and returned by mail. Where positions existed, (even though titles varied) rating sheets were completed by the WP manager, the WPC supervisor, a WPC operator and an AS secretary.

The rating sheet requested information concerning job requirements for entry-level positions. Managers and supervisors were asked to do two ratings--one for an operator's entry-level position and one for an entry-level of their own position. Thirty-eight of the interview locations completed rating sheets.

A breakdown of the companies interviewed is given in Table III, which shows the type of product or service rendered and the number of companies interviewed in each category. The table shows that insurance companies had the greatest representation in the sample, followed in rank order by financial institutions, manufacturing firms, legal firms,

TABLE III

TYPE OF COMPANY AND NUMBER OF INTERVIEWS
CONDUCTED IN EACH TYPE

Type of Company	Number of Firms Interviewed
Insurance	8
Financial	7
Manufacturing	6
Legal	5
Government	3
Non-Profit	2
Petroleum	2
Engineering	1
Hospital	1
Utilities	1

government agencies, non-profit organizations and petroleum companies,

and engineering firms, hospitals, and utilities.

Figure 4 shows the percent of the sample each company type

represented. Insurance companies accounted for 22 percent of the
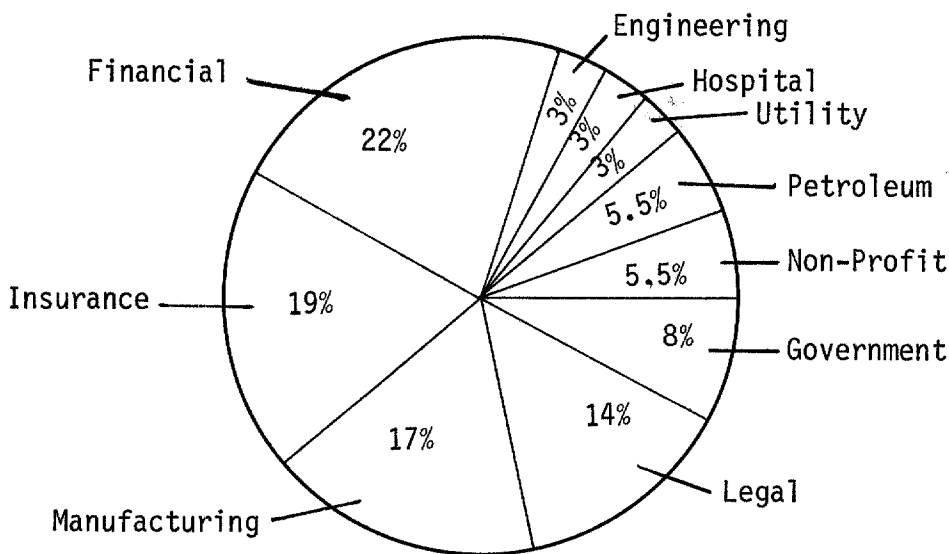
Fig. 4--Percent of sample represented by each company type

total, financial institutions for 19 percent, manufacturing firms for 17 percent, and legal organizations for 14 percent. Government agencies represented 8 percent of the sample, non-profit organizations and petroleum companies 5.5 percent each, and engineering firms, hospitals, and utilities 3 percent each.

Organization size varied greatly among the business firms, ranging from less than 50 employees to more than 1000 at the interview location. Table IV shows the number of employees in each company. Two companies had less than 50 employees; five companies had from 50 to 99 employees; six employed from 100 to 199 persons; three stated an employment figure between 200 and 299; six ranged from 300 to 399; two employed from 400 to 499 persons; seven had from 500 to 999 employees; and five indicated a personnel figure between 1000 and 2000.

TABLE IV

NUMBER OF COMPANIES INTERVIEWED
PER NUMBER OF EMPLOYEES

Number of Employees	Number of Companies
1 - 49	2
50 - 99	5
100 - 199	6
200 - 299	3
300 - 399	6
400 - 499	2
500 - 999	7
1000 - 2000	5

These figures represented the number of employees who were physically located in the building which housed the WPC or interviewee. Several companies had many more employees at other locations or "in the

field." Considering only the one location, the average number of employees was 488.

Table V shows the average number of employees in each type of company. Manufacturing firms had the highest average number of employees, with 922, and engineering firms show the lowest average number of employees, with 50. From highest to lowest, the rank order for all of the company types is as follows: manufacturing, utilities, financial, petroleum, hospitals, insurance, non-profit, government, legal and engineering.

TABLE V

AVERAGE NUMBER OF EMPLOYEES
IN EACH COMPANY TYPE

Type of Company	Average Number of Employees
Engineering	50
Financial	771
Government	138
Hospital	450
Insurance	344
Legal	90
Manufacturing	922
Non-Profit	183
Petroleum	643
Utilities	800

Statistical Procedures

The rating sheets completed by business personnel and educators represented responses from the following seven groups: WPC managers, WPC supervisors, correspondence secretaries, administrative support

secretaries, educators from universities, educators from colleges, and educators from schools.

Nineteen sets of comparisons were made among the groups. For each set, a computer-tabulated Kruskal-Wallis one-way analysis of variance was run for each of the forty-five items on the questionnaire. A 95 percent confidence level was used to determine those items which were significantly different. Some of the respondents did not respond to all forty-five items on the rating sheet. In such instances, the computer scored the missing responses as "missing" and tabulated the remaining scores on their own merit without respect to the "no responses."

Table VI shows the number of respondents in each of the seven groups. The table also shows the percent that number represents of the total respondents. As shown in the table, equipment operators formed the largest group and represented 27.8 percent of the total,

TABLE VI

NUMBER AND PERCENT OF RATING
SHEET RESPONDENTS

Respondent Type	Number of Respondents	Percent of Respondents
Administrative Secretaries	14	13.0%
College Educators	9	8.3
Correspondence Secretaries	30	27.8
Managers	12	11.1
School Educators	12	11.1
WPC Supervisors	7	6.5
University Educators	24	22.2
Total	108	100.0%

followed in descending order by equipment educators, administrative support secretaries, WPC managers and school educators, college educators, and WPC supervisors.

Combining all of the education groups in the table results in a total of forty-five respondents, or 41.7 percent of the total. Likewise, combining the business group yields sixty-three respondents, or 58.3 percent of the total.

Summary

Data for the study were collected from post-secondary educational institutions and from business organizations having at least two magnetic media typewriters located in the same building for the same business organization. A list of 897 P-SI's was compiled for a preliminary survey of four-year educational institutions, junior and community colleges, and private business and secretarial schools. Of the questionnaires mailed, 68.2 percent were returned. An important part of the information gained from the initial survey questionnaire was whether the P-SI had a WP program as defined in this study. Those P-SI's which had a WP program were mailed a second questionnaire and a rating sheet, designed to obtain information about each course offered in the WP program. Ninety-three percent of the P-SI's responded to the second questionnaire and rating sheet.

The businesses chosen consisted of thirty-six organizations located in the Dallas-Fort Worth metroplex and included the following types of businesses: engineering, financial, government, hospital insurance,

legal, manufacturing, non-profit, petroleum, and utilities. The companies ranged from less than 50 employees to more than 1000.

A total of thirty-nine interviews were conducted. The interviews were tape recorded or taken in shorthand and later compiled. A rating sheet which corresponded with the one mailed to the P-SI's was given to WP supervisors, WP managers, equipment operators, and AS secretaries. The rating sheets completed by the educators and the business personnel were compared by a Kruskal-Wallis one-way analysis of variance.

CHAPTER IV

FINDINGS

Research findings were compiled from four sources: 1) the Questionnaire for Educators; 2) the Questionnaire for Word Processing Instructors; 3) the interviews; 4) the comparison of the Rating Sheet for Word Processing Instructors and the Rating Sheet for Business Personnel.

The Questionnaire for Educators: Findings

The questionnaire returns yielded much information, including 1) how many courses in WP were offered by each institution type; 2) of those P-SI's in which no WP courses were offered, how many planned to institute such a course and when; 3) in institutions which offered a course(s), when the course(s) began; 4) the department(s) which offered WP; 5) actual course titles; 6) the number of credit hours granted for each course; and 7) the courses in which WP was taught as a segment.

Course offerings.--Table VII shows the number and percent of institution types offering from zero to three or more courses in WP. The 244 university responses represented 40 percent of the total (610) returns from all sources. Of those universities, 75.8 percent offered no courses in WP; 14.8 percent offered one course in WP; 5.7 percent offered two courses in WP, or more than two but not meeting the criteria of two or more credit hours granted per course; and 3.7 percent of the universities had a WP program.

TABLE VII

NUMBER AND PERCENT OF RETURNS BY INSTITUTION TYPE
AND BY NUMBER OF COURSES OFFERED

Number of WP Courses Offered	Universities*		Colleges**		Schools***		Returns per Course	
	Number of Returns	Percent of University Returns	Number of Returns	Percent of College Returns	Number of Returns	Percent of School Returns	Total	Percent of Grand Total
0	185	75.8%	146	70.2%	119	75.3%	450	73.8%
1	36	14.8	45	21.6	28	17.7	109	17.9
2	14	5.7	14	6.7	8	5.1	36	5.9
3 or more	9	3.7	3	1.5	3	1.9	15	2.4
Institution Total	244	100.0%	208	100.0%	158	100.0%	610	
Grand Total								100.0%
Institution percent of Grand Total	40.0%		34.1%		25.9%		100.0%	

*Four-year P-SI
**Junior and community college
***Private business and secretarial school

Colleges represented 34.1 percent of all returned questionnaires,
with 208 replies. Of those replies, 70.2 percent indicated that no
courses in WP were offered; 21.6 percent indicated that one course
was offered in WP; 6.7 percent offered two courses, or more than two
but not meeting the criteria necessary to be a program in WP; and
1.5 percent of the colleges had a program in WP.

The same breakdown for schools is given in Table VII showing total
school returns to equal 25.9 percent (158) of the grand total. Of the
questionnaires returned by schools, 75.3 percent offered no courses in
WP; 17.7 percent offered only one course; and 1.9 percent of the schools
had programs in WP.

In addition Table VII indicates that 73.8 percent of all P-SI's
responding to the initial questionnaire offered no independent courses
in WP. P-SI's offering one course in WP represented 17.9 percent of the
grand total. Those offering two or more courses but not meeting the
criteria for a WP program constituted 5.9 percent of the returns, and
2.4 percent offered a program in WP.

P-SI's Offering No Courses in WP: Findings

Number of P-SI's who planned to initiate a WP course.--Several of
the 450 P-SI's which offered no courses in WP at the time of the ques-
tionnaire indicated that they were planning to offer at least one course
in WP sometime in the future. Table VIII shows the number of univer-
sities, colleges, and schools which had plans to institute at least one
course in WP, the number of P-SI's which had no such plans, those which
were undecided, and those which made no indication either way.

As Table VIII indicates, 23.4 percent of the universities (57) indicated plans for teaching at least one course in WP at some later date, 3.7 percent were undecided, and 3.3 percent made no indication. Universities with no plans to teach WP as an independent course numbered 111, which represented 45 percent of all university returns.

TABLE VIII

P-SI PLANS TO INITIATE COURSES
IN WORD PROCESSING

Institution Type	Yes	No	Undecided	Not Indicated	Total
University	57	111	9	8	185
College	46	89	6	5	146
School	35	66	11	7	119
Total	138	266	26	20	..

Colleges and schools showed similar results, with 22 percent of the colleges and 22.8 percent of the schools planning to begin at least one course in WP; 2.9 percent of the colleges and 7 percent of the schools undecided; and 2.4 percent of the colleges and 4.4 percent of the schools making no indication. The remaining 89 colleges (43 percent of the total college returns) and 66 schools (42 percent of the total school returns) expressed no intentions of teaching a separate WP course.

Date P-SI's planned to initiate a separate WP course.--The next item on the questionnaire asked when these 138 P-SI's were planning to offer a separate WP course. Table IX shows that twenty-five of the

courses were scheduled to begin fall semester, 1977; a majority, sixty-six, of the courses were to be inaugurated sometime in 1978; four were

TABLE IX

PROPOSED BEGINNING DATE FOR NEW COURSES

Institution Type	Fall Semester 1977	1978	1979	Undecided	Total
University	8	27	4	18	57
College	6	25	..	15	46
School	11	14	..	10	35
Total	25	66	4	43	..

scheduled to start in 1979; and forty-three were undecided about a beginning date. (Several noted, "As soon as funds are available.")

WP incorporation with other courses.--The final question asked of those respondents whose institutions offered no separate course in WP was whether WP was incorporated into (an)other course(s) and if "yes," which course(s). Table X shows that 151 universities, 107 colleges and 62 schools indicated that WP concepts were being taught as part of (an)other course(s). (See also Table XVIII, page 125 for a summary of the courses into which WP was incorporated.) Ninety-two of the P-SI's offering no separate courses in WP also did not teach WP as a part of another course. Therefore, 15.1 percent (92) of the total P-SI's (610) gave students little or no exposure to WP. Thirty-eight of the

TABLE X

INCORPORATION OF WP CONCEPTS WITH OTHER
COURSES IN INSTITUTIONS OFFERING
NO INDEPENDENT WP COURSES

Institution	Incorporation of WP Concepts		
Type	Yes	No	Not Indicated
University	151	26	8
College	107	33	6
School	62	33	24
Total	320	92	38

institutions did not indicate whether WP was incorporated into (an)other course(s).

P-SI's Offering One Course in WP: Findings

The next group of returns analyzed were those which indicated that only one course in WP was offered. There were two items to tabulate in that group: 1) When was the separate WP course begun; and 2) Was WP taught in (an)other course(s) as well, and if so, which course(s).

Date separate WP course began.--Table XI shows a steady increase in the number of institutions starting WP courses since 1970, and according to Table XVIII, page 125, continued growth can be anticipated. As seen in Table XI only one university course was started prior to 1973; thirteen were begun between 1973-1975; eight were initiated in 1976; and twelve were inaugurated spring or summer of 1977. Table XI shows that

eight more courses were expected to begin fall, 1977, bringing the total
1977 figure to twenty, with at least twenty-six additional courses
planned for 1978.

TABLE XI

DATE COURSE BEGAN IN INSTITUTIONS
OFFERING ONE WP COURSE

Institution Type	Date WP Course Began					
	Prior to 1970	1970 to 1972	1973 to 1975	1976	1977	Not Indicated
University	..	1	13	8	12	2
College	..	6	15	8	12	4
School	2	3	8	3	5	7

Colleges and schools show a similar increase, with six college
courses and five school courses beginning prior to 1972, increasing
to twelve college courses and five school courses beginning spring
or summer, 1977. An additional six college courses and eleven school
courses were expected to begin fall, 1977, as shown in Table XI.

WP incorporation with other courses.--Table XII shows, for P-SI's
which offered one separate WP course, the number of universities,
colleges, and schools which incorporated WP concepts with other courses,
the number of P-SI's which did not incorporate WP into other courses,
and the number of institutions which did not indicate either way. As
shown, twenty-three universities, twenty-five colleges, and nineteen
schools were, in addition to teaching a separate WP course, incorporating

TABLE XII

INCORPORATION OF WP CONCEPTS WITH OTHER
COURSES IN INSTITUTIONS OFFERING
ONE INDEPENDENT WP COURSE

Institution Type	Incorporation of WP Concepts		
	Yes	No	Not Indicated
University	23	13	..
College	25	17	3
School	19	9	..

WP concepts into other courses. Thirteen universities, seventeen colleges, and nine schools were teaching WP concepts as a separate course only. Three P-SI's did not indicate either way.

The courses into which WP was incorporated are shown in Table XVIII, page 125, which also shows a summary of the number of institutions incorporating WP concepts into other courses.

P-SI's Offering Two WP Courses: Findings

The next group of questionnaire returns were from those P-SI's which indicated two courses offered in WP. Grouped with these returns were institutions which offered three or more courses but which did not carry at least two hours credit per course. The university group had fourteen such instances, the college group had fourteen, and the school group numbered eight.

Date WP courses began.--Table XIII shows that of the aggregate groups, nineteen P-SI's had begun their first course in WP by 1975,

and nine were already offering two courses. The following year, 1976,
showed a significant increase, with eleven additional institutions
beginning their first course, and eleven adding a second. In 1977, three

TABLE XIII

DATE COURSE BEGAN IN INSTITUTIONS
OFFERING TWO WP COURSES

Institution Type	Date WP Courses Began					
	Prior to 1970	1970 to 1972	1973 to 1975	1976	1977	Not Indicated
First Course						
University	1	1	5	5	2	..
College	2	2	5	2	1	2
School	..	2	1	4	..	1
Total	3	5	11	11	3	3
Second Course						
University	..	..	2	5	5	2
College	1	..	3	3	3	4
School	..	..	3	3	..	2
Total	1	..	8	11	8	8

P-SI's began their first WP course, and eight added a second course. In
addition Table IX, page 115, indicates that twenty-five "first courses"
were scheduled to begin fall, 1977.

WP incorporated with other courses.--The final information obtained
from those institutions offering two courses in WP was whether, in
addition to those two separate courses, WP was taught as a part of

(an)other course(s). Table XIV indicates that twelve universities, six colleges, and eight schools incorporated WP concepts into other courses.

TABLE XIV

INCORPORATION OF WP CONCEPTS WITH OTHER
COURSES IN INSTITUTIONS OFFERING
TWO INDEPENDENT WP COURSES

Institution Type	Incorporation of WP Concepts		
	Yes	No	Not Indicated
University	12	2	..
College	6	7	1
School	8	..	..

Two universities and seven colleges indicated no incorporation, and one college made no indication. Table XVIII, page 125, shows the courses in which WP was taught as a subtopic.

P-SI's Having a WP Course: Findings

Of the 610 respondents to the "Questionnaire for Educators," a total of fifteen, or 2.4 percent, indicated that that P-SI offered a WP program as defined in this study (three or more independent WP courses, each carrying at least two hours credit). The fifteen P-SI's included nine universities, three colleges, and three schools.

Number of courses offered in WP programs.--Table XV shows the type and number of P-SI's which had from three to nine courses in the WP program. One school offered nine courses in WP; one college offered

eight courses; one school offered six courses; three universities offered

five courses and two offered four courses; and the remainder (seven

TABLE XV

TYPE AND NUMBER OF P-SI'S OFFERING
FROM THREE TO NINE WP COURSES

Type of Institution	Number of Courses Offered						
	3	4	5	6	7	8	9
University	4	2	3	..	..	..	..
College	2	..	..	..	..	1	..
School	1	..	..	1	..	..	1

P-SI's) had three courses in their WP program. With only one exception,

all fifteen of these P-SI's were located within a 125-mile radius of at

least one major city.

Date WP courses began.--The fifteen WP programs were begun at

various times, with the first courses beginning between 1969 and 1977.

Table XVI shows the beginning dates for the first, second, and third

courses offered in the WP programs. Both the first and second courses

in one program were initiated in 1969, and the program was in operation

by 1970. Another school initiated all three of its courses in 1977,

creating a program as defined in this study. A steady increase in the

number of programs can be seen between the first one in 1970 and the

most recent one in 1977. By 1975 a second program was in operation, and

six more were begun by 1976. Six additional WP programs were operative

by 1977 bringing the total to fifteen.

In addition to the fifteen operative WP programs noted in Table XVI, several new courses were scheduled to begin fall semester 1977 (as shown

TABLE XVI

DATE FIRST THREE WP COURSES BEGAN IN
INSTITUTIONS OFFERING A PROGRAM
IN WORD PROCESSING

Institution Type	Date Courses Began					
	1969	1970 to 1972	1973 to 1975	1976	1977	Not Indicated
First Course						
University	..	1	3	3	..	2
College	..	1	..	1	..	1
School	1	1	..	..	1	..
Total	1	3	3	4	1	3
Second Course						
University	..	..	2	5	1	1
College	..	..	2	..	1	..
School	1	..	..	1	1	..
Total	1	..	4	6	3	1
Third Course						
University	..	..	..	5	3	1
College	..	..	1	1	1	..
School	..	1	..	..	2	..
Total	..	1	1	6	6	1

in Table IX, page 115). In a few instances the addition of that one course would create a WP program as defined in this study and bring the 1977 total figure to more than the fifteen indicated in Table XVI.

WP incorporation with other courses.--The number of P-SI's offering a program in WP and still incorporating WP into other courses is shown in Table XVII. Six universities, two colleges, and one school were teaching WP in other courses in addition to teaching independent WP

TABLE XVII

INCORPORATION OF WP CONCEPTS WITH
OTHER COURSES IN INSTITUTIONS
OFFERING A WP PROGRAM

Institution Type	Incorporation of WP Concepts		
	Yes	No	Not Indicated
University	6	1	2
College	2	1	..
School	1	2	..

courses; one university, one college, and two schools were not teaching WP in other courses; and two universities made no indication. These results are also listed in Table XVIII along with a breakdown of the courses in which WP was taught as a segment.

WP as a Segment of Other Courses

Table XVIII is divided into four groups: P-SI's offering no independent courses in WP, one independent course, two independent courses,

and three or more independent courses. The four groups are subdivided by type of institution. Examination of the table shows office practice to be the course in which WP was most frequently taught as a segment. That group included responses variously titled Office/Secretarial Practice/Procedures. Of the 610 P-SI's from which questionnaires were returned, 42 percent taught WP as part of office practice. In descending order, those courses listed as incorporating WP were Typewriting (26 percent), Business Communications and Office Machines (both 18 percent), Shorthand (13 percent), and Teaching Methods and Management (both 10 percent).

The final category on the questionnaire was a space for "other" courses in which WP was taught. Although some of the institutions listed more than one course, approximately 15 percent gave at least one additional course title. The most frequently given title was "Transcription," with most of the others being some kind of secretarial course--Executive Secretary, Medical Secretary, Secretarial Administration. Some of the infrequently given titles included Data Processing, Key Punch, Model Office, Internship, Office Appliances, Reprographics, CPS Review, Filing, Accounting, and English and Vocabulary. When indicated, the management courses including WP as a segment were Office Management, Filing and Records Management, and Introduction to Business.

Examination by category (zero, one, two, and three or more courses offered) of the order of the courses which most frequently incorporated WP concepts shows that the only significant deviation from the above-listed order (Office Practice, Typewriting, Business Communications and

TABLE XVIII

COURSES WHICH INCORPORATED WP CONCEPTS AND
A SUMMARY OF INCORPORATION
BY INSTITUTION TYPE

Course Title and Summary of No. Incorporating	No Courses			One Course			Two Courses			Three or More Courses			Total
	U*	C*	S*	U	C	S	U	C	S	U	C	S	
Courses													
Business Communications	47	26	18	6	7	3	1	..	2	2	..	1	113
Management	33	9	3	5	2	..	6	..	1	..	..	..	59
Office Machines	41	32	15	4	6	5	3	2	2	2	..	..	112
Office Practice	92	77	40	8	12	8	10	3	5	2	1	..	258
Shorthand	22	25	15	4	5	5	2	..	2	1	..	..	81
Teaching Methods	44	2	3	7	..	..	6	..	..	1	..	..	63
Typewriting	44	45	26	6	14	8	4	2	3	2	1	1	156
Summary													
Yes	151	107	62	23	25	19	12	6	8	6	2	1	422
No	26	33	33	13	17	9	2	7	..	1	1	2	144
Not Indicated	8	6	24	..	3	..	..	1	..	2	..	..	44

*U, University; C, College; S, School.

Office Machines, Shorthand, and Teaching Methods and Management), was in

"Management." Except for Management, the rank order of course titles

was the same for the four categories independently as for the categories

collectively. Overall, Management was the least frequent title, ranking

number seven in rank order. In the individual categories, however, in

the group of "Two Courses Offered," it was number three in rank order.

In the "Three or More Courses" group, no P-SI's indicated an incorpo-

ration in management; but, one-third of them offered WP Management as a

separate course.

The "Summary" section of Table XVIII shows the number of P-SI's

which incorporated WP with other courses, grouped by institution type

and number of WP courses offered. Collectively, 69 percent of the P-SI's

combined WP with other courses; 24 percent did not; and 7 percent made

no indication.

The Questionnaire for WP Instructors: Findings

The questionnaires returned from the fourteen P-SI's contained

information in the following areas: 1) course titles; 2) prerequisites;

3) internship programs; 4) student majors; 5) teaching materials;

6) equipment; 7) special training or education of instructors.

Represented in the responses were eight universities, three

colleges, and three schools. Nineteen persons from those P-SI's

took part in the responses.

Information supplied on the first questionnaire, "Questionnaire

for Educators," indicated that the fourteen responding P-SI's offered

a total of fifty-nine courses in WP. The returned copies of the "Questionnaire for WP Instructors" accounted for fifty-three courses, or 89.8 percent of the original total.

Course Titles

The returns showed almost as many course titles as courses offered. Duplication did appear in titles such as Word Processing, Word Processing Concepts, Transcription, Magnetic Media (usually specifying a specific machine), and Word Processing Management. A few of the other titles were Power Typing, Reprographics, Automatic Typing, Office Procedures, Memory Typing, and Electronics. There was no consistency, by title, for sequencing the courses. Some P-SI's taught the equipment first and the elements of a WP system later; others taught elements first and specialized areas later.

Prerequisites

Both typing and English composition were required in many instances before entering the WP program. Several of the P-SI's sequenced their courses such that each level required successful completion of the prior course(s). Others, however, did not sequence their courses at all; and in a couple of instances, co-registration with another course was required. Additional prerequisites mentioned included Introduction to Business Data Processing, keyboarding skills, Business Communications, senior class standing, and Shorthand.

Student Majors

The majors of students enrolled in the WP courses varied with the institution type. Table XIX shows that the schools had only secretarial and WP majors enrolled in the courses. A majority of the students enrolled in the WP courses in the colleges were secretarial majors, with others majoring in communications, management, and business teacher

TABLE XIX

MAJORS OF STUDENTS ENROLLED IN WP COURSES

Student Majors	Number of P-SI's		
	University	College	School
Administrative Services	1	..	..
Business Teacher Education	8	1	..
Business Technology	1	..	..
Communications	1	2	..
Information Systems	1	..	..
Management	5	2	..
Office Administration	1	..	..
Secretarial	8	3	3
Shorthand	1	..	..
Word Processing	1	..	1

education. Of the university courses, business teacher education majors were mentioned as frequently as secretarial majors, with management majors ranking next. Majors mentioned only once by the universities included communications, business technology, shorthand, WP, office administration, administrative services, and information systems.

Internship Programs

Some of the P-SI's included an internship with every course, and others included an internship in various courses throughout the program. None of the P-SI's indicated having a complete course entitled or devoted to an "Internship." Table XX shows the number of P-SI's which offered at least one internship and the number of courses which included an

TABLE XX

UTILIZATION OF INTERNSHIPS

Internship Length		Internship Location±		Number of Courses With an Internship	Number of P-SI's With an Internship
Hours Per Day	Number of Weeks	On	Off		
University					
3*	10		X		
4*#	10		X		
3	14	X	X	8	4
NI+	14		X		
2	10	X			
**					
College					
2#	10	X		4	2
3	10	X			
School					
4#	6		X	3	1

±On- or Off-Campus
*Internship optional
#More than one course has these same requirements
+Not Indicated
**40 hrs. work = 1 classroom credit; 80 hrs. work = 2 classroom credits; etc.

internship. Of the eight universities, four indicated having at least one internship. Of the twenty-eight courses offered by the universities, four included an internship, four had an optional internship, and twenty

contained no internship. The typical internship length was 3.3 hours per day for 11.3 weeks. Five of the programs were conducted off-campus, one was on-campus, and one was both off- and on-campus. An additional set-up mentioned by one respondent, was an internship program whereby the number of classroom credit hours depended upon the number of hours worked: forty hours of work in the program merited one credit; eighty hours earned two credits; etc. So a student would work 160 hours on a job to attain four hours of classroom credit.

Of the three colleges responding to the survey, two offered an internship program. Four of the courses offered contained an internship, and five did not. The average length of a program was two hours per day for nine weeks, and all of the programs were conducted on-campus.

Only one of the three schools had an internship program, and it was offered in three courses. No hours per day were indicated, but the internship lasted from four to six weeks and was conducted off-campus.

Teaching Materials

No consistency existed in the textbook(s) used for specific courses, and few texts were used. Most of the teaching materials used were vendor products (usually the operating manual for a specific machine) or teacher-constructed materials.

Equipment

Type of equipment used and proficiency level required.--A wide variety of equipment brands was used by the P-SI's. No attempt was made to classify by brand name but rather by equipment type. The universities

reported using non-magnetic typewriters, magnetic typewriters, and dictation-transcription equipment extensively, and composers, offset and mimeograph equipment, and CRT media occasionally. Four of the eight universities required a mastery of the mag-media typewriters at the end of the WP program. One required an intermediate operations ability, and three required an acquaintance with the equipment. It was almost unanimous that dictation-transcription equipment be mastered by the end of the program. In the single instance where utilized, the composer, memory, and offset equipment was to be mastered by the end of the WP program. Five of the university courses utilized no equipment.

The three colleges did not indicate using any non-magnetic typewriters, but did use magnetic typewriters, dictation-transcription equipment, and in one instance a photocopier and a common-language high-speed printer. One of the colleges required a mastery-level knowledge of the mag-media typewriters, one required an intermediate-level knowledge, and the third did not indicate the proficiency level required upon completion of the WP program. A mastery level was required for use of dictation-transcription equipment. A photocopier and a high-speed printer was used by one college, and a mastery-level was required. One college course was noted as having no equipment.

The three schools indicated the use of mag-media typewriters, dictation-transcription equipment, and in one instance a keypunch. Each piece of mag-media equipment was taught as an independent course, and mastery was expected. All dictation-transcription equipment was

generally combined in a single course and mastery of each piece of equipment expected. One course had no equipment noted.

Acquisition of equipment.--Almost all of the courses required machine practice outside of class time, and approximately two-thirds was in an open-access laboratory, with an assistant on duty at least part-time. The returned questionnaires indicated that all of the dictation-transcription equipment had been purchased by the P-SI's and was located in the classroom. Twice as much mag-media equipment was purchased as was rented. That which was purchased was located in the classroom, while that which was rented was located on-campus, outside the classroom.

Special Training or Education Received by WP Instructors

Each respondent was asked whether he or she received any special training or education in WP before actually teaching the course or courses in WP. Of the university respondents, two made no indication, three indicated no special preparation, and six noted some preparation. Three of the six who received some preparation received only vendor training on the equipment (usually a two-day orientation). One individual attended a one-week vendor seminar on supervision of the WPC, and another individual attended a Data Pro Seminar on WP. The remaining individual received vendor training on two pieces of equipment, attended three WP conventions, and took a course taught by the authors of a WP textbook.

Of the college respondents, one made no indication of training, two indicated vendor equipment training only, and one respondent indicated

vendor training, attendance at WP society seminars and Expo's, attendance in a class taught by the authors of a WP textbook, and eight weeks of on-the-job training during a summer, working on the equipment later used in the classroom.

Four individuals accounted for the responses from the three schools. One person made no indication concerning previous training, one had no training, one indicated vendor equipment training only, and one indicated vendor equipment training plus experience in operating several WPC's in area businesses.

The Interviews: Findings

Compilation of the taped and summarized interviews revealed a variety of information about actual business practices.

Title of Interviewees

The first question on the "Interview Schedule" was the title or position of the interviewee. Although each had the responsibility for the WPC or magnetic equipment operation, several titles were found. Exact titles varied greatly, but the general categories are shown in Table XXI along with the number of persons having that title and the company types in which the title was found. Of the thirty-nine inter-twelve were managers, two were manager-supervisors, seventeen were supervisors, one was a coordinator, one a legal technician, one a vice president, and five were secretaries. Nine of the managers and supervisors listed in Table XXI had an assistant who helped with the daily operation of the system, relieving the superior of such things as

TABLE XXI

POSITION TITLE OF INTERVIEWEES

Position Title	Number of Persons With Title	Type of Company With Title*
Coordinator	1	6
Legal Technician	1	3
Manager	12	2, 5, 6, 7, 8
Supervisor	17	2, 3, 4, 5 7, 9, 10
Manager/Supervisor	2	5, 8
Secretary	5	1, 4, 7, 9
Vice President	1	2

* 1, engineering; 2, financial; 3, government;
 4, hospital; 5, insurance; 6, legal; 7, manufacturing;
 8, non-profit; 9, petroleum; 10, utilities

logging in documents, determining routine priorities, answering the telephone, and answering minor machine operation questions.

Type of WP System

The type of WP system found in each type of company is shown in Table XXII. The Centralized system was the most common, with twenty-four incidents reported. (See page 16 for a definition of each type of WP system.) Each company type shows at least one centralized system, with two exceptions--hospitals and engineering firms. The only decentralized system reported was in a hospital; the only satellite system reported was in an insurance firm. Five transitional systems were

reported, two by manufacturing firms, two by legal organizations, and one by an engineering firm. Five mixed systems were also reported,

TABLE XXII

NUMBER OF FIRMS USING VARIOUS WP SYSTEMS
BY COMPANY TYPE

Type of Company	Type of WP System				
	Centralized	Decentralized	Satellite	Transitional	Mixed
Engineering	..	..	..	1	..
Financial	4	..	..	..	3
Government	3	..	..	..	..
Hospital	..	1	..	..	..
Insurance	7	..	1	..	..
Legal	2	..	..	2	1
Manufacturing	3	..	..	2	1
Non-Profit	2	..	..	..	..
Petroleum	2	..	..	..	..
Utilities	1	..	..	..	..
Total	24	1	1	5	5

three by financial organizations, one by a legal organization, and one by a manufacturing firm.

Average Number of WP System Employees

Correspondence secretaries.--Of the companies which had one or more WPC's, the average number of employees was six per center. Of those companies whose secretaries had WP equipment, but the company did not maintain a WPC, an average of eight secretaries per company had a mag-media typewriter.

Administrative support secretaries --In the thirty-six companies

the average number of AS secretaries was twenty-six, all of whom had

non-mag-media typewriters. Only two companies reported a clustered

AS system. Three AS secretaries reported to an administrative super-

visor, and the remainder reported to the principal served.

Private secretaries.--An average of eight private secretaries

(one-to-one relationship) per company was reported in addition to

the employees in the WPC and the AS secretaries. Those employees

having a private secretary ranged from "anyone, according to need,"

to "only the president." However, the majority reported that only

upper level management personnel had private secretaries.

Whereas ten companies reported having no AS secretaries, no

company was without at least one private secretary. Six of the persons

with private secretaries could not or did not use the WPC in addition to

their private secretary. Eight of the private secretaries could not

input information to the WPC. But in one instance, instead of inputing

information to the WPC, the private secretary could use the equipment in

the center.

Educational Requirements

When asked about minimum education requirements for a correspondence

secretary, nine interviewees stated that there was no minimum, as shown

in Table XXIII. One interviewee wanted a high school graduate with six

months' experience, one wanted a college junior, and the remainder

(twenty-five) said that high school or its equivalent was minimum. When

asked if additional education or training on magnetic equipment would
make a difference in one's starting pay or classification, fifteen

TABLE XXIII

MINIMUM EDUCATION REQUIREMENTS FOR
A CORRESPONDENCE SECRETARY

Minimum Education	Number of Companies
No minimum	9
High school diploma plus six months on-job training	1
College junior standing	1
High school diploma or equivalent	25

interviewees answered with an unqualified, "No." The remaining twenty-
one interviewees said that if the skill level was commensurate with the
education, the salary or classification or both would be higher.

Testing and Training Practices

Testing.--Another area of inquiry during the interviews was the
pretesting and hiring standards of each company. Table XXIV shows a break-
down of the type of testing required by the companies. As indicated ten
companies required no testing. Two of those ten had a minimum typing speed
requirement (one fifty and one sixty words per minute) but took the word
of the individual instead of testing.

Twelve interviewees reported that a typing test only was adminis-
tered. Speed requirements ranged from fifty to eighty, with the most
frequently required speed being fifty words per minute. Ten of those
typing tests were standard, traditional tests, but two companies were
using the back-space strike-over technique in their typing tests to
simulate the use of WP equipment. One of those two companies was admin-
istering both types of tests.

The remaining fourteen companies were testing, in addition to typing, such language skills as grammar, spelling, proofreading,

TABLE XXIV

PRE-EMPLOYMENT TESTS ADMINISTERED

Type of Testing	Number of Companies
None	10
Typing only	12
Typing plus others	24

terminology, vocabulary, and punctuation. In addition, some were testing skills such as math, filing, reasoning, consistency, shorthand, and transcription.

Training.--The training of employees fell into two categories--that given to machine operators and that given to word originators. Machine operators were trained in-house, by vendors, or through a combination of both methods. Fourteen interviewees stated that in-house training was used exclusively, with the training time ranging from one day to three weeks of extensive instruction and up to six months of "additional" training.

Five interviewees trained in-house sometimes and utilized vendor training sometimes. Seventeen interviewees utilized vendor training exclusively, with training time again ranging from one day to two weeks.

Eighteen persons stated that an acquaintanceship level of equipment operation was generally gained in one week of training; seven stated a shorter time period; eleven stated a longer time period, ranging up to six weeks. To acquire a proficiency level of operation, twenty-three persons felt that from three to six months' training was required.

Fourteen companies indicated having some kind of in-house originator orientation to WP or training in the use of dictation equipment, or both. Most of the programs consisted of a brief introduction to WP or to dictation equipment; however, three firms indicated an in-depth, continued program of training and updating in the art of dictation as well as in the operation of dictation equipment.

Most of the training programs (both operator and originator) were conducted by the person in charge of the WP system. However, in one instance the job was handled by the Training Department, which handled all of the training programs for the organization. In addition, several companies indicated having had vendor equipment orientation and a vendor seminar in communications and the art of dictation.

Career Paths

Another phase of the interviews dealt with available career paths for the WP secretaries. In all but one instance, the AS secretaries had no career path within the AS area. Their only promotion possibility was to an executive or private secretary position. In the one exception, each employee began in the WPC and spent from three months to one and one-half years there before being "promoted" into the AS area. Five levels or steps were available in the AS area, with the highest level being that of a "Private Secretary" position.

Table XXV shows the number of companies in each company type which had from one to seven steps in the equipment operators' career path. The average number of career steps for each type of company is shown also.

Seven of the WPC's had only one position with no promotion possible within the center, although one company would promote an individual out of the center to other duties. Seven locations had two levels within

the WPC--an operator and a supervisory level. Two of those seven locations did promote operators out of the WPC.

TABLE XXV

NUMBER AND AVERAGE NUMBER OF STEPS IN
CAREER PATH IN EACH COMPANY TYPE

Type of Company	Number of Steps							Average Number of Steps in Career Path
	1	2	3	4	5	6	7	
Engineering	1	..	..	..	..	..	..	1
Financial	1	1	2	3	..	..	..	3
Government	..	..	1	2	..	..	..	3.6
Hospital	1	..	1	..	..	..	..	2
Insurance	1	1	1	1	4	1	..	4
Legal	3	2	..	..	..	..	..	1.4
Manufacturing	1	..	2	1	2	..	..	3.5
Non-Profit	..	..	1	..	..	..	1	5
Petroleum	..	2	..	..	..	..	..	2
Utilities	..	1	..	..	..	..	..	2
Weighted Average								2.75

Eight companies reported three career steps within the WPC. After an individual reached "supervisor" or "manager," three of those eight companies would promote that person to duties outside the WPC. Seven companies reported having four career steps within the WPC; six companies noted five career steps; one company had six career steps; one company had seven steps.

The weighted average of Table XXV shows that about three levels of advancement (by classification) were provided by the businesses.

WPC Age

The average age of the WPC's was four years, with four centers being six months old or less, one being ten years old, and three being

eight years old. Table XXVI shows the average center age by type of company. Manufacturing firms, according to the data, have had WPC's the

TABLE XXVI

WORD PROCESSING CENTER AGES AND AVERAGE AGE
BY TYPE OF COMPANY

Company Type	Number of Years in Operation											Average WPC Age
	0-1/2	1	2	3	4	5	6	7	8	9	10	
Engineering	..	..	..	..	..	..	..	..	..	..	..	*
Financial	..	..	2	..	3	..	..	..	1	..	..	4
Government	..	..	..	1	..	2	..	..	..	..	..	4.5
Hospital	1	..	..	..	1	..	..	..	..	..	..	2
Insurance	..	1	2	1	1	1	..	..	2	..	..	4
Legal	2	..	..	..	1	..	..	..	..	..	..	2
Manufacturing	..	..	..	..	..	..	2	1	..	..	1	7
Non-Profit	..	1	1	..	..	..	..	..	..	..	..	2.5
Petroleum	..	..	1	..	..	..	..	1	..	..	..	5
Utilities	1	..	..	..	..	..	..	..	..	..	..	0-1/2

*No WPC reported--traditional system.

longest period of time, with the oldest WPC being ten years of age. Two insurance firms and one financial institution had centers which were eight years of age. The two most common WPC ages were two and four years, with six companies having centers of each age. The youngest WPC'S were less than six months of age.

As an industry average, manufacturing firms have had WPC's the longest--seven years--followed by the petroleum industry, government agencies, insurance and financial organizations, non-profit organizations, legal firms and hospitals, and utilities. It should be noted that some of the organizations , particularly legal firms, have been using magnetic typewriters for several years in a traditional-type secretary-principal relationship.

Work Measurement

Table XXVII shows the type of work measurement utilized by the companies. Nineteen interviewees indicated that a line count was kept of each operator's work, and a majority of the operators were expected to keep their own line count. In a few instances, however, the supervisor or manager kept the line count and the operators were not aware of its being kept. As indicated in Table XXVII, three interviewees reported a page count measurement; two reported keeping time cards per job; one

TABLE XXVII

WORK MEASUREMENT UTILIZED

Type of Measurement	Number of Companies
Line count	19
Page count	3
Time cards per job	2
Number of reports	1
Stroke count	2
No measurement	12

kept track of the number of reports transcribed only; two indicated a stroke count (tabulated by computer); and twelve said that no work measurement records were maintained. Most indicated that the work measurement was simply for use in the charge-back system or for justification of equipment and personnel, with only three interviewees indicating that the work measurement was used for operator performance evaluation. None of the companies paid their operators on a performance-based system.

In fourteen instances, when work measurement was computed, some form of weighting was applied, according to the type of work, recognizing

that some typing problems are more difficult to do than others. In some
instances, a distinction was drawn between hard copy and machine dictated
material, with each line of typing done from hard copy receiving one
and one-half lines of credit and each line typed from machine dictation
receiving one line of credit.

In most cases, however, the major distinction was between ordinary
prose, statistical or tabulated material, and replay typing. Ordinary
prose in whatever form--letter, memorandum, report, etc.--was generally
credited as one line of typing for each line actually typed; although in
one instance, manuscripts were given one and one-half times the credit
of other prose typing.

Statistical and tabulated material was given from one and one-
half to three times as much credit as ordinary prose; so for each line
of typing, from one and one-half to three lines of credit was granted.

In some companies replay typing was given only one-half credit.
Measurement was occassionally broken down so that only the lines of
actual replay was given one-half credit, and original typing in the
same document was given full credit. In other companies any document
containing mostly replay was given one-half credit for the whole document.

Other weighting practices included giving five lines of credit for
each element change required, crediting according to whose error--typist
or originator--caused a revision, and, according to one interviewee,
". . . by item, which is broken down by quarter-pages, which equates to
unit credits, which equates out to people."

Equipment

The final area of investigation during the verbal segment of the interviews concerned the type of equipment used.

Dictation equipment.--Table XXVIII shows the type of dictation system utilized by the various industries. The "In-House Centralized" system was the most frequently used system, with twenty-five companies having such a system. The term "In-House Centralized" means that the dictation input device (generally a telephone) is located in the building and that the material to be transcribed is received at the point of transcription.

Desk-top units were the next most frequently used dictation device, with sixteen companies maintaining such equipment. Desk-top units sit on the dictator's desk, and the recording media (tape, belt, disk, etc.) are physically taken to the transcription location.

Eleven of the firms had an out-of-house centralized system at the time of interview, and several indicated intentions of installing such a system. As with in-house centralized systems, material to be recorded via an out-of-house centralized system is transmitted electronically to the point of transcription. Dictation can originate, however, from any compatible telephone, in or out of the building.

Only four companies indicated any usage of portable dictation units, and nine indicated the use of hard copy from which to transcribe. It is interesting to note that five of those nine had no other type of input--hard copy was the only medium for transcription. Another company,

however, would not accept <u>any</u> hard copy materials; such were flatly refused. In defense of that position the interviewee stated that other systems were readily available to originators, and transcription from the other systems was much more efficient.

TABLE XXVIII

DICTATION SYSTEMS

Type of Company	In-House Centralized	Out-of-House Centralized	Desk Top	Portable	Hard Copy
Engineering	..	..	1	..	1
Financial	6	2	2	1	2
Government	2	1	1	..	1
Hospital	2	1	1	1	..
Insurance	8	4	2	..	1
Legal	1	..	5	1	1
Manufacturing	3	1	2	1	1
Non-Profit	2	2	1	..	..
Petroleum	1	..	1	..	1
Utilities	..	..	..	..	1
Total	25	11	16	4	9

As indicated by the table, most of the companies used more than one type of dictation system to input materials to the WPC.

<u>Transcription equipment</u>.--Table XXIX indicates the types of transcription equipment used in the industries. The two most numerous pieces of equipment were IBM's Mag II, with 97 units reported in use, and the Xerox 800, with 95 units reported in use. As shown in the table, twenty-seven Mag I's, twenty Mag A's, fifteen Memory typewriters, eight

TABLE XXIX

TRANSCRIPTION EQUIPMENT

Type of Company	I B M Mag — Exec	I B M Mag — I	I B M Mag — II	I B M Mag — A	I B M Mem-ory	I B M Com-poser	CMC	66/40 Printer	Electric Type-writer	Xerox 800	Xerox Communi-cating	High Speed Printer	Miscellaneous
Engineering	..	1	3	..	..	..	..	..	..	..	..	..	..
Financial	..	..	13	5	..	1	..	3	1	17	2	..	..
Government	1	6	8	3	..	..	1	..	..	2	..	..	1 Teletype
Hospital	..	..	..	..	2	..	..	..	2	..	..	2	4 Lanier CRT WPr
Insurance	..	5	11	2	9	1	..	..	6	23	..	..	8 MT/ST 6 Lexitron 5 Redactron
Legal	..	15	50	10	4	..	..	3	..	17	..	1	1 System 6 WPr 4 Sabin base plates with 2 consoles
Manufacturing	6	..	10	..	..	..	..	..	..	12	..	1	6 Sperry-Remington 1 Wang WPr 30 with 3 CRT screens & 1 CPU
Non-Profit	..	..	..	..	..	..	5	..	..	15	..	..	..
Petroleum	..	..	2	..	..	..	..	..	..	5	..	..	1 CPT 1 A B Dick
Utilities	..	..	..	..	..	..	..	..	..	4	..	..	..

MT/ST's, six 66/40 Printers, and six CMC's were being used by the thirty-
six companies; all IBM products. The "Miscellaneous" column indicates
less frequently mentioned equipment and includes nineteen electronic
typewriters--six Lexitron, five Redactron, six Sperry-Remington, one
CPT, and one A B Dick--two composers, nine electric typewriters, seven
Mag Exec's, one teletype, and six word processors--four Lanier, one IBM
System 6, and one Wang.

Comparison of the Rating Sheets

The rating sheets completed by business personnel and educators
represented responses from the following seven groups: WPC managers,
WPC supervisors, correspondence secretaries, administrative support
secretaries, educators from universities, educators from colleges, and
educators from schools.

Nineteen sets of comparisons were made among the groups. In
reporting the results of the Kruskal-Wallis comparisons, those items
which showed a significant difference are listed as they appeared on the
rating sheets, which are displayed in Appendices F and H. Tables XXXII
through L, which show the results of the Kruskal-Wallis one-way analysis
of variance for each set of comparisons, are presented in Appendix I.

Education Cross-Comparisons

The three types of P-SI's--universities, colleges, schools--were
compared by use of the Kruskal-Wallis one-way analysis of variance to
find differences in the various WP programs. Three sets of comparisons
were tabulated.

Comparison one: universities/colleges.--For an indication of the
differences in WP courses taught by the universities and colleges, the
rating sheets from each were compared. The statistical results of the
comparisons are shown in Appendix I, Table XXXII. Fifteen of the forty-
five items (33.3 percent) showed a significant difference. Those items
were as follows:

Written Communication Skills
     5. Composition of letters
     7. Ability to edit (Prepare written work for typing or
          printing)
Typewriting
    12. Speed typing
    13. Numerical (statistical; tabulated) typing
Miscellaneous Skills
    18. Logging information (record keeping--card files,
          mailing lists, indexes, etc.)
    19. Skill in setting priorities in work
    20. Skill in management of time
    21. Use of adding machines/calculators
    23. Shorthand, receiving dictation
    24. Shorthand transcription
    26. Mail handling (opening, sorting, distribution)
Knowledge About or Understanding of:
    31. Automated data processing
Development of Attitudes Toward:
    37. Cooperativeness in working with others
    40. Getting work out on time
    43. Accepting criticism gracefully

In all instances the college results showed a higher mean rank than
the university results, indicating a higher rating on the Likert rating
scale.

Comparison two: universities/schools.--For an indication of the
differences in WP courses taught by the universities and schools, the
rating sheets from each were compared. The results of the comparisons
are shown in Appendix I, Table XXXIII. Four of the forty-five items

(8.8 percent) showed a significant difference. Those items were as
follows:

       Written Communication Skills
              5. Composition of letters
       Typewriting
              13. Numerical (statistical; tabulated) typing
       Development of Attitudes Toward:
              39. Loyalty towards employer
              42. Confidentiality in the office

In all instances the results showed a higher mean rank for school

courses than for university courses.

Comparison three: colleges/schools.--A comparison of the rating

sheets completed for college and school courses showed seven (15.5 per-

cent) significant differences as follows:

       Miscellaneous Skills
              18. Logging information (record keeping--card files,
                   mailing lists, indexes, etc.)
              19. Skill in setting priorities in work
              20. Skill in management of time
              26. Mail handling (opening, sorting, distribution)
       Development of Attitudes Toward:
              37. Cooperativeness in working with others
              40. Getting work out on time
              43. Accepting criticism gracefully

In all instances the results showed a higher mean rank for

college courses than for school courses. Appendix I, Table XXXIV,

shows the statistical results of the Kruskal-Wallis comparisons for

these groups.

Business Personnel Cross-Comparisons

To determine the differences between the business positions can-

vassed and to determine that the positions were unique, having unique

skills and knowledges, cross-comparisons of the groups were made.

Comparison one: managers/supervisors.--The manager and the WPC

supervisor each had, in different companies, the responsibility of

operating the WPC. In other companies, the supervisor was an assistant

to the manager. To determine whether they performed essentially the

same tasks, a comparison was made of the responses of the two groups.

Table XXXV in Appendix I presents the results of the comparisons of the

groups. Those results revealed nine items (20.0 percent) which showed a

significant difference in the responses of the two groups. Those items

were as follows:

> Verbal Communication Skills
>   2. Ability to dictate correspondence
> Written Communication Skills
>   7. Ability to edit (Prepare written work for typing or
>   printing)
>   8. Use of proper written grammar
> Typewriting
>   *15. Executive typewriter (use of proportional spacing)
> Miscellaneous Skills
>   16. Ability to schedule appointments
> Knowledge About or Understanding of:
>   32. Office management
>   33. Personnel management
>   34. Business organization and management
>   36. Bookkeeping/Accounting: Knowledge of accounting and
>   principles of budgeting, etc.

As indicated by the asterisk, for only one item did supervisors

receive a higher mean rank than managers. The remaining eight signi-

ficantly different items were shown to have received a higher mean

rank, or a higher rating on the Likert rating scale, by the managers.

Comparison two: supervisors/operators.--As indicated in comparison

number one above, some of the supervisors interviewed had charge of the

operation of the WPC. Some organized and controlled the WPC only, while

others were "working supervisors" and operated the equipment much of the time in addition to their supervisory duties. Table XXXVI in Appendix I presents the results of the Kruskal-Wallis comparisons of the supervisors' and operators' rating sheets, which revealed nineteen (42.2 percent) significantly different items. Those items were as follows:

Verbal Communication Skills
    1. Telephone techniques
    3. Oral communicating (giving or taking instructions, asking questions)
    4. Use of proper oral grammar
Miscellaneous Skills
    16. Ability to schedule appointments
    18. Logging information (record keeping--card files, mailing lists, indexes, etc.)
    19. Skill in setting priorities in work
    20. Skill in management of time
    21. Use of adding machines/calculators
    26. Mail handling (opening, sorting, distribution)
Knowledge About or Understanding of:
    27. Systems analysis
    28. Flow of work (flow charting, etc.)
    29. Scheduling of work (projects, etc.)
    30. Research techniques (information gathering)
    32. Office management
    33. Personnel management
    34. Business organization and management
    35. Bookkeeping/Accounting: Ability to keep a set of books
Development of Attitudes Toward:
    37. Cooperativeness in working with others
    38. Willingness to do more than expected

In all nineteen instances the supervisors' ratings resulted in a higher mean rank than did the operators' ratings.

Comparison three: correspondence secretaries/administrative support.--One of the assumptions of the WP system is that the duties of the traditional secretary are split (and expanded) between a correspondence secretary (WP equipment operator) and an administrative secretary (AS). To determine whether these positions are actually unique,

with different skills and knowledges needed for both, the rating sheets of each were submitted to the Kruskal-Wallis one-way analysis of variance. The comparison results of the forty-five items are shown in Table XXXVII, Appendix I. Eighteen items (40.0 percent) showed a significant difference by comparison. Those items were as follows:

Verbal Communication Skills
    1. Telephone techniques
    2. Ability to dictate correspondence
Written Communication Skills
    5. Composition of letters
Typewriting
    *10. Automatic typewriter/text editor operation
Miscellaneous Skills
    16. Ability to schedule appointments
    17. Filing
    21. Use of adding machines/calculators
    23. Shorthand, receiving dictation
    24. Shorthand transcription
    25. Use of copiers/duplicating equipment
    26. Mail handling (opening, sorting, distribution)
Knowledge About or Understanding of:
    30. Research techniques (information gathering)
    32. Office management
    33. Personnel management
    34. Business organization and management
    35. Bookkeeping/Accounting: Ability to keep a set of books
    36. Bookkeeping/Accounting: Knowledge of accounting and principles of budgeting, etc.
Development of Attitudes Toward:
    *41. Working under pressure

As shown by the asterisks, two items were scored by the groups such that the operators' results received a higher mean rank than the administrative support's results.

Education/Business Comparisons

In completing the rating sheets, educators were asked to indicate the amount of emphasis they placed on each item in teaching a specific course; and one rating sheet was completed for each WP course taught.

The business personnel were asked to indicate the training needed for an entry-level position. For an indication of whether these business requirements were being met by educators, twelve comparisons were made. Each business position--manager, supervisor, operator, AS--was compared with each P-SI type--university, college, school.

Comparison one: universities/managers.--University educators' and WPC managers' rating sheet results were compared for an indication of how well the emphasis placed on items in university courses correlated with the importance placed on the items by WPC managers. The managers were rating their own job at an entry level. Table XXXVIII, Appendix I, shows the results of the forty-five comparisons between the two groups. Twenty-nine items (64.4 percent) showed a significant difference between the responses. Those items were as follows:

Verbal Communication Skills
    1. Telephone techniques
    3. Oral communicating (giving or taking instructions, asking questions)
    4. Use of proper oral grammar
Written Communication Skills
    5. Composition of letters
    7. Ability to edit (Prepare written work for typing or printing)
    8. Use of proper written grammar
Typewriting
    * 9. Standard electric typewriter operation
  *14. Correction of errors (erasing or using correction tape or liquid, etc.)
Miscellaneous Skills
    16. Ability to schedule appointments
    18. Logging information (record keeping--card files, mailing lists, indexes, etc.)
    19. Skill in setting priorities in work
    20. Skill in management of time
    21. Use of adding machines/calculators
Knowledge About or Understanding of:
    28. Flow of work (flow charting, etc.)
    29. Scheduling of work (projects, etc.)

30. Research techniques (information gathering)
32. Office management
33. Personnel management
34. Business organization and management
36. Bookkeeping/Accounting: Knowledge of accounting and principles of budgeting, etc.

Development of Attitudes Toward:
37. Cooperativeness in working with others
38. Willingness to do more than expected
39. Loyalty towards employer
40. Getting work out on time
41. Working under pressure
42. Confidentiality in the office
43. Accepting criticism gracefully
44. Having a good sense of humor
45. Working with interruptions

The asterisks indicate the two instances in which university responses showed a higher mean rank than the WPC managers responses. For the remaining twenty-five significantly different items, the WPC managers' responses had a higher mean rank than the university educators' responses.

Comparison two: universities/supervisors.--The university educators' responses to the amount of emphasis being placed on the rating sheet items in the courses taught were compared with the WPC supervisors' responses to the amount of importance placed on the items for an Entry-level WPC supervisor's position. The following fifteen items (representing 33.3 percent) showed a significant difference according to the Kruskal-Wallis comparisons:

Verbal Communication Skills
1. Telephone techniques
3. Oral communicating (giving or taking instructions, asking questions)
4. Use of proper oral grammar

Miscellaneous Skills
18. Logging information (record keeping--card files, mailing lists, indexes, etc.)

    19. Skill in setting priorities in work
    20. Skill in management of time
Development of Attitudes Toward:
    37. Cooperativeness in working with others
    38. Willingness to do more than expected
    39. Loyalty towards employer
    40. Getting work out on time
    41. Working under pressure
    42. Confidentiality in the office
    43. Accepting criticism gracefully
    44. Having a good sense of humor
    45. Working with interruptions

In all instances the WPC supervisors' ratings resulted in a higher

mean rank than did the university educators' ratings. Table XXXIX in

Appendix I shows the results of the Kruskal-Wallis one-way analysis of

variance for all forty-five items.

Comparison three: universities/operators.--To obtain an indication

of how well the university courses prepared an operator for an entry-

level position, the responses of the two groups were compared. Table IL

in Appendix I shows the results of the Kruskal-Wallis comparisons of the

university educators' and the correspondence secretaries' (operators)

responses. The following fourteen items (31.1 percent) showed a signi-

ficant difference between the responses:

Verbal Communication Skills
    2. Ability to dictate correspondence
Typewriting
   *12. Speed in typing
    14. Correction of errors (erasing or using correction tape
         or liquid, etc.)
Miscellaneous Skills
    16. Ability to schedule appointments
Knowledge About or Understanding of:
    27. Systems analysis
    28. Flow of work (flow charting, etc.)
    29. Scheduling of work (projects, etc.)
    30. Research techniques (information gathering)

Development of Attitudes Toward:
    *39. Loyalty towards employer
    *40. Getting work out on time
    *41. Working under pressure
    *42. Confidentiality in the office
    *43. Accepting criticism gracefully
    *44. Having a good sense of humor

The mean ranking was evenly split between the two groups, with each receiving the highest mean rank on seven items. The asterisks indicate the seven items on which the operators' ratings were the higher.

Comparison four: universities/administrative support.--Appendix I, Table ILI, presents the results of the forty-five comparisons of the two groups. As indicated in the table, eight items (17.7 percent) showed a significant difference in the comparison of university educator rating sheets and AS personnel rating sheets. Those items were as follows:

Verbal Communication Skills
    1. Telephone techniques
Miscellaneous Skills
    21. Use of adding machines/calculators
    23. Shorthand, receiving dictation
    24. Shorthand transcription
    26. Mail handling (opening, sorting, distribution)
Knowledge About or Understanding of:
    34. Business organization and management
    36. Bookkeeping/Accounting: Knowledge of accounting and principles of budgeting, etc.
Development of Attitudes Toward:
    37. Cooperativeness in working with others

In all instances, the AS secretaries' responses received a higher mean rank than did the university educators' responses, indicating that the AS ratings were higher on the Likert scale.

Comparison five: colleges/managers.--The first of four college/-business comparisons was between the college educators' responses and

The WPC managers' responses. Eight (17.7 percent) significantly dif-
ferent items were evidenced by the Kruskal-Wallis one-way analysis of
variance, as evidenced in Table ILII, Appendix I. Those items included

Typewriting
    12. Speed in typing
    13. Numerical (statistical; tabulated) typing
    15. Executive typewriter (use of proportional spacing)
Miscellaneous Skills
    23. Shorthand, receiving dictation
    24. Shorthand transcription
Knowledge About or Understanding of:
    *29. Scheduling of work (projects, etc.)
    *33. Personnel management
Development of Attitudes Toward:
    *42. Confidentiality in the office.

As shown by the asterisks, the ratings by managers resulted in a
higher mean rank on three items. The remaining five items were col-
lectively scored higher by the college educators.

Comparison six: colleges/supervisors.--College educators' and WPC
supervisors' rating sheet results were compared for an indication of how
well the emphasis placed on items in college courses correlated with the
amount of training WPC supervisors felt necessary for an entry-level
supervisory postion. Appendix I, Table ILIII, shows the results of the
Kruskal-Wallis comparisons. Three items (6.6 percent) exhibited a
significant difference by comparison:

Written Communication Skills
    7. Ability to edit (Prepare written work for typing or
        printing)
Miscellaneous Skills
    24. Shorthand transcription
Knowledge About or Understanding of:
    31. Automated data processing

In all three instances, the results showed college scores receiving
a higher mean rank than supervisor scores.

Comparison seven: Colleges/operators.--The WPC equipment operator, or correspondence secretary, is usually the focal point in WP. The equipment operator is frequently seen as the individual with sophisticated equipment, a new location, and new skills to master. The comparison results of college educator responses to WP equipment operator responses are shown in Appendix I, Table ILIV. According to the Kruskal-Wallis comparisons, twenty-one items (46.6 percent) showed a significant difference. Those items were as follows:

Verbal Communication Skills
      2. Ability to dictate correspondence
Written Communication Skills
      5. Composition of letters
      7. Ability to edit (Prepare written work for typing or printing)
Typewriting
      13. Numerical (statistical; tabulated) typing
Miscellaneous Skills
      16. Ability to schedule appointments
      18. Logging information (record keeping--card files, mailing lists, indexes, etc.)
      19. Skill in setting priorities in work
      20. Skill in management of time
      21. Use of adding machines/calculators
      23. Shorthand, receiving dictation
      24. Shorthand transcription
      26. Mail handling (opening, sorting, distribution)
Knowledge About or Understanding of:
      27. Systems analysis
      28. Flow of work (flow charting, etc.)
      29. Scheduling of work (projects, etc.)
      30. Research techniques (information gathering)
      31. Automated data processing
      33. Personnel management
      34. Business organization and management
      35. Bookkeeping/Accounting: Ability to keep a set of books
      36. Bookkeeping/Accounting: Knowledge of accounting and principles of budgeting, etc.

In all twenty-one instances the college ratings resulted in a higher mean rank than did the operator ratings.

Comparison eight: colleges/administrative support.--The job of the administrative secretary is frequently viewed as that of a traditional secretary without a typewriter and those associated duties. For an indication of how well college programs were meeting the needs of entry-level administrative secretaries, the Kruskal-Wallis was applied to the rating sheets of the two groups. The results of the forty-five comparisons are shown in Table ILV in Appendix I. Nine items (20.0 percent) were significantly different, including

Written Communication Skills

    7. Ability to edit (Prepare written work for typing or printing)

Typewriting

    10. Automatic typewriter/text editor operation
    13. Numerical (statistical; tabulated) typing

Miscellaneous Skills

    18. Logging information (record keeping--card files, mailing lists, indexes, etc.)
    20. Skill in management of time

Knowledge About or Understanding of:

    27. Systems analysis
    31. Automated data processing

Development of Attitudes Toward:

    40. Getting work out on time
    43. Accepting criticism gracefully.

In all instances colleges again scored the higher mean ranks. Four college/business comparisons have been reported above; and in three of the comparisons, colleges scored the highest mean ranks in all instances.

Comparison nine: schools/managers.--The first of the four school/business comparisons was made between the responses of the school educators and the WPC managers. The statistical results of the comparisons are shown in Appendix I, Table ILVI. Twenty-one significantly different items (46.6 percent) appeared. Those items included

Verbal Communication Skills
      1. Telephone techniques
      3. Oral communicating (giving or taking instructions, asking questions)
      4. Use of proper oral grammar
Typewriting
    *13. Numerical (statistical; tabulated) typing
    *14. Correction of errors (erasing or using correction tape or liquid, etc.)
Miscellaneous Skills
    16. Ability to schedule appointments
    18. Logging information (record keeping--card files, mailing lists, indexes, etc.)
    19. Skill in setting priorities in work
    20. Skill in management of time
Knowledge About or Understanding of:
    28. Flow of work (flow charting, etc.)
    29. Scheduling of work (projects, etc.)
    30. Research techniques (information gathering)
    33. Personnel management
    34. Business organization and management
    36. Bookkeeping/Accounting: Knowledge of accounting and principles of budgeting, etc.
Development of Attitudes Toward:
    37. Cooperativeness in working with others
    38. Willingness to do more than expected
    40. Getting work out on time
    41. Working under pressure
    43. Accepting criticism gracefully
    45. Working with interruptions

As shown by the asterisks, two of the items were scored higher by the schools; nineteen items were rated higher by the managers.

Comparison ten: schools/supervisors.--Thirteen significant differences (28.8 percent) were revealed by the comparison of schools and supervisors. Those items were as follows:

Verbal Communication Skills
      1. Telephone techniques
      3. Oral communicating (giving or taking instructions, asking questions)
      4. Use of proper oral grammar
Typewriting
    *14. Correction of errors (erasing or using correction tape or liquid, etc.)

Miscellaneous Skills
    18. Logging information (record keeping--card files,
         mailing lists, indexes, etc.)
    19. Skill in setting priorities in work
    20. Skill in management of time
Development of Attitudes Toward:
    37. Cooperativeness in working with others
    38. Willingness to do more than expected
    40. Getting work out on time
    41. Working under pressure
    43. Accepting criticism gracefully
    45. Working with interruptions

As shown by the asterisk, one item only was rated higher by the

schools than by the supervisors. The statistical data for the forty-

five comparisons between these two groups are presented in Appendix I,

Table ILVII.

Comparison eleven: schools/operators.--The school educators rated

each item according to the amount of emphasis placed on the skill or

knowledge in the WP courses taught. The WP equipment operators, or

correspondence secretaries, rated the same items according to the amount

of training needed to enter an equipment operator's position. Appendix I,

Table ILVIII, presents the results of the Kruskal-Wallis comparisons of

the rating sheet responses, which revealed ten (22.2 percent) signifi-

different items, as follows:

Verbal Communication Skills
    2. Ability to dictate correspondence
 *3. Oral communicating (giving or taking instructions,
      asking questions)
Written Communication Skills
    5. Composition of letters
    7. Ability to edit (Prepare written work for typing or
      printing)
Typewriting
    13. Numerical (statistical; tabulated) typing
    14. Correction of errors (erasing or using correction tape
       or liquid, etc.)

Knowledge About or Understanding of:
    29. Scheduling of work (projects, etc.)
    30. Research techniques (information gathering)
Development of Attitudes Toward:
    *37. Cooperativeness in working with others
    *43. Accepting criticism gracefully

As indicated by the asterisks, three items were rated such that the mean ranks of the operators' scores were higher values than those of the school educators' scores.

Comparison twelve: schools/administrative support.--The final school/business comparison was between the school educators and the administrative support secretaries. This comparison showed the fewest significant differences of the four school/business comparisons. The statistical data for the Kruskal-Wallis one-way analysis of variance are presented in Table ILIX, Appendix I. Eight items (17.7 percent) were revealed as having significant differences in the scores of the two groups. Those items were as follows:

Verbal Communication Skills
    1. Telephone techniques
    3. Oral communicating (giving or taking instructions, asking questions)
Typewriting
    *10. Automatic typewriter/text editor operation
    *13. Numerical (statistical; tabulated) typing
Miscellaneous Skills
    17. Filing
    26. Mail handling (opening, sorting, distribution)
Knowledge About or Understanding of:
    34. Business organization and management
Development of Attitudes Toward:
    37. Cooperativeness in working with others

The asterisks show that two of the eight significantly different items had a higher mean ranking by the school educators than by the administrative support secretaries.

Overall Comparison: All Education/All Business

One final, overall comparison was made by putting all of the educators' responses together, combining all of the business personnel responses, and comparing the two groups. The overall comparison revealed seventeen significantly different items (representing 37.7 percent) out of the forty-five total items on the rating sheets. The statistical data for the forty-five Kruskal-Wallis comparisons are presented in Appendix I, Table L. The significantly different items were

Verbal Communication Skills
  1. Telephone techniques
 *2. Ability to dictate correspondence
  3. Oral communicating (giving or taking instructions, asking questions)
  4. Use of proper oral grammar
Typewriting
 *14. Correction of errors (erasing or using correction tape or liquid, etc.)
Miscellaneous Skills
 *24. Shorthand transcription
Knowledge About or Understanding of:
 *27. Systems analysis
 *28. Flow of work (flow charting, etc.)
 *31. Automated data processing
Development of Attitudes Toward:
  37. Cooperativeness in working with others
  38. Willingness to do more than expected
  39. Loyalty towards employer
  40. Getting work out on time
  41. Working under pressure
  42. Confidentiality in the office
  43. Accepting criticism gracefully
  45. Working with interruptions

As indicated by the asterisks, six of the significantly different items received a higher mean ranking by the educators than by the business personnel.

Summary of Rating Sheet Comparisons

A total of nineteen sets of comparisons were made among the seven groups of respondents. Table XXX gives a summary of the groups which formed each comparison set, the number of significantly different items

TABLE XXX

SUMMARY OF RATING SHEET COMPARISONS

Comparison Group	No. of Significantly Different Items	Percent of Total Items*	No. of Cases+
Education Cross-Comparisons:			
Univ/College	15	33.3%	24/9
Univ/School	4	8.8	24/12
College/School	7	15.5	9/12
Business Personnel Cross-Comparisons:			
Mgr/Superv.	9	20.0	12/7
Superv./CS	19	42.2	7/30
CS/AS	18	40.0	30/14
Education/Business Comparisons:			
Univ./Mgr.	29	64.4	24/12
Univ./Superv.	15	33.3	24/7
Univ./CS	14	31.1	24/30
Univ./AS	8	17.7	24/14
College/Mgr.	8	17.7	9/12
College/Superv.	3	6.6	9/7
College/CS	21	46.6	9/30
College/AS	9	20.0	9/14
School/Mgr.	21	46.6	12/12
School/Superv.	13	28.8	12/7
School/CS	10	22.2	12/30
School/AS	8	17.7	12/14

*Percentages of the forty-five rating sheet items represented by the number of significantly different items in the previous column.
+Number of rating sheets tabulated for the two groups of respondents (respectively) in the first column.

found in each set, the percent of the total forty-five rating sheet
items that the significantly different items represents, and the number
of individuals (cases) represented in each group.

As shown by the table, the largest group represented was the WP
equipment operators, followed by the university educators, administrative
secretaries, school educators and WPC managers, college educators, and
supervisors. The comparison having the largest number of significantly
different items was between the university educators and WPC managers,
with twenty-nine significantly different items, representing 64.4 per-
cent of the forty-five rating sheet items. In contrast, the comparison
having the lowest number of significantly different items was between
the college educators and the WPC supervisors, with three significantly
different items, representing 6.6 percent of the forty-five rating sheet
items. The overall comparison of educators/business personnel is approx-
imately midpoint in the number of significantly different items, with
seventeen, or 37.7 percent of the forty-five total rating sheet items
showing a significant difference.

To conclude the statistical reporting of the rating sheets, those
items showing a significant difference in the sets of comparisons were
collated, revealing the number of times each item was significantly
different in the nineteen sets of comparisons. Below is a listing
of all forty-five rating sheet items in sequential order according to
the number of times it appeared as a significantly different item, begin-
ning with the most frequently occurring significantly different item.

Significantly different in eleven instances:
    37. Cooperativeness in working with others

Significantly different in nine instances:
1. Telephone techniques
18. Logging information (record keeping--card files, mailing lists, indexes, etc.)
20. Skill in management of time
40. Getting work out on time
43. Accepting criticism gracefully

Significantly different in eight instances:
3. Oral communicating (giving or taking instructions, asking questions)
13. Numerical (statistical; tabulated) typing
19. Skill in setting priorities in work
34. Business organization and management

Significantly different in seven instances:
7. Ability to edit (Prepare written work for typing or printing)
16. Ability to schedule appointments
24. Shorthand transcription
26. Mail handling (opening, sorting, distribution)
29. Scheduling of work (projects, etc.)
30. Research techniques (information gathering)
33. Personnel management
36. Bookkeeping/Accounting: Knowledge of accounting and principles of budgeting, etc.
41. Working under pressure

Significantly different in six instances:
2. Ability to dictate correspondence
4. Use of proper oral grammar
5. Composition of letters
14. Correction of errors (erasing or using correction tape or liquid, etc.)
21. Use of adding machines/calculators
28. Flow of work (flow charting, etc.)
38. Willingness to do more than expected
42. Confidentiality in the office

Significantly different in five instances:
23. Shorthand, receiving dictation
27. Systems analysis
31. Automated data processing
39. Loyalty towards employer

Significantly different in four instances:
32. Office management
44. Having a good sense of humor
45. Working with interruptions

Significantly different in three instances:
10. Automatic typewriter/text editor operation
12. Speed in typing
35. Bookkeeping/Accounting: Ability to keep a set of books

Significantly different in two instances:
8. Use of proper written grammar
15. Executive typewriter (use of proportional spacing)
17. Filing

Significantly different in one instance:
9. Standard electric typewriter operation
25. Use of copiers/duplicating equipment

Not significantly different in any instance:
6. Ability to proofread
11. Accuracy in typing
22. Machine transcription

Summary of Findings

The information compiled from the returned "Questionnaire for Educators" showed the following results:

1. No separate WP course was offered by 73.8 percent of the responding P-SI's; 22.6 percent of the responding P-SI's planned to begin a separate WP course; 52.4 percent of the P-SI's incorporated WP with other courses; and 15.1 percent of the P-SI's gave no exposure to WP.

2. One separate course in WP was offered by 17.9 percent of the P-SI's; 11 percent incorporated WP with other courses in addition to offering the separate course.

3. Two courses in WP were offered by 5.9 percent of the P-SI's; 4.3 percent incorporated WP with other courses in addition to offering two separate courses.

4. A WP program as defined in this study (three or more separate WP courses carrying at least two hours credit per course for three of

the courses) was offered by 2.4 percent of the responding P-SI's, with 1.5 percent incorporating in addition to offering separate courses.

Table XXXI shows the percent of the responding universities, colleges, and schools which offered from no courses to a program in WP.

TABLE XXXI

TYPE AND PERCENT OF P-SI'S OFFERING
FROM NO COURSES TO A PROGRAM
IN WORD PROCESSING

Type of Institution	Number of Courses Offered			
	0	1	2	Program
University	75.8%	14.7%	5.7%	3.7%
College	70.2	21.6	6.7	1.4
School	75.3	11.4	5.1	1.9

A total of 244 university educators responded to the Questionnaire and of that number, 75.8 percent were offering no courses in WP, as indicated by Table XXXI. As also indicated, only 3.7 percent of the universities were offering a program in WP as defined in this study.

Of the 208 college respondents, 70.2 percent of the P-SI's were offering no WP courses and 1.4 percent had a WP program. From the schools were returned 158 questionnaires, and 75.3 percent of those institutions offered no courses in WP whereas 1.9 percent had a program in WP.

The questionnaire also showed that WP concepts were being incorporated into courses such as office practice, business communications, office machines, shorthand, teaching methods and management.

The "Questionnaire for WP Instructors" revealed the following information:

1. A wide variety of course titles for WP courses was in use.

2. Typing and English were common prerequisites to WP courses, with other prerequisites mentioned.

3. Secretarial and business teacher education majors made up the majority of the enrollment in WP courses, with management and other majors also enrolled.

4. Many of the courses encompassed an internship, with the typical internship being 3.3 hours per day for 11.3 weeks. Internships were located both on- and off-campus.

5. Most of the teaching materials used in the WP courses were vendor products or teacher-constructed materials.

6. The equipment used in the WP courses included non-magnetic typewriters, magnetic typewriters, dictation/transcription equipment, composers, offset and mimeograph equipment, CRT media, photocopy equipment, a common-language high-speed printer, and a keypunch. Some of the courses utilized no equipment.

The interviews yielded the following data:

1. The title of the person in charge of the WPC ranged from vice president to secretary.

2. The type of WP system ranged in sophistication of development from one in which former secretaries were equipped with magnetic-media typewriters to one in which both a correspondence and an administrative support function were developed and managed by one individual.

3. High school or equivalent education was generally recognized as a minimum for employment in an entry-level WP position.

4. Pre-employment testing ranged from "none" to "typing plus other exams." Two companies were using a back-space, strike-over technique for testing typing.

5. Most of the interviewees felt that from three to six months' training on the equipment was necessary for proficiency.

6. The number of steps in the career paths for WP employees ranged from one to seven.

7. The WPC ages ranged from less than six months to ten years.

8. The output of WPC employees was not measured by some of the companies. However, of those which did measure output, a line-count was the most frequent method of measurement, with a weighting system for varying types of output being common.

The Kruskal-Wallis one-way analysis of variance used as a comparison of the rating sheets showed the following results:

1. The comparisons among the P-SI's showed the greatest number of significant differences between the university/college ratings and the least number of significant differences between the university/-school ratings.

2. The comparison of managers/supervisors showed nine items (20 percent) to have a significant difference in the responses of the groups.

3. The comparison of supervisor/operator showed 42.2 percent of the items to be significantly different with the supervisors showing a higher mean score in all cases.

4. The operator/administrative support comparison showed 40 percent of the items to be significantly different. With only two exceptions the AS showed higher mean ranks than the operators.

5. The university/manager comparison yielded 64.4 percent of the items having a significant difference, with the managers' ratings showing higher mean scores on most of the items.

6. All of the university/supervisor items which showed a significant difference (33.3 percent) were rated higher by the supervisors.

7. Half of the university/operator items which showed a significant difference (31.1 percent) were rated higher by the university respondents and half by the operators.

8. The university/administrative support comparisons showed administrative support responses to yield a significantly higher mean score on 17.7 percent of the items.

9. In all of the comparisons between colleges and business personnel, the college ratings showed a higher mean score on all of the items (with three exceptions) which yielded a significant difference.

10. In the comparisons between schools and business personnel, the business ratings showed a higher mean score on all of the items (with five exceptions) which yielded a significant difference.

11. In the overall comparison of all education responses to all business responses, 37.7 percent of the items showed a significant difference with the business results showing higher mean scores in two-thirds of the instances.

CHAPTER V

THE CURRICULUM MODEL FOR WORD PROCESSING

All research input sources were considered in arriving at the
following WP curriculum model. The review of the literature provided
an overall scope of WP--how it was being used in businesses across the
country, equipment capabilities, content and general complexion of on-
the-job training programs, feelings of business personnel concerning the
prior training and knowledges they would like beginning employees to
possess, content and organization of some of the P-SI WP programs, how
the P-SI programs were begun, what equipment was being used in the P-SI
programs, and some of the needs uncovered by the pioneering P-SI programs.

The interviews with business personnel in the Dallas-Fort Worth
metroplex clarified many of the generalities gained through the literary
review. In addition, the interviews provided first-hand information
concerning the desires, needs and expectations of business personnel.
For example, one of the most frequently mentioned needs was for courses
in WP management. The WP curriculum model presented contains an optional
management segment. The interviews also yielded forms and procedural
manuals used in the operation of the WP system in many firms, which
showed even more tangibly the needs of the system.

The contacts made with educators through the questionnaires yielded
more than completed returns. Some of the educators sent copies of WP
information which they felt would be useful in the development of a

curriculum model. The materials included articles from magazines, course syllabi, outlines of departmental course offerings showing which courses were required in the WP program, and an outline of topics covered in a special convention of educators interested in learning about WP.

Likewise, the statistical comparisons of the rating sheets completed by the educators and business personnel provided an indication of the effectiveness of the P-SI WP programs in providing for students those skills and knowledges needed for successful job entry.

The WP curriculum model, then, is a product of synthesizing all of the knowledge and information gained through reading and researching. It is not based solely upon any one source, but is an assimilation of all input.

The purpose of this curriculum model is to present a plausible set of courses, with specific outcomes, which would prepare those completing the program, or various parts of it, for an entry-level position in at least one of the many positions in WP. No specific teaching methods are ascribed to courses, allowing for individual differences in teachers and recognizing that methods successful for one teacher may be somewhat less than successful for another.

The model includes a set of core courses required of all who enter the program and several electives to complete the fifty-seven hour, four-semester program, with an optional, additional semester for management certification. Several of the courses could be taught as full semester courses or as concentrated half-semester courses, as more and more P-SI's introduce staggered entrance times and flexible scheduling.

By semester, the suggested order of courses is as follows:

Semester I

Courses	Credit
*Typing I	2
*Shorthand I	3
English Composition	3
Introduction to Business	3
WP Concepts	3
Total hrs. credit:	14

Semester II

Courses	Credit
*Typing II	2
*Shorthand II	3
Business Communications	3
Reprographics	2
Data Processing	3
Business Machines	2
Total hrs. credit:	15

Semester III

Typing III	2
Accounting I	3
Oral Communications	3
**AS Function	2
**Mag Media I	2
**Mag Media II	2
Total hrs. credit:	14

Semester IV

**Mag Media III	2
**Transcription	3
***Internship	4-6
Total hrs. credit:	9-11

Plus sufficient electives to total fifty-seven hours of classwork.

Semester V
(Optional Management)

Psychology of Human Relations	3
WP Management	3
Records Management	3
Office Management	3
Business Law	3
Total hrs. credit:	15

Electives

Shorthand III	3
**Executive Secretarial	2
**Business Spelling and Punctuation	2
**Filing	2
Principles of Managemt	3
Personal Finance	3

(Or other courses, with proper approval.)

*Could be passed through proficiency examination.
**One-half semester, concentrated course, if desired.
***Credit system:
    4 hours per day for 8 weeks = 4 credits
    5 hours per day for 8 weeks = 5 credits
    6 hours per day for 8 weeks = 6 credits

As constructed, the program is a two- to two-and-one-half year

program, but could be modified to fit into a four-year B.S. degree in

business teacher education or office administration. Or it could be scaled down to accommodate a one-year certification program. Course objectives and outlines are presented for those courses which might be new to the curriculum due to their specific WP application.

The following material are course objectives and outlines for those courses specific to WP.

Course Title: WP Concepts   Sem. Hrs. Credit: 3

Course Objectives:

1. To develop an understanding of the evolution of the WP system and its present function as part of information processing in an office.

2. To develop a fundamental understanding of the WPC, its purposes and operation.

3. To develop a fundamental understanding of the AS function, its purposes and operation.

4. To develop an understanding of the variety of configurations of WP which may be used in an organization.

5. To develop an understanding of the variety of career opportunities available through WP.

6. To acquaint students with some of the periodical literature concerning WP and the professional societies concerned with its advancement.

7. To acquaint students with magnetic media typewriters, their varying capabilities, and variety of uses.

8. To acquaint students with CRT equipment, capabilities and uses.

9. To acquaint students with mini-computer word processors, their capabilities and uses.

10. To develop an understanding of the various types of work which can be applied to WP, and the type of WP equipment best suited for that work application.

11. To develop an acquaintanceship with the input-output media used in WP.

12. To develop an understanding of the skills, abilities, and qualifications necessary for entry and advancement in the field of WP.

13. To acquaint students with the terminology used in WP.

14. To acquaint students with logging systems, work measurement techniques, and procedures manuals.

Course Outline:

1. INTRODUCTION
   Purpose of the course
   Organization of the course
   Requirements of the course
   Brief introduction to concept of WP

2. HISTORY OF WP
   Background of the office function
   Development of office equipment
   Development of WP
   Current status of WP in the office function

3. JUSTIFICATION FOR WP
   Increasing costs of paperwork, including cost of producing
      an average letter
   Inefficiency of one-to-one relationship and dependence upon
      one secretary
   Increasing costs of salaries--secretaries and executives
   Current management theory

4. CONFIGURATIONS AND USE OF WP
   Centralized
   Decentralized
   Satellite
   Types of companies using WP and its application

5. CAREER OPPORTUNITIES IN WP
   AS and WPC
   Associate
   Secretary
   Secretary Specialist
   Senior Secretary
   Executive Secretary
   Supervisor and/or manager

6. INPUT MEDIA
   Input equipment
      Discrete
      In- and out-of-house centralized

Dictation procedures
Originator and transcriptionist responsibilities

7. OUTPUT MEDIA
    Output equipment
        Magnetic media typewriters
        CRT equipment
    Document suitability
    Applications

8. WP/DP MERGER
    Computerized systems
        46/40 Document printer
        Word Processor/32
        Communicating typewriters
    Applications

9. WPC OPERATIONS
    Office design
        Modular
        Open landscaping
        Noise level
    Logging procedures
    Work measurement
    Procedures manuals
    Filing methods

10. AS FUNCTION
    Configuration and line of authority
    Expanded and specialized duties
        Research assistant
        Document coordinator
            proofreading
            attachments
            mailing
            filing
        Routine correspondence dictation to WPC
        Occasional typing
            interoffice memos
            file folders
            forms
            things not applicable to the WPC

11. PROBLEMS IN WP
    Resistance to change
    Personnel requirements
    Management--from inside or outside
        Placement of present employees in AS or WPC
        Over-staffing caused by WP; attrition problem
    Acceptance of system

12. PROJECTIONS FOR THE OFFICE OF THE FUTURE
    Information increase
    Equipment specialization
    Facsimile transmission
    Telecommunications
    The paperless office

In addition to the above topical suggestions, films, guest speakers from operative WP installations, vendor demonstrations, field trips to existing WP installations of various sizes and configurations, and a review of the literature should be incorporated into the course.

Course Title: Reprographics   Sem. hrs. credit: 2

Course Objectives:

Note: The preparation of masters and proper machine operation for both the memeograph and the stencil should be covered in business machines and are therefore not part of Reprographics.

1. To provide opportunity for an understanding of the development of reprographics and its place in the WP system.

2. To acquaint the students with the various types of equipment involved in reprographics.

3. To develop an understanding of the factors influencing equipment selection for in-house use and the factors influencing selection of out-of-house usage.

4. To develop an understanding of how to choose the right equipment for a particular job.

5. To develop skill in cost-comparison and cost-control for reprographic equipment.

6. To acquaint students with the various configurations for reprographic systems.

7. To develop a proficiency-level skill in operation of the offset duplicator.

8. To learn the care and proper maintenance of reprographic equipment.

9. To develop skill in preparation and selection of materials, use, and maintenance of copiers.

10. To develop the ability to think critically and to make decisions.

Course Outline:

1. INTRODUCTION
   Purpose and nature of the course
   Requirements of the course

2. BACKGROUND
   Reason for development of reprographic equipment
   Early to current equipment
   Equipment considered part of reprographics
           spirit duplicators
           stencil duplicators
           offset duplicators
           copiers
           printing

3. EQUIPMENT CAPABILITIES
   Reprographic Quality
   Suggested limits for number of copies
   Training and skill necessary for operation
   Collating and other capabilities
   Speed of reproduction
   Copy life
   Legality

4. METHOD OF REPRODUCTION
   Fluid
   Thermographic
   Electrostatic
   Typesetting (manual and computer)
   Photocomposition (composer)
   Ink jet printing (mag cards)

5. EQUIPMENT COSTS
   Rent, lease, buy
   Maintenance
   Softwares

6. FACTORS AFFECTING EQUIPMENT PURCHASE DECISIONS
   Quality of reproduction needed
   Distribution--in or out of house
   Floorspace available
   Personnel requirements

Training availability
Service availability and speed
Softwares available
Cost, quality, and time factor of out-of-house service

7. CONFIGURATIONS
Equipment
    centralized
    decentralized
Usage and maintenance
    open-access
    dedicated operator
Control of usage

8. HANDS-ON EXPERIENCE
Preparation of input (except mag card if composer or ink-jet
    printer are available)
Operation of equipment
Maintenance performance

In addition to the above topics, vendor demonstrations, tours of

companies with reprographic equipment, case studies, cost analyses, and

literary reading are recommended.

Course Title: AS Function   Sem. Hrs. Credit: 2

Course Objectives:

1. To provide students with a thorough understanding of the role
of AS in the total WP system.

2. To develop an understanding of the skills and abilities
necessary for an entry-level position in AS and for advancement in the
AS division.

3. To assist the student in developing the skills and abilities
necessary to succeed as part of an AS team.

4. To inform the students of the current status of AS in businesses,
the reasons for its slow development in comparison with the WPC, and the
outlook for the future.

5. To develop an understanding of the background and reasons for
having an AS function.

6. To develop the ability to think critically, to make decisions
and to work under pressure.

7. To provide an understanding of how the student's work fits into the flow of other office work and to gain an understanding of the overall business cycle.

8. To acquaint students with the equipment and supplies used in the AS function.

9. To develop oral and written communicative skills for more effective interpersonal relationships in the accomplishment of tasks.

10. To develop efficient work habits of accuracy, punctuality, initiative, organization, and the ability to see a job through to completion.

11. To develop desirable work attitudes of cooperation, integrity, and dependability.

12. To acquire an acquaintanceship level of compentence in research techniques and business report writing.

13. To acquire skill in telephone techniques and message handling.

14. To acquire skill in mail handling--dating, logging, and distributing, or answering those applicable.

15. To acquire skill in dictation techniques.

16. To acquire skill in the operation of at least one dictation machine.

Course Outline:

1. INTRODUCTION
   Purpose and nature of the course
   Requirements of the course

2. BACKGROUND
   Evolution from secretary to AS
      Causes
      Duties
      Resistance
   Cooperative functions of AS, WPC, and Executive secretaries

3. CURRENT OFFICE PROCEDURES
   Configurations
   Factors determining configuration
   Line of authority
   Advantages of teamwork by the AS staff

4. JOB OPPORTUNITIES IN THE AS FUNCTION
   Job titles & functions
   Requirements for entry
   Requirements for advancement

5. RESEARCH TECHNIQUES AND BUSINESS REPORT WRITING
   Use of reference materials
   Use of the library
   Use of microphotography files
   Techniques of grouping like material
   Critiquing and summarizing
   Assimilation of data
   Proper format for business reports

After adequate coverage of these topics, it is suggested that a simulated AS section be formed, with a rotation of jobs (including a supervisor to coordinate, provide coverage for absentees, etc.), to develop an understanding of the importance of teamwork and to gain experience in handling duties and responsibilities akin to AS. It is further suggested that toward the end of the class, when the transcription students are competent on their magnetic equipment, that the AS students dictate answers to routine correspondence or other materials to be typed and that the WPC students transcribe and return the material to the AS students for further processing.

Course Title: Mag Media I, II, III   Sem. Hrs. Credit: 2 ea.

Course Objectives:

Note: The following objectives and course design are applicable to all three of the Mag Media courses. The first two courses should be concerned with the operation of magnetic typewriters and the third with operation of a mini-computer word processor.

1. To dispel any "fear of equipment" that the student might have of operating sophisticated equipment.

2. To gain an understanding of the applications for which the equipment is suited.

3. To gain a minimum proficiency-level skill in the operation of the specific magnetic equipment being used.

4. To gain an understanding of the basic process by which mag media performs its' task.

5. To become acquainted with the terminology of mag media programming and operation.

Course Design:

The students should be allowed to work through the vendor's instruction manual for machine operation, if it is well-written and easily understood. In addition, teacher-constructed, special application problems designed to accompany the instruction manual could be utilized.

Course Title: Transcription   Sem. Hrs. Credit: 2

Course Objectives:

Note: Transcription is placed in the curriculum model after Mag Media so that the equipment can be used in Transcription.

1. To develop an understanding of and ability to maintain line counts or other work measurement tools.

2. To develop an understanding of the importance of accurate and efficient storage and retrieval systems.

3. To increase proficiency in the operation of magnetic equipment.

4. To develop the ability to maintain a logging system.

5. To develop the ability to proofread.

6. To develop skill in the use of dictation/transcription machines as they apply to the WPC.

7. To review the many kinds of business documents applicable to the mag equipment.

8. To improve the student's knowledge of business vocabulary as well as the rules of grammar, punctuation, spelling, word division, capitalization, use of numbers, and use of abbreviations.

9. To develop the ability to follow dictated and printed instructions and to carry through on an assignment.

10. To develop an understanding of the importance and use of user (author) manuals and WPC personnel manuals.

Course Design:

Transcription is not a new course to the business education curriculum, and no basic design change is suggested. For a course in a WP certificate program, however, the transcription should be done on mag media, logging and work measurement should be required, storage and retrieval of softwares should be required, and WP forms and manuals should be used to designate some of the typing requirements, layout standards, etc.

Course Title: Internship   **Sem. Hrs. Credit: 4-6**

Course Design:

The internship, as proposed, offers from four to six hours of classroom credit for completion. Exact timing and length of internship would have to be worked out with the cooperating company; however, it is recommended that a minimum of 160 hours of work (or the equivalent of four hours per day for eight weeks) be required for four credit hours, and that a minimum of 240 hours of work (or the equivalent of six hours per day for eight weeks) be required for six credit hours.

It is also recommended that half of the internship be spent in an AS capacity and half in a correspondence secretary capacity. It should be a cooperative effort between the P-SI and the business organization, and a coordinating educator should keep in close contact with the student's work supervisor concerning progress and/or problems.

Course Title: Filing   **Sem. Hrs. Credit: 2**

Course Design:

The filing course is likewise not new to the business and secretarial curriculum, but in this circumstance should include those systems specific to the AS function and the WPC, such as filing mag tapes and cards and a corresponding hard copy example in the WPC, storing frequently- and infrequently-used disks, tapes, belts, cards, maintaining hard copy files for several individuals, and maintaining logs of incoming transcription. In addition, it should include storage and retrieval of microphotographic media.

Course Title: WP Management   Sem. Hrs. Credit: 3

Course Objectives:

 *1. To develop an understanding of the functions, operations, and capabilities of various WP systems.

 2. To develop an understanding of the process and basic principles involved in conducting a feasibility study for the initiation of WP.

 3. To develop an understanding of the procedures involved in implementing a WP system, including the causes of resistence to change, how to cope with such resistence, how to "sell" the program to those involved, reorganization principles, and personnel selection and training or retraining.

 *4. To develop the ability to recognize inefficiencies and to implement procedures to cut costs in the various aspects of a WP system.

 *5. To develop an understanding of the role of logging systems, production standards, work-measurement techniques, cost analysis techniques, systems analysis methods, procedures manuals and work-simplification techniques.

 *6. To develop an understanding of the leadership skills and qualities necessary to function as a successful WP manager.

 *7. To develop an understanding of the personnel administration functions of recruitment, selection, induction, orientation and training as applied to WP.

 *8. To develop an understanding of the various types of WP equipment including computers available, and to develop the ability to evaluate and determine the best for particular needs.

 9. To gain an understanding of the principles of office design as it relates to a WPC and an AS group location.

 10. To develop an understanding of the processes of developing job descriptions and establishing salary structures.

 11. To develop an understanding of the principles of budgeting and a continuing equipment and personnel cost-justification program.

*Adapted from a WP Concepts course syllabus by Arnold Rosen.

**Course Outline:

   1. EVOLUTION AND PURPOSE OF WP
        History of the Office
        What is WP

WP in the total organizational structure
Justification of WP
    costs, productivity, quality, turn-around time
WP as a system
    text processing
    AS

2. ANALYSIS OF WP NEEDS
    Initiating a WP feasibility study
    Analyzing typewriting and administrative functions
    Office work specialization and WP analysis
    Tools for WP feasibility study
        Questionnaires and interviews
        task lists
        word flow charts
        forms analysis

3. IMPLEMENTING WP
    Proposal to management
    Gaining management support
    Human elements to consider
        overcoming resistance to change
        selecting and training the right people
        job enrichment factors
    Selling the users
    Time table

4. DESIGNING AND ORGANIZING A WP SYSTEM
    Factors to consider
        productivity
        responsiveness
        convenience
        job satisfaction
        quality
    Decentralization vs. centralization
    Environmental factors
        noise level
        lighting
        office landscaping
        space utilization
        heating/cooling
        furniture

5. EVALUATION OF WP EQUIPMENT
    Types of equipment available
    Importance of software support
    Selecting equipment to meet needs
    Using checklists to compare WP equipment
        types of input/output
        storage capacity
        special features

6. COMPUTER WP
   Types of systems available
   Analysis of various systems
   Software packages available
   Applications for computer WP
   Determining need
   Cost effectiveness
   Computer WP future

7. PROFESSIONAL STRUCTURE OF THE SYSTEM
   Developing job descriptions
   Establishing salary structure
   Providing career paths
   Preparing procedures manuals
   In-depth planning of AS

8. ROLE OF WP/AS MANAGER AND SUPERVISORS
   Duties and responsibilities
   Maintaining effective communication
   Building a team
   Creating a motivational atmosphere
   Scheduling and logging
   Control forms
   Production standards in WPC
   Developing a charge-back system
   Maintaining on-going equipment and personnel cost
      justification
   Improving utilization of WP system
   On-going training programs
   Budgeting
   Continual re-evaluation of the system

9. COLLATION
   Problem-solving and case discussion using ideas and infor-
      mation acquired in the course.

**Adapted from a proposed course description of Word Processing Manage-
ment by Kay Wagoner, Ball State University.

CHAPTER VI

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

The following conclusions arise from a synthesis of the research data from all sources:

1. Each type of P-SI surveyed--universities, colleges, schools-- was offering programs in WP. The percentage of institutions offering a WP program was small--3.7 percent of the universities, 1.5 percent of the colleges, and 1.9 percent of the schools. The conclusion is that P-SI's are beginning to recognize the prominence of WP and the differences in training it requires from the traditional secretarial positions.

2. Secretarial majors constituted the most frequently mentioned type of student enrolled in the WP courses. In addition, however, students majoring in communications, management, business teacher education, business technology, office administration, administrative services, and information systems were enrolled in the WP courses. Individuals outside the secretarial field are, then, beginning to recognize the impact of WP on their own areas and are seeking the training necessary to work efficiently with the WP system.

3. P-SI's used the following equipment in WP courses: standard electric (non-magnetic) typewriters, dictation-transcription equipment, offset, mimeograph, and photocopy reproduction equipment, common-language high-speed printers, keypunch equipment, magnetic typewriters, composers,

and CRT WP media. Most of the equipment appurtenant to a traditional secretarial program--non-magnetic typewriters and dictation equipment-- was purchased by the P-SI's, and about one-third of the remaining equipment was purchased by the P-SI's. All of the equipment which was purchased was used in the classroom, and for additional training equipment located elsewhere on campus was being rented. The conclusion is that WP, like DP in its infancy, has not yet made an impact suffi- cient enough to impel the purchase of equipment for classroom use.

4. On the basis of the research the type of business most fre- quently utilizing a WPC is inconclusive. The data gathered would indicate that financial institutions is the type of business which most frequently uses a WPC. However, not all company-types in the Dallas- Fort Worth metroplex were surveyed; neither were all businesses randomly sampled. It is concluded that on the basis of this research it is impos- sible to determine the type of company most frequently using a WPC.

5. The organization size had little to do with whether or not a WP system was utilized, since systems were found in organizations ranging from less than 50 employees to more than 2000. Company type was not the determining factor, since both service and product organi- zations maintained WP systems. The only discernible common factor among the companies was the type of hard-copy output required. Each of the companies needed materials which were to be used repetitively, or which required numerous revisions, or which required error-free copy. The conclusion is that the determining factor for utilizing a WP system is the type of hard-copy output required by the organization.

6. The minimum amount of education for an entry-level correspondence secretary's position is high school graduation or its equivalent. Additional education generally does not affect one's entry level by position, but in many instances does affect the entry level pay rate.

Previous training on the equipment being used in the WPC usually raises both the entry level position and pay in WPC's which have more than two steps in the WP career path. The conclusion is that in order to raise the standard for positions in WP, at least an acquaintance-level of machine operation should be taught individuals interested in employment in a WPC.

7. On-the-job training of WP employees ranges from three to six months to acquire a proficiency-level equipment operation, depending on the person's adaptability, previous training, and the type of work produced by the WPC. Only one interviewee had hired an individual with P-SI training in WP; therefore, the three to six months training period applies to persons without P-SI training. It is unknown what the impact of the introduction of WP in P-SI's will have on training periods.

8. The time required for job advancement is inconclusive based on the research information. Some companies reported no advancement possible, some reported advancement to be governed from outside the WPC (persons being "advanced" to positions outside the WPC when such positions became available), and others reported advancement to be based on each employees capabilities and controlled by the person in charge of the WPC. In most of the instances in which job advancement was not possible or was governed from outside the WPC, detailed job

descriptions were not available either. It is concluded that WP, in most instances, has not been in existence long enough to establish definite career paths or position standards.

9. It is clear from the interviews that one of the major areas in need of improvement is in originator understanding of WP and in originator training in dictation. Poor dictation procedures and unrealistic demands on the WPC are extremely costly to many companies.

10. The positions represented in WP are unique positions, requiring different skills and knowledges (or different amounts of certain skills and knowledges) in order to successfully perform the functions of the position. The business personnel were asked to indicate, for each item on the rating sheet, the importance of that item for success in their position. The rating sheet responses of the WP personnel--managers, supervisors, AS, CS--were compared by means of the Kruskal-Wallis one-way analysis of variance. The comparisons of the rating sheets completed by managers and supervisors showed nine of the forty-five item responses (20.0 percent) to be significantly different. The comparisons made between the supervisors' and operators' rating sheets showed nineteen items (42.2 percent) to be significantly different. Eighteen of the comparisons (40.0 percent) between the responses of operators and administrative support showed a significant difference. With that degree of variation, it is concluded that separate courses should be offered to supply the skills and knowledges unique to the position for which one is training.

11. Three sets of comparisons were made between the rating sheets completed by the educators concerning the WP programs conducted in the three types of P-SI's. Universities/schools analysis of variance showed 8.8 percent (four of the forty-five item comparisons) of the comparisons to be significantly different. In the colleges/schools comparisons 15.5 percent of the forty-five comparisons showed a significant difference; in the universities/colleges comparisons 33.3 percent of the items showed a significant difference. It is concluded that the WP programs conducted by the three types of P-SI's are not alike in the amount of emphasis placed on topics taught in the WP courses.

12. The Kruskal-Wallis one-way analysis of variance applied to the rating sheet responses of university educators/managers showed significant differences in 64.4 percent of the item comparisons. In two of the twenty-nine instances in which the Kruskal-Wallis revealed a significant difference between responses, the universities were supplying more emphasis on the topic (scored a higher mean rank) than managers needed according to the mean rating. For the remaining twenty-seven items (60 percent) on the rating sheet, managers apparently wanted more training or knowledge than universities were supplying in WP courses. However, most universities offer general management courses, not associated with WP, in which management principles are taught. It is concluded that the present WP programs of universities are not meeting the requirements of WP managers.

13. The comparison of college courses to managers showed a significant difference in 17.7 percent of the item comparisons of the rating

sheet responses. On only three items (6.6 percent) did managers indicate more training needed than the colleges were offering. For the position of manager, then, the college programs are in line with the on-job needs.

14. The comparison of school courses to managers showed a significant difference in 46.6 percent of the item comparisons of the rating sheets. On nineteen items (42.2 percent) the managers' responses resulted in a higher mean rank than the school educators' responses. It is concluded that WPC managers need more training than the schools are providing.

15. The supervisors' responses compared with the university educators' responses on the rating sheets showed that 33.3 percent of the item comparisons were significantly different. In all instances the supervisor's job required more training than the universities were providing (the university mean score was higher than the mean score of the supervisors). According to several respondents, many of those items were supplied in other courses and were, therefore, not included in the WP courses. For example, "oral communicating" and the "use of proper oral grammar" were covered in communication and speech courses, which were not considered part of the WP program.

Nine of the items which were rated differently by the two groups were concerning "attitude" rather than concrete concepts, and these things, according to some respondents, "cannot be taught in a course" and according to other respondents are, "stressed throughout the program as a fringe product. It is concluded that universities are probably

supplying most of the supervisor's needs, but not specifically in those courses called WP.

16. College educators' and supervisors' responses on the rating sheets showed only three item comparisons to be significantly different. In all three instances colleges had a higher mean rating, or were putting more emphasis on the topic, than the supervisors. It is concluded that the colleges are offering the necessary skills and knowledges for supervisors in their WP programs.

17. School educators' and supervisors' responses on the rating sheets showed 26.6 percent of the item comparisons to be significantly different. In all instances the supervisors had the higher mean rating. Those items fall in the categories of communications, management, and work attitudes, and according to some notations on the rating sheets, were covered in other courses. It is concluded that the schools are not offering the needed WPC supervisory skills and knowledges specifically in WP courses.

18. Except for work attitude items, the only items for which operators indicated needing more training than the educators (universities, colleges, and schools) were offering was in speed in typing (on the university/operator comparison) and in oral communicating (on the school/operator comparison). Since a fully-recognized program in WP is not generally available, typing courses in which speed is taught extensively and courses in communications are offered prior to or outside of the WP courses.

Operation of the equipment is usually one of the first WP courses initiated into a P-SI. It is not surprising, then, that each P-SI type is meeting or surpassing the requirements of an equipment operator.

19. In the analysis of variance of administrative support/university educators, 17.7 percent of the item comparisons showed a significant difference, with administrative support having the higher mean rank in all instances. Those items--communication skills, shorthand, office machines, management, accounting--were topics generally covered in traditional secretarial courses, and since WP courses are at the present time only an addition to existing curriculum, it is concluded that those topics have not yet been absorbed by WP.

20. College/AS analysis of variance showed 20 percent of the item comparisons to have significant differences. The college educators rated each of those items higher on the Likert scale than did the AS. Three of those items dealt with typing skills. Whereas AS should be able to type, it is concluded that a mastery-level of magnetic media equipment is not necessary for AS personnel.

21. Two of the items on which the colleges and AS ratings differed significantly concerned a knowledge of DP. In a sophisticated WP system, the AS personnel could be expected to understand DP equipment and computer systems. It is concluded, then, that the AS side of WP has not been developed to its fullest potential.

22. The school/AS analysis of variance showed 17.7 percent of the item comparisons to have been rated significantly different. The only two items on which schools were apparently offering more training in the

WP courses than AS needed was in the area of typing. As defined in this study, schools are private business and secretarial P-SI's. Such institutions generally offer very specialized courses, which prepare one for a specialized position in a short period of time. Therefore, the courses termed WP generally provide training on a particular piece of equipment. The six items on the rating sheet which were ranked higher by the AS than the schools were in areas which would be taught as secretarial courses and not related to specific machine operation.

It is concluded that most of the schools have not entered a full-fledged WP program but are offering courses in specific machine operation. However, this is not unanimously the case. In at least one instance the school did offer a full WP program according to the information supplied, but a rating sheet was not completed for each course in the program--only those dealing with maching operation. It is concluded that WP, to some educators, is viewed as machine operation only, even though WP programs have been instituted which include other subjects.

23. The proficiency level at which to teach magnetic-media equipment is inconclusive. Some of the interviews stated that a mastery-level knowledge of the equipment used in that particular WPC would be highly desirable. Other interviewees stated that an acquaintanceship with some kind of mag media was helpful in learning the particular equipment and methods in that WPC. However, several interviewees stated that a person with no previous training on mag media was easier to train than someone with knowledge about another type of machine or a person with previous training on the same machine

but using the methods and procedures of another company. Educator's, on the other hand, taught a mastery-level of equipment in most cases.

24. An evaluation of current educational practices in educating individuals for positions in WP indicates that P-SI's in general are not yet exercising their full potential for accomplishing the task. Of the P-SI's surveyed, 15.1 percent afforded no contact with WP; 52.5 percent were teaching WP concepts as a segment of (an)other course(s); 23.8 percent were offering one or two separate WP courses; 6.2 percent made no indication; and only 2.4 percent of the P-SI's had a program in WP as defined in this study.

Whereas the P-SI's which have a WP program are probably offering (within the many courses offered throughout the P-SI) the skills and knowledges needed for an entry-level position in each of the WP positions found in business, it is not evident from the rating sheet comparisons of WP courses/business personnel needs. As high as 60 percent of the items compared for the groups showed significant differences in the statistical interpretations. Most of those differences were in areas handled outside the realm of WP, since WP "programs" at the present time are generally courses (usually teaching equipment operation) added to an existing curriculum. Few P-SI's offered "specialist" or "associate" degrees in WP.

The equipment found in the P-SI's was not equivalent to that found in businesses. Several of the P-SI's were providing single-station media training, and only on rare instances was such equipment found in business. Most of the P-SI's had multiple dictation units and a very

limited number of magnetic typewriters. In business the WP equipment operator rarely sees or uses input dictation equipment but operates a magnetic typewriter most of the time. The use of CRT and minicomputer equipment was markedly higher in the businesses than in the P-SI's, too.

None of the businesses required a mastery-level of equipment knowledge for an entry position because, as stated by several interviewees, "educational institutions are not yet producing trained individuals so that we can obtain trained employees." In order to raise the standard of an entry level position in WP, all of the P-SI's should produce adequate numbers of trained employees to meet the need of the employment community.

One-half of the P-SI's had some form of internship connected with at least one course, but none of the institutions had an entire course devoted solely to an internship. A full-scale internship would be a valuable asset to the preparation of a WP employee.

Recommendations

The following recommendations are based on the knowledges acquired from this research in WP:

1. Community surveys should be made periodically by all P-SI's to determine the use of WP in the "work area" of graduates. Regardless of the geographical location of the P-SI, WP should be introduced to all business and secretarial students. The amount of emphasis and detail given the subject should increase with the availability of positions in the field.

2. Each P-SI serving a large metropolitan area should institute a fully-recognized program in WP, designed to meet the needs of persons entering each WP position--usually, manager, superivsor, correspondence secretary and administrative secretary. The program should lead to an "associate" or "specialist" certificate in WP.

3. The WP programs should culminate in an internship which would afford practical experience as both an AS and a CS for a period of at least four weeks.

4. One of the biggest controversies arising out of the inception of WP is whether or not to continue to stress accuracy and speed in typing since the equipment, according to some, "compensates" for those abilities. A typed document produced correctly the first time, regardless of whether the document is typed on an electric or a magnetic typewriter, saves both time and money. Paper costs are reduced and salaries are reduced. The equipment is certainly an aid in production, but is not a cure-all. Both speed and accuracy should continue to be stressed in typing courses.

5. Basic shorthand should be taught as a part of the WP curriculum to both CS and AS. At the present time many companies promote secretaries from the WPC to positions outside the center, and those positions frequently require a knowledge of shorthand.

6. As WP is introduced as a major or an an area of concentration within a major, a separate course in WP management should be included in the program. Additional courses in management should be taught as an optional portion of the WP program and should be open to WPC managers in the area.

7. Every potential word originator (i.e., management major) should be introduced to WP and should be taught to dictate and to use dictation equipment. A mini-course might be sufficient as an introduction, but all future managers should be taught to dictate and should know the function and capabilities of WP equipment.

8. How to dictate should not be given major emphasis in WP courses intended for the CS. A common complaint of interviewees was that persons having had WP courses in school had been taught how to dictate rather than how to transcribe. It was often claimed that entire courses were devoted to techniques of dictation. According to all of the information gathered, CS need not be taught to dictate proficiently.

9. How to dictate should be given more emphasis for the AS than for the CS. According to the information gathered, AS frequently dictate correspondence to the WPC.

10. The equipment used in the classroom should be, whenever possible, the same as that which is used in the community. Single-station magnetic typewriters are infrequently found in businesses because of the expanded capabilities of dual-station media, yet, many P-SI's continue to teach single-station media.

11. All WP students should be introduced to data processing through at least one course in data processing. The more sophisticated WP equipment is merging WP with DP; the individual familiar with both fields will be a valuable asset to an organization introducing new equipment.

12. According to many WP supervisors, the reason that previous training on WP equipment is not a requirement is that educational

institutions have not produced sufficient numbers of potential employees with such training. The recommendation is that P-SI's with graduates who find employement in large metropolitan areas equip as many students as possible with the necessary skills to up-grade the profession and to provide more highly-qualified employees to WP systems.

13. It is recommended that a study be undertaken to determine the differences in on-the-job training time between persons who have completed a WP program in a P-SI and persons who have not had such training.

14. Every word originator and/or management level employee in a company with a WP system should be given a thorough indoctrination and demonstration of the equipment and its capabilities.

15. Every word originator should be given instruction in the art of dictation and the use of the dictation equipment he/she should use to access the WPC.

16. Every word originator should be given written instructions of how to access the WPC, what type(s) of material the WPC will handle, the pre-recorded, stored information available through the center, and the turnaround time which can be expected from the center.

17. All future management majors should be taught proper utilization of the administrative capabilities of AS personnel. In most instances the interviews revealed that AS personnel was an untapped resource. The typing function of the secretary had been removed but in many cases had not been replaced with other duties, apparently. One of the objectives of WP is to free the AS to assist the principal(s). That objective cannot be fulfilled if the principal(s) do not know how or what to delegate to the AS personnel.

APPENDIX A

FIRST LETTER TO EDUCATORS

(Return Address)

(Mailing Address)

WORD PROCESSING INSTRUCTION

In recent years word processing has become a "buzz word" in many
educational circles, prompting a variety of responses. Our profes-
sional journals are heralding an increasing number of articles on the
subject, and some institutions are incorporating word processing
courses in their curriculum.

A study, my doctoral dissertation, is now underway to determine the
thrust of education into the area of word processing and to propose
a curriculum model for teaching word processing on the post-secondary
level. Your input to the study is essential if accurate information
is to be published.

Would you take just a moment, now, to complete the reverse side of
this correspondence, and return it to me at the above address. Thank
you!

(MRS.) SHARLETT GILLARD

sw

QUESTIONNAIRE FOR EDUCATORS

1. Name of post-secondary institution _____

2. Kind of educational institution:
    _____Four-year   _____Private Business or Secretarial
    _____Junior College   _____Other (please specify)_____

3. Your name_____ Position or Title_____

4. Does this school currently offer a(ny) course(s) in word processing?
    _____Yes (skip to question #6)   _____No (continue)

5. Do you have plans to institute such a course? _____Yes _____No
    If "Yes," when?_____(skip to question #9)

6. How many courses in word processing are currently offered?_____

7. When (semester and year) was the first WP course initiated?_____
    Second course?_____ Third course?_____

8. Please complete the following for each word processing course offered:

Department Offering WP Course	Course Title	Number of Credit Hours Granted	Name and Title of Person to Contact for Additional Information
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

9. Is word processing integrated into another course? _____Yes _____No
    If "Yes," please indicate which course(s):

    _____Typewriting   _____Management
    _____Sharthand   _____Business Communications
    _____Teaching Methods   _____Other(s) (Please specify)
    _____Office Machines   _____
    _____Office Practice   _____

Appendix C

FOLLOW-UP LETTER TO EDUCATORS

(Return Address)

(Mailing Address)

WORD PROCESSING INSTRUCTION

In recent years word processing has become a "buzz word" in many educational circles, prompting a variety of responses. Our professional journals are heralding an increasing number of articles on the subject, and some institutions are incorporating word processing courses in their curriculum.

A study, my doctoral dissertation, is now underway to determine the thrust of education into the area of word processing and to propose a curriculum model for teaching word processing on the post-secondary level. Your input to the study is essential if accurate information is to be published.

Would you take just a moment, now, to complete the reverse side of this correspondence, and return it to me at the above address. Thank you!

(MRS.) SHARLETT GILLARD

SW

Return of this second request for information will assure your representation in the study. A self-addressed, stamped envelope is enclosed for your convenience.

APPENDIX D

LETTER TO WP INSTRUCTORS

(Return Address)

(Mailing Address)

WORD PROCESSING INSTRUCTION

According to a recent survey, your educational institution offers at
least two independent courses (not integrated with another subject) in
word processing. Your name was given as the individual to contact for
more detailed information concerning one or more of those courses.

Would you please complete the questionnaire on the reverse of this letter
and the accompanying double-sided rating sheet for one course. An
additional questionnaire and rating sheet is enclosed for each course for
which your name was given on the original survey sheet.

This research is part of my doctoral dissertation in word processing
curriculum development. A self-addressed, stamped envelope is included
for your convenience in returning the material. Your cooperation is
sincerely appreciated!

(MRS.) SHARLETT GILLARD

Did you, as an instructor, receive any special training or education in
word processing before actually teaching word processing?_____
If "Yes," please elaborate:

(Questionnaire on reverse side)

APPENDIX E

QUESTIONNAIRE FOR WP INSTRUCTORS

1. Your name_____ Position/Title_____

2. Course title_____

3. Sequence of this course in word processing program: First course____
   Second course____ Third course____ Fourth course____ Other____

4. Prerequisite(s) to this course:_____

5. Indicate below the majors of students enrolled in this course:
   Secretarial ____   Business Teacher Education ____
   Communications ____   Other (please specify)____
   Management ____   _____

6. Do students in this course participate in an internship program?____
   If "Yes": Internship length:____hrs/day for____weeks
             Internship location:____on campus;____off campus

7. Textbook(s) used (name and author)_____

   Other teaching/training materials used_____
   _____

8. Indicate below the equipment used by students in this course, the
   amount of time or proficiency level required on each machine, and
   how many machines are available.

Equipment Brand and Model Number	Kind of Equipment	Time or Proficiency Level Required	No. of Units
a)			
b)			
c)			
d)			

9. For each machine noted in question 8, respectively complete:

	School Acquisition:		Part of Internship	Located in Classroom	Located Out of Classroom On Campus	Off Campus
	Purchased	Rented				
a)						
b)						
c)						
d)						

10. Is machine practice required outside of class? Yes____ No____
    If "Yes": Required lab time____   Open-access practice____
              Assistant on Duty____ and/or Assistant on Duty____

APPENDIX F

RATING SHEET FOR WP INSTRUCTORS

Course Title _____

For the following series of possible topics to be covered in word proces-
sing, please indicate the emphasis placed on each topic in the above-
named course by circling one number from 1 to 5, according to this
criteria:

                                 1 = Not Included
                                 2 = Minor Emphasis
                                 3 = Moderate Emphasis
                                 4 = Considerable Emphasis
                                 5 = Major Emphasis

Verbal Communication Skills

1.	Telephone techniques	1 2 3 4 5
2.	Ability to dictate correspondence	1 2 3 4 5
3.	Oral communicating (giving or taking instructions, asking questions)	1 2 3 4 5
4.	Use of proper oral grammar	1 2 3 4 5

Written Communication Skills

5.	Composition of letters	1 2 3 4 5
6.	Ability to proofread	1 2 3 4 5
7.	Ability to edit (Prepare written work for typing or printing)	1 2 3 4 5
8.	Use of proper written grammar	1 2 3 4 5

Typewriting

9.	Standard electric typewriter operation	1 2 3 4 5
10.	Automatic typewriter/text editor operation	1 2 3 4 5
11.	Accuracy in typing	1 2 3 4 5
12.	Speed in typing	1 2 3 4 5
13.	Numerical (statistical; tabulated) typing	1 2 3 4 5
14.	Correction of errors (erasing or using correction tape or liquid, etc.)	1 2 3 4 5
15.	Executive typewriter (use of proportional spacing)	1 2 3 4 5

Miscellaneous Skills

16.	Ability to schedule appointments	1 2 3 4 5
17.	Filing	1 2 3 4 5
18.	Logging information (record keeping--card files, mailing lists, indexes, etc.)	1 2 3 4 5

(Continue on reverse side)

(Continued from reverse side)   Rating Criteria:
                                       1 = Not included
                                       2 = Minor emphasis
                                       3 = Moderate emphasis
                                       4 = Considerable emphasis
                                       5 = Major emphasis

19. Skill in setting priorities in work   1 2 3 4 5
20. Skill in management of time   1 2 3 4 5
21. Use of adding machines/calculators   1 2 3 4 5
22. Machine transcription   1 2 3 4 5
23. Shorthand, receiving dictation   1 2 3 4 5
24. Shorthand transcription   1 2 3 4 5
25. Use of copiers/duplicating equipment   1 2 3 4 5
26. Mail handling (opening, sorting, distribution)   1 2 3 4 5

Knowledge About or Understanding of:
27. Systems analysis   1 2 3 4 5
28. Flow of work (flow charting, etc.)   1 2 3 4 5
29. Scheduling of work (projects, etc.)   1 2 3 4 5
30. Research techniques (information gathering)   1 2 3 4 5
31. Automated data processing   1 2 3 4 5

32. Office management   1 2 3 4 5
33. Personnel management   1 2 3 4 5
34. Business organization and management   1 2 3 4 5
35. Bookkeeping/Accounting:
       --Ability to keep a set of books   1 2 3 4 5
36. --Knowledge of accounting and principles of
         budgeting, etc.   1 2 3 4 5

Development of Attitudes Toward:
37. Cooperativeness in working with others   1 2 3 4 5
38. Willingness to do more than expected   1 2 3 4 5
39. Loyalty towards employer   1 2 3 4 5
40. Getting work out on time   1 2 3 4 5
41. Working under pressure   1 2 3 4 5
42. Confidentiality in the office   1 2 3 4 5
43. Accepting criticism gracefully   1 2 3 4 5
44. Having a good sense of humor   1 2 3 4 5
45. Working with interruptions   1 2 3 4 5

46. Other(s)_____   1 2 3 4 5

     _____   1 2 3 4 5

     _____   1 2 3 4 5

APPENDIX G

INTERVIEW SCHEDULE

Name of Company_____ Name of Interviewee_____

1. Your position or title_____
2. What type of company is this? (Mfg.; banking; engineering; etc.)
3. What is the total number of employees at this place of business?
4. What is the configuration of this WP system? (Centralized; decentralized; mixed; transitional)
5. How is WP arranged on the company's organization chart? (Chain of command)

6. How many employees are on the WP staff?
7. What kind of testing is done before hiring for an entry-level job?
    English_____ Typing_____ S'hand_____ Other_____
8. What are the hiring standards for entry-level positions?
    Typing, _____wpm; S'hand, _____wpm; Machines_____
9. How much education is required for an entry-level job?
10. Does the amount of one's education affect the entry-level? How?

11. If an individual has had no previous training in WP, how much on-the-job training is necessary?
12. If previous training (either in school or on-the-job) has been received, how much retraining is required?
13. To whom do the WPC employees report? (supervisor, manager, etc.)
14. When was the WP (center or system) begun?
15. Please state the career path available to WPC employees, beginning with the entry-level position and giving: job title, number of employees, duties, requirements for advancement.

16. What brand(s) of equipment do your WP equipment operators use, and how many of each is used? (Equipment brand & model; kind of equipment; number in WPC or system; percent of the working day it is in use.)
17. What dictation equipment is used by the originators? What types of materials are received by the WPC for transcription--hard copy, belts, tapes, hand written, etc.
18. What kind of typing is received by the WPC--letters, reports, statistics.
19. Is any kind of logging system used to measure the WPC output or the operator's output? If so, is a weighting system applied to the output? Are you on a charge-back system?

20. What kind of manuals are used by the WPC employees and/or the originators?
21. Has anyone terminated work as a CS because they did not like the work?
22. Has any originator training been given since the beginning of the WP system? How much; To what extent; By whom? Is the training a continuing program of updating or retraining and of training new employees?

23. How many employees are on the AS staff?
24. To whom do the AS employees report? (supervisor; departmant manager; other)
25. Please state the career path available to the AS, beginning with the entry-level position and stating: job title, number of employees, duties, requirements for advancement.
26. Can (or does) the AS employees dictate materials for transcription by the WPC?
27. When the switch was made to WP, did the present AS choose to remain as AS or have they been hired specifically for the position?

28. How many people still have a traditional (personal) secretary?
29. What is the level of the employee(s) with a traditional secretary?
30. Do these employees use the WPC in addition to the work produced by the personal secretary?
31. Does the secretary dictate materials for transcription by the WPC?

APPENDIX H

RATING SHEET FOR BUSINESS PERSONNEL

Your title or position_____

For the following series of topics, please rate the training needed by (administrative support/word processing/supervisory) personnel for job-entry positions. Circle one number from 1 to 5, according to this criteria:

1 = Not Included
2 = Minor Emphasis
3 = Moderate Emphasis
4 = Considerable Emphasis
5 = Major Emphasis

Verbal Communication Skills
1. Telephone techniques   1 2 3 4 5
2. Ability to dictate correspondence   1 2 3 4 5
3. Oral communicating (giving or taking
   instructions, asking questions)   1 2 3 4 5
4. Use of proper oral grammar   1 2 3 4 5

Written Communication Skills
5. Composition of letters   1 2 3 4 5
6. Ability to proofread   1 2 3 4 5
7. Ability to edit (Prepare written work for
   typing or printing)   1 2 3 4 5
8. Use of proper written grammar   1 2 3 4 5

Typewriting
9. Standard electric typewriter operation   1 2 3 4 5
10. Automatic typewriter/text editor operation   1 2 3 4 5
11. Accuracy in typing   1 2 3 4 5
12. Speed in typing   1 2 3 4 5
13. Numerical (statistical; tabulated) typing   1 2 3 4 5
14. Correction of errors (erasing or using
    correction tape or liquid, etc.)   1 2 3 4 5
15. Executive typewriter (use of proportional spacing)   1 2 3 4 5

Miscellaneous Skills
16. Ability to schedule appointments   1 2 3 4 5
17. Filing   1 2 3 4 5
18. Logging information (record keeping--card files,
    mailing lists, indexes, etc.)   1 2 3 4 5
(Continue on reverse side)

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(Continued from reverse side)   Rating Criteria:

1 = Not included
2 = Minor emphasis
3 = Moderate emphasis
4 = Considerable emphasis
5 = Major emphasis

19. Skill in setting priorities in work   1 2 3 4 5
20. Skill in management of time   1 2 3 4 5
21. Use of adding machines/calculators   1 2 3 4 5
22. Machine transcription   1 2 3 4 5
23. Shorthand, receiving dictation   1 2 3 4 5
24. Shorthand transcription   1 2 3 4 5
25. Use of copiers/duplicating equipment   1 2 3 4 5
26. Mail handling (opening, sorting, distribution) 1 2 3 4 5

Knowledge About or Understanding of:
27. Systems analysis   1 2 3 4 5
28. Flow of work (flow charting, etc.)   1 2 3 4 5
29. Scheduling of work (projects, etc.)   1 2 3 4 5
30. Research techniques (information gathering)   1 2 3 4 5
31. Automated data processing   1 2 3 4 5
32. Office management   1 2 3 4 5
33. Personnel management   1 2 3 4 5
34. Business organization and management   1 2 3 4 5
35. Bookkeeping/Accounting:
     --Ability to keep a set of books   1 2 3 4 5
36. --Knowledge of accounting and principles of
        budgeting, etc.   1 2 3 4 5

Development of Attitudes Toward:
37. Cooperativeness in working with others   1 2 3 4 5
38. Willingness to do more than expected   1 2 3 4 5
39. Loyalty towards employer   1 2 3 4 5
40. Getting work out on time   1 2 3 4 5
41. Working under pressure   1 2 3 4 5
42. Confidentiality in the office   1 2 3 4 5
43. Accepting criticism gracefully   1 2 3 4 5
44. Having a good sense of humor   1 2 3 4 5
45. Working with interruptions   1 2 3 4 5

46. Other(s)_____   1 2 3 4 5

     _____   1 2 3 4 5

     _____   1 2 3 4 5

APPENDIX I

RESULTS OF KRUSKAL-WALLIS ONE-WAY

ANALYSIS OF VARIANCE

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TABLE XXXII

RESULTS OF KRUSKAL-WALLIS ONE-WAY ANALYSIS OF VARIANCE FOR COMPARISON OF
UNIVERSITIES (GROUP I) AND COLLEGES (GROUP II)

Item No.*	Group I No. of Cases	Group I Mean Rank	Group II No. of Cases	Group II Mean Rank	Chi-Square**	Level of Sig.***
1	23	14.9	9	20.6	2.340	.126
2	24	16.1	9	19.4	.755	.362
3	24	16.1	9	19.5	.914	.339
4	22	14.4	9	19.7	2.319	.128
5	24	14.9	9	22.6	4.354	.037
6	24	16.1	9	19.4	1.413	.235
7	24	15.0	9	22.3	4.719	.030
8	23	14.9	9	20.4	2.975	.085
9	24	18.7	9	12.4	3.392	.066
10	22	14.5	9	19.7	2.357	.125
11	24	17.1	9	16.8	.010	.921
12	23	14.5	9	21.5	3.835	.050
13	24	14.2	9	24.3	7.504	.006
14	24	17.4	9	15.9	.204	.652
15	23	14.6	9	21.2	4.067	.044
16	23	15.3	9	19.6	1.600	.206
17	23	15.9	9	17.9	.338	.561
18	24	15.0	9	22.2	4.002	.045
19	23	14.1	9	22.4	5.730	.017
20	24	14.8	9	22.9	5.286	.021
21	23	14.5	9	21.5	4.731	.030
22	23	15.7	9	18.6	.662	.416
23	23	13.4	9	24.4	11.807	.001
24	23	13.4	9	24.6	12.944	.000
25	23	14.5	8	20.4	2.893	.089
26	23	14.1	9	22.7	6.762	.009
27	23	15.4	9	19.2	1.125	.289
28	23	15.2	9	19.7	1.564	.211
29	23	15.7	9	18.4	.580	.446
30	23	14.8	9	20.8	2.943	.086
31	23	13.3	9	24.6	10.310	.001
32	23	15.5	9	19.0	1.008	.315
33	23	15.4	9	19.1	1.225	.268
34	23	15.3	9	19.6	1.643	.200
35	23	15.0	9	20.4	3.012	.083
36	21	14.0	9	18.9	2.719	.099
37	23	14.7	9	21.1	3.757	.053
38	23	15.3	9	19.6	1.618	.203
39	23	15.2	9	19.7	1.723	.189
40	23	14.4	9	22.0	6.130	.013
41	23	15.3	9	19.6	1.593	.207
42	23	15.7	9	18.6	.687	.407
43	23	14.4	9	21.8	4.706	.030
44	23	15.7	9	18.6	.713	.398
45	23	15.4	9	19.4	1.469	.226

*See Appendix F for item to which "Item No." refers; **df = 1; ***Must be < .05 to be significant.

TABLE XXXIII

RESULTS OF KRUSKAL-WALLIS ONE-WAY ANALYSIS OF VARIANCE FOR COMPARISON OF
UNIVERSITIES (GROUP I) AND SCHOOLS (GROUP II)

Item No.*	Group I		Group II		Chi-Square**	Level of Sig.***	Item No.*	Group I		Group II		Chi-Square**	Level of Sig.***
	No. of Cases	Mean Rank	No. of Cases	Mean Rank				No. of Cases	Mean Rank	No. of Cases	Mean Rank		
1	23	15.3	7	16.1	.055	.815	23	23	14.5	7	18.9	2.294	.130
2	24	16.6	7	16.1	.002	.961	24	23	14.4	7	19.2	2.963	.085
3	24	19.7	12	16.1	1.038	.308	25	23	16.6	8	14.1	.576	.448
4	23	17.3	12	17.9	.029	.864	26	23	15.6	7	15.0	.045	.832
5	24	14.7	8	22.0	3.836	.050	27	23	15.8	7	14.6	.093	.760
6	24	18.5	12	18.5	.000	.986	28	23	16.1	7	13.4	.577	.447
7	24	14.8	7	20.1	2.151	.142	29	23	18.4	12	17.3	.083	.773
8	23	14.4	8	20.5	3.480	.062	30	23	15.2	7	16.5	.130	.718
9	24	16.8	8	15.6	.124	.724	31	23	15.9	8	16.4	.023	.879
10	22	14.4	8	18.4	1.346	.246	32	23	16.2	7	13.1	.825	.364
11	24	17.2	10	18.2	.094	.760	33	23	16.1	7	13.5	.580	.446
12	23	15.6	10	20.1	1.599	.206	34	23	15.9	7	14.1	.279	.597
13	24	14.0	9	25.0	8.943	.003	35	23	15.3	7	16.2	.100	.752
14	24	15.7	8	18.8	.861	.353	36	21	14.3	7	15.2	.122	.727
15	23	14.7	8	19.7	2.331	.127	37	23	18.6	12	16.8	.307	.580
16	23	15.6	7	15.1	.026	.873	38	23	18.0	12	18.0	.000	.987
17	23	16.5	7	12.3	1.506	.220	39	23	13.6	7	21.6	5.095	.024
18	24	17.3	8	14.0	.829	.363	40	23	17.0	12	20.0	.827	.363
19	23	17.7	9	13.5	1.392	.238	41	23	16.4	12	21.2	2.052	.152
20	24	19.1	12	17.3	.240	.624	42	23	13.7	7	21.4	4.843	.028
21	23	15.5	8	17.5	.458	.499	43	23	18.2	12	17.7	.021	.885
22	23	14.8	8	19.6	1.876	.171	44	23	14.3	7	19.6	2.156	.142
							45	23	17.7	12	18.5	.050	.823

*See Appendix F for item to which "Item No." refers;   **df = 1;   ***Must be < .05 to be significant.

TABLE XXXIV

RESULTS OF KRUSKAL-WALLIS ONE-WAY ANALYSIS OF VARIANCE FOR COMPARISON OF
COLLEGES (GROUP I) AND SCHOOLS (GROUP II)

Item No.*	Group I No. of Cases	Group I Mean Rank	Group II No. of Cases	Group II Mean Rank	Chi-Square**	Level of Sig.***
1	9	9.9	7	6.7	1.936	.164
2	9	9.4	7	7.3	.874	.350
3	9	13.2	12	9.4	2.054	.142
4	9	13.1	12	9.5	1.959	.162
5	9	10.2	8	7.7	1.162	.281
6	9	12.6	12	9.8	1.588	.208
7	9	9.4	7	7.3	1.411	.235
8	9	9.0	8	9.0	.000	1.000
9	9	7.5	8	10.7	1.821	.177
10	9	9.3	8	8.6	.106	.745
11	9	9.5	10	10.4	.201	.654
12	9	11.8	10	8.4	2.077	.149
13	9	9.3	9	9.7	.040	.841
14	9	7.9	8	10.2	1.154	.283
15	9	9.5	8	8.4	.204	.652
16	9	9.9	7	6.6	2.044	.153
17	9	10.2	7	6.4	2.906	.088
18	9	11.2	8	6.5	4.497	.034
19	9	12.7	9	6.3	7.358	.007
20	9	15.3	12	7.8	8.391	.004
21	9	10.2	8	7.7	1.157	.282
22	9	8.2	8	9.9	.537	.464
23	9	9.6	7	7.1	1.100	.294
24	9	9.6	7	7.1	1.100	.294
25	8	10.7	8	6.3	3.753	.053
26	9	10.6	7	5.9	4.317	.038
27	9	9.6	7	7.1	1.109	.292
28	9	9.9	7	6.6	2.073	.150
29	9	12.1	12	10.2	.541	.462
30	9	9.6	7	7.1	1.221	.269
31	9	11.1	8	6.6	3.551	.059
32	9	9.7	7	7.0	1.556	.212
33	9	9.7	7	7.0	1.556	.212
34	9	9.7	7	7.0	1.556	.212
35	9	9.3	7	7.5	.673	.412
36	9	9.3	7	7.5	.673	.412
37	9	14.3	12	8.5	5.426	.020
38	9	12.8	12	9.7	1.538	.215
39	9	8.1	7	9.0	.296	.586
40	9	14.0	12	8.8	6.000	.014
41	9	11.6	12	10.5	.221	.638
42	9	7.7	7	9.6	1.909	.296
43	9	14.3	12	8.5	5.426	.020
44	9	8.3	7	8.8	.053	.818
45	9	13.2	12	9.4	2.358	.125

*See Appendix F for item to which "Item No." refers; **df = 1; ***Must be < .05 to be significant.

TABLE XXXV

RESULTS OF KRUSKAL-WALLIS ONE-WAY ANALYSIS OF VARIANCE FOR COMPARISON OF
MANAGERS (GROUP I) AND SUPERVISORS (GROUP II)

Item No.*	Group I No. of Cases	Group I Mean Rank	Group II No. of Cases	Group II Mean Rank	Chi-Square**	Level of Sig.***
1	12	9.2	7	11.3	.672	.412
2	12	11.8	7	6.9	3.849	.050
3	12	9.7	7	10.5	.583	.445
4	12	9.8	7	10.3	.044	.834
5	12	11.5	7	7.4	2.491	.114
6	12	10.6	7	8.9	.998	.318
7	12	12.2	7	6.3	6.468	.011
8	12	11.5	7	7.4	5.786	.016
9	11	9.1	7	10.1	.138	.710
10	12	9.1	7	11.6	.947	.330
11	12	9.1	7	11.5	.932	.334
12	12	9.2	7	11.3	.611	.435
13	12	9.2	7	11.3	.613	.434
14	11	9.1	7	10.2	.224	.636
15	11	7.7	7	12.4	3.745	.053
16	12	11.9	7	6.8	3.842	.050
17	12	9.5	7	10.8	.228	.634
18	12	9.3	7	11.1	.582	.446
19	12	10.0	7	10.0	.000	1.000
20	12	10.0	7	10.0	.000	1.000
21	12	11.5	7	7.4	2.647	.104
22	12	9.6	7	10.6	.158	.691

Item No.*	Group I No. of Cases	Group I Mean Rank	Group II No. of Cases	Group II Mean Rank	Chi-Square**	Level of Sig.***
23	12	9.4	7	11.0	.517	.472
24	12	9.6	7	10.7	.352	.553
25	12	9.8	7	10.4	.068	.795
26	12	9.3	7	11.1	.504	.478
27	12	10.5	7	9.1	.329	.566
28	11	10.1	7	8.6	.403	.526
29	12	10.8	7	8.6	1.601	.206
30	12	11.0	7	8.2	1.219	.270
31	12	10.8	7	8.7	.640	.424
32	12	12.0	7	6.6	4.932	.026
33	12	12.1	7	6.4	6.110	.013
34	12	12.5	7	5.8	6.820	.009
35	12	10.5	7	9.1	.288	.591
36	12	12.8	7	5.3	8.150	.004
37	11	9.5	7	9.5	.000	1.000
38	12	10.2	7	9.6	.158	.691
39	12	10.0	7	10.0	.000	1.000
40	12	9.7	7	10.5	.583	.445
41	12	10.0	7	10.0	.000	1.000
42	12	10.0	7	10.0	.0000	1.000
43	12	9.9	7	10.2	.040	.846
44	12	9.3	7	11.2	.872	.351
45	12	9.4	7	11.0	1.235	.266

*See Appendix F for item to which "Item No." refers; **df = 1; ***Must be < .05 to be significant.

TABLE XXXVI

RESULTS OF KRUSKAL-WALLIS ONE-WAY ANALYSIS OF VARIANCE FOR COMPARISON OF
SUPERVISORS (GROUP I) AND OPERATORS (GROUP II)

Item No.*	Group I		Group II		Chi-Square**	Level of Sig.***
	No. of Cases	Mean Rank	No. of Cases	Mean Rank		
1	7	29.6	30	16.5	8.888	.003
2	7	21.8	30	18.4	1.621	.203
3	7	28.0	30	16.9	7.274	.007
4	7	26.8	30	17.2	4.974	.026
5	7	22.3	30	18.2	.859	.354
6	7	22.4	30	18.2	1.098	.295
7	7	18.1	30	19.2	.067	.796
8	7	17.5	30	19.4	.247	.620
9	7	15.8	29	19.2	.642	.423
10	7	19.2	28	17.7	.148	.701
11	7	18.9	30	19.0	.002	.964
12	7	16.5	30	19.6	.536	.464
13	7	19.9	30	18.8	.068	.795
14	7	17.7	30	19.3	.129	.719
15	7	23.6	29	17.3	2.387	.122
16	7	27.5	30	17.0	8.176	.004
17	7	24.5	30	17.7	2.602	.107
18	7	29.9	30	16.5	9.159	.002
19	7	28.0	30	16.9	7.046	.008
20	7	26.5	29	16.6	6.215	.013
21	7	26.1	30	17.4	5.112	.024
22	7	20.9	30	18.6	.273	.601

Item No.*	Group I		Group II		Chi-Square**	Level of Sig.***
	No. of Cases	Mean Rank	No. of Cases	Mean Rank		
23	7	21.6	30	18.4	.845	.358
24	7	20.9	30	18.6	.546	.460
25	7	23.3	30	18.0	1.483	.223
26	7	25.2	30	17.6	4.132	.042
27	7	29.6	30	16.5	9.860	.002
28	7	25.9	30	17.4	3.974	.046
29	7	29.4	29	15.9	10.022	.002
30	7	28.2	29	16.2	10.061	.002
31	7	22.5	30	18.2	1.480	.224
32	7	29.0	30	16.7	8.848	.003
33	7	28.2	30	16.8	8.271	.004
34	7	28.2	30	16.6	7.726	.005
35	7	25.6	30	17.5	6.185	.013
36	7	21.4	30	18.4	.714	.398
37	7	24.5	29	17.1	4.096	.043
38	7	24.9	29	17.0	3.856	.050
39	7	23.5	29	17.3	3.194	.074
40	7	21.5	29	17.8	1.682	.195
41	7	20.5	29	18.0	1.052	.305
42	7	21.0	29	17.9	1.355	.244
43	7	22.7	29	17.5	1.924	.165
44	7	24.1	29	17.1	3.190	.074
45	7	23.5	29	17.3	3.165	.075

*See Appendix F for item to which "Item No." refers;   **df = 1;   ***Must be $< .05$ to be significant.

TABLE XXXVII

RESULTS OF KRUSKAL-WALLIS ONE-WAY ANALYSIS OF VARIANCE FOR COMPARISON OF
CORRESPONDENCE SECRETARIES (CS) AND ADMINISTRATIVE SUPPORT (AS)

Item No.*	CS No. of Cases	CS Mean Rank	AS No. of Cases	AS Mean Rank	Chi-Square**	Level of Sig.***
1	30	17.8	14	32.6	13.306	.000
2	30	17.3	14	33.6	21.784	.000
3	30	22.6	14	22.4	.002	.968
4	30	21.4	14	24.9	.776	.378
5	30	19.7	14	28.4	4.654	.031
6	30	21.6	14	14.5	.654	.419
7	30	20.3	14	27.2	2.980	.084
8	30	22.7	14	22.0	.047	.829
9	29	22.4	14	21.2	.089	.765
10	28	25.0	14	14.5	7.297	.007
11	30	22.2	14	23.2	.080	.777
12	30	24.7	14	17.9	3.035	.082
13	30	23.2	14	21.0	.285	.593
14	30	20.9	14	26.0	1.631	.202
15	29	20.9	14	24.3	.814	.367
16	30	18.0	14	32.2	15.249	.000
17	30	18.8	14	30.5	8.785	.003
18	30	21.1	14	25.5	1.241	.265
19	30	21.5	14	24.6	.618	.432
20	29	23.5	14	18.8	1.491	.222
21	30	18.2	14	31.8	13.109	.000
22	30	23.6	14	20.1	.732	.392
23	30	19.6	14	28.6	6.369	.012
24	30	18.9	14	30.3	11.108	.001
25	30	19.7	14	28.4	4.681	.031
26	30	17.8	14	32.6	15.249	.000
27	30	21.8	14	23.9	.309	.578
28	30	21.9	14	23.7	.197	.657
29	29	21.2	14	25.8	1.995	.158
30	29	18.1	14	30.0	10.638	.001
31	30	21.7	14	24.2	.623	.430
32	30	19.2	14	29.6	7.338	.007
33	30	19.2	14	29.5	7.636	.006
34	30	18.0	14	32.2	13.373	.000
35	30	19.3	14	29.4	9.773	.002
36	30	19.4	14	29.1	7.283	.007
37	29	20.7	14	24.8	1.446	.229
38	29	21.5	13	21.5	.000	.991
39	29	23.0	14	19.9	.759	.384
40	29	23.1	14	19.8	1.115	.291
41	29	25.0	14	15.8	8.194	.004
42	29	22.8	14	20.4	.646	.422
43	29	24.0	14	17.8	2.751	.097
44	29	23.4	14	19.1	1.303	.254
45	29	24.1	14	17.7	3.045	.081

*See Appendix F for item to which "Item No." refers. **df = 1; ***Must be < .05 to be significant.

TABLE XXXVIII

RESULTS OF KRUSKAL-WALLIS ONE-WAY ANALYSIS OF VARIANCE FOR COMPARISON OF
UNIVERSITIES (GROUP I) AND MANAGERS (GROUP II)

Item No.*	Group I		Group II		Chi-Square**	Level of Sig.***	Item No.*	Group I		Group II		Chi-Square**	Level of Sig.***
	No. of Cases	Mean Rank	No. of Cases	Mean Rank				No. of Cases	Mean Rank	No. of Cases	Mean Rank		
1	23	14.3	12	25.2	10.131	.001	23	23	17.6	12	18.7	.144	.705
2	24	17.7	12	20.1	.440	.507	24	23	18.0	12	18.0	.000	1.000
3	24	14.6	12	26.3	11.688	.001	25	23	17.3	12	19.3	.332	.565
4	22	14.0	12	24.0	8.706	.003	26	23	16.6	12	20.6	1.545	.214
5	24	15.3	12	24.8	6.805	.009	27	23	15.7	11	22.5	3.640	.056
6	24	17.1	12	21.2	2.335	.126	28	23	15.2	12	22.2	3.909	.048
7	24	15.8	12	23.9	6.008	.014	29	23	13.9	12	25.9	12.605	.000
8	23	15.1	12	23.5	7.834	.005	30	23	14.7	12	24.3	7.310	.007
9	24	20.3	11	23.1	4.327	.038	31	23	16.4	12	21.2	2.003	.157
10	22	17.3	12	17.8	.017	.896	32	23	13.4	12	26.8	14.656	.000
11	24	19.9	12	15.8	1.598	.206	33	23	13.1	12	27.4	17.063	.000
12	23	18.2	12	17.7	.020	.886	34	23	13.4	12	26.8	14.481	.000
13	24	18.5	12	18.5	.000	.988	35	23	16.1	12	21.7	3.133	.077
14	24	21.2	11	11.1	8.042	.005	36	21	12.7	12	24.5	13.428	.000
15	23	17.2	11	18.1	.079	.778	37	23	14.4	11	24.0	9.233	.002
16	23	14.5	12	24.8	8.572	.003	38	23	14.6	12	24.5	9.135	.003
17	23	17.5	12	19.0	.192	.661	39	23	14.4	12	25.0	11.051	.001
18	24	16.1	12	23.3	4.122	.042	40	23	15.4	12	22.9	5.970	.015
19	23	13.8	12	26.0	13.481	.000	41	23	14.6	12	24.5	9.901	.002
20	24	14.5	12	26.5	12.729	.000	42	23	14.4	12	25.0	11.005	.001
21	23	14.0	12	25.8	11.945	.001	43	23	15.2	12	23.4	6.146	.013
22	23	17.2	12	19.5	.407	.524	44	23	15.4	12	23.0	4.893	.027
							45	23	15.3	12	23.2	5.810	.016

*See Appendix F for item to which "Item No." refers;   **df = 1;   ***Must be < .05 to be significant.

TABLE XXXIX

RESULTS OF KRUSKAL-WALLIS ONE-WAY ANALYSIS OF VARIANCE FOR COMPARISON OF
UNIVERSITIES (GROUP I) AND SUPERVISORS (GROUP II)

Item No.*	Group I		Group II		Chi-Square**	Level of Sig.***
	No. of Cases	Mean Rank	No. of Cases	Mean Rank		
1	23	13.1	7	23.4	8.774	.003
2	24	17.0	7	12.4	1.688	.194
3	24	13.5	7	24.5	8.982	.003
4	22	12.9	7	21.7	6.252	.012
5	24	15.3	7	18.3	.599	.439
6	24	15.7	7	17.1	.197	.657
7	24	16.2	7	15.5	.030	.862
8	23	14.9	7	17.6	.610	.435
9	24	16.7	7	13.6	.857	.355
10	22	14.1	7	17.9	1.216	.270
11	24	15.9	7	16.4	.031	.860
12	23	14.9	7	17.5	.509	.476
13	24	15.2	7	18.9	.981	.322
14	24	17.4	7	11.3	2.842	.092
15	23	14.1	7	20.1	3.263	.071
16	23	14.8	7	17.7	.667	.414
17	23	15.1	7	16.9	.272	.602
18	24	14.2	7	22.0	4.359	.037
19	23	13.1	7	23.5	8.613	.003
20	24	13.7	7	24.0	8.084	.004
21	23	14.2	7	19.8	2.913	.088
22	23	14.7	7	18.2	.951	.330

Item No.*	Group I		Group II		Chi-Square**	Level of Sig.***
	No. of Cases	Mean Rank	No. of Cases	Mean Rank		
23	23	14.7	7	18.1	1.375	.241
24	23	15.1	7	16.9	.495	.482
25	23	14.7	7	18.1	.881	.348
26	23	14.4	7	19.3	2.276	.131
27	23	14.4	7	19.2	1.709	.191
28	23	14.8	7	17.7	.610	.435
29	23	14.1	7	20.1	2.767	.096
30	23	14.3	7	19.4	1.977	.160
31	23	15.3	7	16.1	.048	.827
32	23	14.2	7	19.7	2.276	.131
33	23	14.3	7	19.6	2.216	.137
34	23	14.1	7	20.1	2.863	.091
35	23	14.6	7	18.3	1.311	.252
36	21	14.1	7	15.9	.401	.527
37	23	13.5	7	22.0	6.241	.012
38	23	13.6	7	21.6	5.144	.023
39	23	13.4	7	22.5	6.974	.008
40	23	13.8	7	21.0	4.899	.027
41	23	13.5	7	22.0	6.199	.013
42	23	13.4	7	22.5	6.931	.008
43	23	13.7	7	21.5	4.916	.027
44	23	13.5	7	22.1	5.992	.014
45	23	13.5	7	22.0	6.176	.013

*See Appendix F for item to which "Item No." refers; **df = 1; ***Must be $< .05$ to be significant.

TABLE IL

RESULTS OF KRUSKAL-WALLIS ONE-WAY ANALYSIS OF VARIANCE FOR COMPARISON OF
UNIVERSITIES (GROUP I) AND OPERATORS (GROUP II)

Item No.*	Group I		Group II		Chi-Square**	Level of Sig.***
	No. of Cases	Mean Rank	No. of Cases	Mean Rank		
1	23	23.0	30	30.1	3.069	.080
2	24	33.7	30	22.6	10.746	.001
3	24	24.1	30	30.2	2.242	.134
4	22	23.2	30	28.9	2.004	.157
5	24	27.3	30	27.6	.005	.944
6	24	28.2	30	27.0	.108	.743
7	24	27.6	30	27.4	.001	.980
8	23	23.3	30	29.8	3.076	.079
9	24	28.6	29	25.7	.543	.461
10	22	23.4	28	27.1	.927	.336
11	24	27.6	30	27.4	.003	.960
12	23	22.0	30	30.8	4.645	.031
13	24	24.3	30	30.1	1.924	.165
14	24	33.0	30	23.1	5.679	.017
15	23	25.0	29	27.7	.529	.467
16	23	31.2	30	23.8	4.559	.033
17	23	29.3	30	25.2	1.070	.301
18	24	29.2	30	26.2	.511	.475
19	23	26.5	30	27.4	.043	.837
20	24	24.2	29	29.2	1.487	.223
21	23	27.5	30	26.6	.059	.808
22	23	25.3	30	28.3	.527	.468

Item No.*	Group I		Group II		Chi-Square**	Level of Sig.***
	No. of Cases	Mean Rank	No. of Cases	Mean Rank		
23	23	26.4	30	27.4	.102	.750
24	23	27.0	30	27.0	.001	.982
25	23	26.9	30	27.0	.001	.979
26	23	28.2	30	26.1	.373	.541
27	23	32.5	30	22.8	5.911	.015
28	23	32.5	30	22.8	5.520	.019
29	23	33.2	29	21.2	8.479	.004
30	23	30.9	29	23.0	4.672	.031
31	23	30.3	30	24.5	2.652	.103
32	23	30.6	30	24.2	2.729	.099
33	23	30.9	30	24.0	3.379	.066
34	23	29.2	30	25.3	1.068	.301
35	23	29.2	30	25.4	1.697	.193
36	21	26.3	30	25.8	.028	.867
37	23	22.7	29	29.5	3.041	.081
38	23	23.9	29	28.6	1.387	.239
39	23	21.3	29	30.7	5.962	.015
40	23	21.6	29	30.4	6.247	.012
41	23	20.2	29	31.5	10.301	.001
42	23	20.1	29	31.6	10.037	.002
43	23	22.2	29	29.9	3.894	.048
44	23	21.8	29	30.2	4.483	.034
45	23	23.0	29	29.3	2.749	.097

*See Appendix F for item to which "Item No." refers; **df = 1; ***Must be $< .05$ to be significant.

TABLE ILI

RESULTS OF KRUSKAL-WALLIS ONE-WAY ANALYSIS OF VARIANCE FOR COMPARISON OF
UNIVERSITIES (GROUP I) AND ADMINISTRATIVE SUPPORT (GROUP II)

Item No.*	Group I No. of Cases	Group I Mean Rank	Group II No. of Cases	Group II Mean Rank	Chi-Square**	Level of Sig.***
1	23	14.3	14	26.7	13.349	.000
2	24	18.2	14	21.6	.883	.347
3	24	17.9	14	22.2	1.496	.221
4	22	16.0	14	22.5	3.559	.059
5	24	16.9	14	23.9	3.676	.055
6	24	19.2	14	19.9	.049	.825
7	24	18.2	14	21.8	1.061	.303
8	23	17.4	14	21.6	1.680	.195
9	24	20.5	14	17.8	.616	.433
10	22	20.8	14	15.0	2.723	.099
11	24	19.4	14	19.6	.003	.956
12	23	18.3	14	20.2	.297	.586
13	24	18.5	14	21.2	.533	.465
14	24	20.6	14	17.6	.759	.384
15	23	17.2	14	22.0	2.181	.140
16	23	17.0	14	22.3	2.344	.126
17	23	17.1	14	22.1	2.062	.151
18	24	19.2	14	20.0	.042	.838
19	23	17.6	14	21.2	1.077	.299
20	24	19.2	14	20.1	.064	.800
21	23	15.5	14	24.8	7.523	.006
22	23	18.8	14	19.4	.026	.871
23	23	15.5	14	24.7	8.358	.004
24	23	15.3	14	15.0	9.705	.002
25	23	17.3	14	21.9	1.740	.187
26	23	15.2	14	25.2	8.476	.004
27	23	21.1	14	15.5	2.527	.112
28	23	20.9	14	15.9	1.964	.161
29	23	20.1	14	17.2	.626	.429
30	23	17.4	14	21.6	1.446	.229
31	23	19.8	14	17.6	.453	.501
32	23	17.6	14	21.2	1.060	.303
33	23	18.0	14	20.6	.571	.450
34	23	16.0	14	23.9	5.102	.024
35	23	16.9	14	22.4	2.937	.087
36	21	15.3	14	22.1	4.806	.028
37	23	16.2	14	23.6	5.027	.025
38	23	17.4	13	20.5	.833	.361
39	23	17.0	14	22.3	2.394	.122
40	23	17.4	14	21.6	1.680	.195
41	23	18.7	14	19.4	.040	.842
42	23	16.6	14	23.0	3.640	.056
43	23	18.6	14	19.7	.107	.743
44	23	17.6	14	21.3	1.108	.292
45	23	19.2	14	18.6	.033	.856

*See Appendix F for item to which "Item No." refers; **df = 1; ***Must be < .05 to be significant.

TABLE ILII

RESULTS OF KRUSKAL-WALLIS ONE-WAY ANALYSIS OF VARIANCE FOR COMPARISON OF
COLLEGES (GROUP I) AND MANAGERS (GROUP II)

Item No.*	Group I		Group II		Chi-Square**	Level of Sig.***
	No. of Cases	Mean Rank	No. of Cases	Mean Rank		
1	9	10.0	12	11.8	.467	.495
2	8	11.4	12	10.7	.066	.798
3	9	9.3	12	12.2	2.431	.119
4	9	10.6	12	11.3	.117	.732
5	9	11.9	12	10.3	.383	.536
6	9	10.8	12	11.2	.078	.780
7	9	11.2	12	10.8	.054	.816
8	9	10.3	12	11.5	1.333	.248
9	9	10.1	11	10.8	.076	.783
10	9	13.0	12	9.5	1.867	.172
11	9	12.4	12	9.9	1.007	.316
12	9	13.9	12	8.8	3.697	.054
13	9	14.1	12	8.7	4.306	.038
14	9	12.4	11	8.9	1.791	.181
15	9	13.3	11	8.2	4.234	.040
16	9	9.3	12	12.2	1.231	.267
17	9	11.7	12	10.5	.191	.662
18	9	12.1	12	10.2	.669	.413
19	9	10.3	12	11.5	1.333	.248
20	9	10.3	12	11.5	1.333	.248
21	9	10.9	12	11.1	.005	.942
22	9	11.3	12	10.8	.050	.823
23	9	14.7	12	8.2	6.740	.009
24	9	15.1	12	7.9	8.594	.003
25	8	12.3	12	9.3	1.331	.249
26	9	13.3	12	9.2	2.407	.121
27	9	10.3	12	11.5	.199	.655
28	9	10.2	11	10.8	.063	.802
29	9	8.7	12	12.8	3.998	.046
30	9	10.7	12	11.2	.051	.820
31	9	13.7	12	9.0	3.077	.079
32	9	8.8	12	12.7	2.542	.111
33	9	8.2	12	13.1	4.539	.033
34	9	9.2	12	12.4	1.630	.202
35	9	11.3	12	10.8	.050	.823
36	9	8.3	12	13.0	3.068	.080
37	9	9.9	11	11.0	1.222	.269
38	9	10.1	12	11.7	.986	.321
39	9	9.7	12	12.0	2.807	.094
40	9	11.5	12	10.6	.750	.386
41	9	9.7	12	12.0	2.800	.094
42	9	9.0	12	12.5	4.421	.035
43	9	11.2	12	10.8	.054	.816
44	9	9.8	12	11.9	.738	.390
45	9	10.4	12	11.4	.269	.604

*See Appendix F for item to which "Item No." refers; **df = 1; ***Must be < .05 to be significant.

TABLE ILIII

RESULTS OF KRUSKAL-WALLIS ONE-WAY ANALYSIS OF VARIANCE FOR COMPARISON OF COLLEGES (GROUP I) AND SUPERVISORS (GROUP II)

Item No.*	Group I		Group II		Chi-Square**	Level of Sig.***
	No. of Cases	Mean Rank	No. of Cases	Mean Rank		
1	9	7.3	7	10.1	1.499	.221
2	9	10.3	7	6.1	3.389	.066
3	9	7.3	7	10.0	2.692	.101
4	9	8.1	7	9.0	.205	.651
5	9	10.0	7	6.6	2.258	.133
6	9	9.0	7	7.9	.490	.484
7	9	10.6	7	5.7	5.103	.024
8	9	9.4	7	7.3	1.411	.235
9	9	8.0	7	9.1	.248	.619
10	9	8.8	7	8.1	.136	.713
11	9	8.4	7	8.6	.017	.898
12	9	9.7	7	7.0	1.393	.238
13	9	9.7	7	6.9	1.565	.211
14	9	9.2	7	7.6	.534	.465
15	9	8.8	7	8.1	.077	.782
16	9	9.1	7	7.8	.297	.586
17	9	8.6	7	8.4	.003	.957
18	9	8.6	7	8.4	.005	.945
19	9	8.1	7	9.0	.778	.378
20	9	8.1	7	9.0	.778	.378
21	9	9.4	7	7.3	.855	.355
22	9	8.3	7	8.7	.028	.867

Item No.*	Group I		Group II		Chi-Square**	Level of Sig.***
	No. of Cases	Mean Rank	No. of Cases	Mean Rank		
23	9	10.3	7	6.1	3.277	.070
24	9	10.7	7	5.7	4.757	.029
25	8	8.9	7	7.0	.700	.403
26	9	9.3	7	7.4	.675	.411
27	9	8.4	7	8.6	.003	.957
28	9	8.9	7	8.0	.160	.690
29	9	7.7	7	9.5	.728	.394
30	9	9.1	7	7.8	.301	.583
31	9	10.7	7	5.7	4.599	.032
32	9	8.4	7	8.6	.012	.912
33	9	8.5	7	8.5	.000	1.000
34	9	8.9	7	7.9	.191	.662
35	9	9.2	7	7.6	.529	.467
36	9	9.5	7	7.2	1.051	.305
37	9	8.1	7	9.0	.778	.378
38	9	8.1	7	9.0	.296	.586
39	9	7.7	7	9.5	1.667	.197
40	9	8.5	7	8.5	.000	1.000
41	9	7.7	7	9.5	1.659	.198
42	9	7.3	7	10.0	2.667	.102
43	9	8.6	7	8.4	.008	.927
44	9	7.3	7	10.1	2.013	.156
45	9	7.7	7	9.5	1.667	.197

*See Appendix F for item to which "Item No." refers; **df = 1; ***Must be $< .05$ to be significant.

TABLE ILIV

RESULTS OF KRUSKAL-WALLIS ONE-WAY ANALYSIS OF VARIANCE FOR COMPARISON OF
COLLEGES (GROUP I) AND OPERATORS (GROUP II)

Item No.*	Group I No. of Cases	Group I Mean Rank	Group II No. of Cases	Group II Mean Rank	Chi-Square**	Level of Sig.***
1	9	23.7	30	18.9	1.325	.250
2	9	30.2	30	16.9	15.998	.000
3	9	21.2	30	19.7	.142	.706
4	9	23.9	30	18.8	1.498	.221
5	9	27.3	30	17.8	5.170	.023
6	9	24.6	30	18.6	2.480	.115
7	9	28.8	30	17.4	7.673	.006
8	9	22.4	30	19.3	.881	.348
9	9	14.1	29	21.2	3.081	.079
10	9	21.2	28	18.3	.588	.443
11	9	19.6	30	20.1	.019	.891
12	9	24.1	30	18.8	1.798	.180
13	9	26.5	30	18.1	4.117	.042
14	9	23.1	30	19.1	.936	.333
15	9	25.0	29	17.8	3.335	.068
16	9	28.3	30	17.5	9.260	.002
17	9	25.1	30	18.5	2.741	.098
18	9	28.9	30	17.3	7.617	.006
19	9	26.6	30	18.0	4.635	.031
20	9	25.2	29	17.7	3.855	.050
21	9	28.0	30	17.6	7.855	.005
22	9	20.8	30	19.8	.059	.809

Item No.*	Group I No. of Cases	Group I Mean Rank	Group II No. of Cases	Group II Mean Rank	Chi-Square**	Level of Sig.***
23	9	29.1	30	17.3	10.195	.001
24	9	30.4	30	16.9	14.607	.000
25	8	25.9	30	17.8	3.601	.058
26	9	29.5	30	17.1	10.679	.001
27	9	28.4	30	17.5	7.585	.006
28	9	27.8	30	17.6	6.120	.013
29	9	25.8	29	17.5	4.069	.044
30	9	28.5	29	16.7	10.407	.001
31	9	32.9	30	16.1	18.919	.000
32	9	25.5	30	18.4	3.446	.063
33	9	26.3	30	18.1	4.834	.028
34	9	25.7	30	18.3	3.862	.049
35	9	27.1	30	17.9	8.373	.004
36	9	25.5	30	18.4	4.094	.043
37	9	23.2	29	18.3	1.885	.170
38	9	22.5	29	18.6	1.032	.310
39	9	20.4	29	19.2	.112	.737
40	9	22.5	29	18.6	2.144	.143
41	9	17.9	29	20.0	.574	.449
42	9	16.7	29	20.4	1.515	.218
43	9	23.2	29	18.3	1.876	.171
44	9	18.6	29	19.8	.102	.749
45	9	20.2	29	19.3	.063	.802

*See Appendix F for item to which "Item No." refers;   **df = 1;   ***Must be $<$ .05 to be significant.

TABLE ILV

RESULTS OF KRUSKAL-WALLIS ONE-WAY ANALYSIS OF VARIANCE FOR COMPARISON OF
COLLEGES (GROUP I) AND ADMINISTRATIVE SUPPORT (GROUP II)

Item No.*	Group I		Group II		Chi-Square**	Level of Sig.***
	No. of Cases	Mean Rank	No. of Cases	Mean Rank		
1	9	9.2	14	13.8	3.181	.075
2	9	12.4	14	11.7	.067	.795
3	9	12.3	14	11.8	.042	.837
4	9	13.7	14	10.9	1.040	.308
5	9	13.6	14	11.0	.946	.331
6	9	13.4	14	11.1	1.133	.287
7	9	15.3	14	9.9	4.307	.038
8	9	13.4	14	11.1	1.143	.285
9	9	9.4	14	13.7	2.357	.125
10	9	17.7	14	8.4	11.154	.001
11	9	11.6	14	12.2	.069	.793
12	9	15.1	14	10.0	3.406	.065
13	9	15.9	14	9.5	5.433	.020
14	9	12.3	14	11.8	.028	.866
15	9	14.1	14	10.7	1.461	.227
16	9	12.3	14	11.8	.038	.846
17	9	11.0	14	12.6	.336	.562
18	9	15.4	14	9.8	4.358	.037
19	9	14.8	14	10.2	3.249	.071
20	9	16.1	14	9.4	6.287	.012
21	9	13.2	14	11.2	.504	.478
22	9	13.4	14	11.1	.714	.398

Item No.*	Group I		Group II		Chi-Square**	Level of Sig.***
	No. of Cases	Mean Rank	No. of Cases	Mean Rank		
23	9	14.3	14	10.5	1.779	.182
24	9	14.1	14	10.6	1.514	.219
25	8	12.8	14	10.8	.542	.461
26	9	13.0	14	11.4	.336	.562
27	9	15.6	14	9.7	4.598	.032
28	9	15.1	14	10.0	3.260	.071
29	9	13.8	14	10.9	1.088	.297
30	9	13.4	14	11.1	.674	.412
31	9	17.8	14	8.2	11.845	.001
32	9	12.6	14	11.6	.107	.743
33	9	12.9	14	11.4	.307	.580
34	9	12.3	14	11.8	.026	.871
35	9	12.6	14	11.6	.133	.715
36	9	11.7	14	12.2	.039	.844
37	9	12.6	14	11.6	.227	.634
38	9	12.8	13	10.6	.750	.386
39	9	13.2	14	11.2	.578	.447
40	9	14.5	14	10.4	3.891	.049
41	9	13.8	14	10.8	1.337	.247
42	9	11.2	14	12.5	.295	.587
43	9	15.2	14	9.9	4.144	.042
44	9	12.6	14	11.6	.113	.737
45	9	14.1	14	10.7	1.607	.205

*See Appendix F for item to which "Item No." refers;   **df = 1;   ***Must be $< .05$ to be significant.

TABLE ILVI

RESULTS OF KRUSKAL-WALLIS ONE-WAY ANALYSIS OF VARIANCE FOR COMPARISON OF
SCHOOLS (GROUP I) AND MANAGERS (GROUP II)

Item No.*	Group I No. of Cases	Group I Mean Rank	Group II No. of Cases	Group II Mean Rank	Chi-Square**	Level of Sig.***
1	7	5.1	12	12.8	9.423	.002
2	7	8.3	12	11.0	1.145	.285
3	12	6.8	12	18.2	18.214	.000
4	12	8.7	12	16.3	8.095	.004
5	8	9.5	12	11.2	.423	.515
6	12	10.7	12	14.3	2.703	.100
7	7	8.6	12	10.8	1.089	.297
8	8	9.8	12	11.0	1.500	.221
9	8	12.1	11	8.4	2.070	.150
10	8	12.2	12	9.3	1.284	.257
11	10	13.9	12	9.5	3.164	.075
12	10	13.2	12	10.1	1.374	.241
13	9	14.4	12	8.5	5.142	.023
14	8	14.2	11	6.9	8.607	.003
15	8	12.5	11	8.2	3.140	.076
16	7	4.9	12	13.0	9.700	.002
17	7	7.5	12	11.5	2.433	.119
18	8	7.0	12	12.8	5.104	.024
19	9	5.7	12	15.0	15.395	.000
20	12	7.0	12	18.0	17.660	.000
21	8	7.8	12	12.3	2.904	.088
22	8	11.9	12	9.5	.910	.340
23	7	11.6	12	9.1	1.276	.259
24	7	11.9	12	8.9	2.170	.141
25	8	8.8	12	11.6	1.215	.270
26	7	8.4	12	11.0	1.147	.284
27	7	7.1	12	11.7	3.169	.075
28	7	6.4	11	11.4	4.233	.040
29	12	7.8	12	17.2	12.908	.000
30	7	6.6	12	12.0	4.343	.037
31	8	9.4	12	11.2	.537	.464
32	7	5.1	12	12.8	9.508	.002
33	7	5.0	12	12.9	11.096	.001
34	7	5.4	12	12.7	8.367	.004
35	7	8.7	12	10.8	.683	.409
36	7	6.4	12	12.1	4.752	.029
37	12	7.9	11	16.5	12.206	.000
38	12	8.8	12	16.2	8.878	.003
39	7	9.1	12	10.5	1.714	.190
40	12	10.0	12	15.0	4.832	.028
41	12	10.0	12	15.0	6.053	.014
42	7	9.1	12	10.5	1.714	.190
43	12	9.0	12	16.0	7.362	.007
44	7	8.9	12	10.7	.603	.437
45	12	9.0	12	16.0	7.881	.005

*See Appendix F for item to which "Item No." refers;   **df = 1;   ***Must be < .05 to be significant.

TABLE ILVII

RESULTS OF KRUSKAL-WALLIS ONE-WAY ANALYSIS OF VARIANCE FOR COMPARISON OF SCHOOLS (GROUP I) AND SUPERVISORS (GROUP II)

Item No.*	Group I		Group II		Chi-Square**	Level of Sig.***
	No. of Cases	Mean Rank	No. of Cases	Mean Rank		
1	7	4.8	7	10.2	6.237	.013
2	7	8.9	7	6.1	1.857	.173
3	12	6.5	7	16.0	13.959	.000
4	12	7.7	7	13.9	6.183	.013
5	8	9.1	7	6.7	1.177	.278
6	12	9.5	7	10.8	.309	.579
7	7	9.4	7	5.6	3.069	.080
8	8	9.1	7	6.8	1.642	.200
9	8	8.8	7	7.1	.544	.461
10	8	8.0	7	8.0	.000	1.000
11	10	9.2	7	8.6	.092	.761
12	10	9.3	7	8.6	.096	.757
13	9	9.9	7	6.7	2.096	.148
14	8	10.0	7	5.7	4.076	.043
15	8	7.9	7	8.1	.015	.904
16	7	6.1	7	8.9	1.585	.208
17	7	5.7	7	9.3	2.946	.086
18	8	5.8	7	10.6	4.959	.026
19	9	5.4	7	12.5	10.228	.001
20	12	6.8	7	15.5	11.938	.001
21	8	7.4	7	8.6	.305	.581
22	8	8.6	7	7.4	.322	.570

Item No.*	Group I		Group II		Chi-Square**	Level of Sig.***
	No. of Cases	Mean Rank	No. of Cases	Mean Rank		
23	7	7.9	7	7.1	.181	.670
24	7	8.4	7	6.6	.801	.371
25	8	6.6	7	9.6	1.759	.185
26	7	6.1	7	8.9	2.030	.154
27	7	5.8	7	9.2	2.523	.112
28	7	6.3	7	8.7	1.293	.255
29	12	8.2	7	13.0	3.420	.064
30	7	6.1	7	8.9	1.744	.187
31	8	8.1	7	7.9	.004	.948
32	7	5.6	7	9.4	3.335	.068
33	7	5.9	7	9.1	2.513	.113
34	7	5.8	7	9.2	2.596	.107
35	7	7.0	7	8.0	.249	.618
36	7	7.4	7	7.6	.022	.881
37	12	7.4	7	14.5	8.550	.003
38	12	8.0	7	13.5	5.172	.023
39	7	7.0	7	8.0	1.000	.317
40	12	8.2	7	13.0	4.846	.028
41	12	8.5	7	12.5	3.750	.053
42	7	7.0	7	8.0	1.000	.317
43	12	7.7	7	14.0	6.514	.011
44	7	6.0	7	9.0	2.600	.107
45	12	7.4	7	14.5	9.450	.002

*See Appendix F for item to which "Item No." refers; **df = 1; ***Must be $< .05$ to be significant.

TABLE ILVIII

RESULTS OF KRUSKAL-WALLIS ONE-WAY ANALYSIS OF VARIANCE FOR COMPARISON OF SCHOOLS (GROUP I) AND OPERATORS (GROUP II)

Item No.*	Group I		Group II		Chi-Square**	Level of Sig.***
	No. of Cases	Mean Rank	No. of Cases	Mean Rank		
1	7	16.4	30	19.6	.534	.465
2	7	29.8	30	16.5	15.198	.000
3	12	13.5	30	24.7	8.083	.004
4	12	18.0	30	22.9	1.477	.224
5	8	27.6	30	17.3	5.872	.015
6	12	23.3	30	20.8	.449	.503
7	7	27.0	30	17.1	5.013	.025
8	8	22.2	30	18.8	1.050	.306
9	8	19.2	29	18.9	.006	.938
10	8	19.5	28	18.2	.111	.740
11	10	22.0	30	20.0	.291	.590
12	10	18.8	30	21.1	.359	.549
13	9	27.4	30	17.8	5.412	.020
14	8	27.9	30	17.3	6.194	.013
15	8	23.8	29	17.7	2.298	.130
16	7	24.4	30	17.7	3.571	.059
17	7	16.9	30	19.5	.404	.525
18	8	17.0	30	20.2	.543	.461
19	9	16.0	30	21.2	1.570	.210
20	12	15.7	29	23.2	3.693	.055
21	8	22.2	30	18.8	.971	.325
22	8	23.6	30	18.4	1.479	.224
23	7	22.7	30	18.1	1.665	.197
24	7	23.9	30	17.9	3.357	.067
25	8	17.6	30	20.0	.344	.557
26	7	19.9	30	18.8	.089	.766
27	7	23.4	30	18.0	1.850	.174
28	7	21.6	30	18.4	.594	.441
29	12	28.0	29	18.1	6.041	.014
30	7	24.9	29	17.0	4.628	.031
31	8	22.4	30	18.7	1.133	.287
32	7	18.7	30	19.1	.008	.928
33	7	19.6	30	18.8	.047	.829
34	7	19.1	30	19.0	.000	.982
35	7	21.8	30	18.4	1.390	.238
36	7	20.4	30	18.7	.240	.624
37	12	14.8	29	23.6	5.465	.019
38	12	18.0	29	22.2	1.212	.271
39	7	21.6	29	17.8	1.136	.286
40	12	17.0	29	22.7	3.016	.082
41	12	17.4	29	22.5	2.989	.084
42	7	19.1	29	18.3	.077	.782
43	12	15.1	29	23.4	4.808	.028
44	7	18.6	29	18.5	.000	.983
45	12	17.0	29	22.7	2.352	.125

*See Appendix F for item to which "Item No." refers; **df = 1; ***Must be $< .05$ to be significant.

TABLE ILIX

RESULTS OF KRUSKAL-WALLIS ONE-WAY ANALYSIS OF VARIANCE FOR COMPARISON OF
SCHOOLS (GROUP I) AND ADMINISTRATIVE SUPPORT (GROUP II)

Item No.*	Group I No. of Cases	Group I Mean Rank	Group II No. of Cases	Group II Mean Rank	Chi-Square**	Level of Sig.***
1	7	5.6	14	13.7	8.915	.003
2	7	9.6	14	11.7	.631	.427
3	12	10.1	14	16.4	4.976	.026
4	12	10.6	14	16.0	3.606	.058
5	8	11.9	14	11.3	.045	.832
6	12	13.3	14	13.7	.023	.880
7	7	13.1	14	9.9	1.485	.223
8	8	13.1	14	10.6	1.320	.251
9	8	11.8	14	11.3	.032	.858
10	8	16.9	14	8.4	9.096	.003
11	10	12.9	14	12.2	.082	.774
12	10	14.1	14	11.7	.994	.319
13	9	16.4	14	9.1	6.996	.008
14	8	14.0	14	10.1	2.242	.134
15	8	13.4	14	10.4	1.124	.289
16	7	7.8	14	12.6	2.982	.084
17	7	6.4	14	13.3	6.108	.013
18	8	9.2	14	12.8	1.653	.199
19	9	8.8	14	14.1	3.697	.055
20	12	12.4	14	14.5	.562	.453
21	8	9.6	14	12.6	1.190	.275
22	8	14.1	14	10.0	2.233	.135
23	7	10.7	14	11.1	.025	.875
24	7	10.6	14	11.2	.055	.814
25	8	8.2	14	13.4	3.376	.066
26	7	6.7	14	13.1	5.309	.021
27	7	12.8	14	10.1	.996	.318
28	7	11.6	14	10.7	.124	.724
29	12	14.5	14	12.6	.441	.507
30	7	10.1	14	11.5	.247	.620
31	8	12.3	14	11.0	.266	.606
32	7	8.2	14	12.4	2.346	.126
33	7	8.6	14	12.2	1.780	.182
34	7	7.3	14	12.9	4.101	.043
35	7	9.6	14	11.7	.593	.441
36	7	9.0	14	12.0	1.233	.267
37	12	9.5	14	16.9	7.429	.006
38	12	11.7	13	14.2	.805	.370
39	7	13.6	14	9.7	2.480	.115
40	12	12.8	14	14.1	.285	.594
41	12	15.2	14	12.0	1.358	.244
42	7	12.1	14	10.4	.642	.423
43	12	12.8	14	14.1	.242	.623
44	7	12.6	14	10.2	.866	.352
45	12	14.2	14	12.9	.263	.608

*See Appendix F for item to which "Item No." refers;   **df = 1;   ***Must be $< .05$ to be significant.

TABLE L

RESULTS OF KRUSKAL-WALLIS ONE-WAY ANALYSIS OF VARIANCE FOR COMPARISON OF
ALL EDUCATION (GROUP I) AND ALL BUSINESS (GROUP II)

Item No.*	Group I No. of Cases	Group I Mean Rank	Group II No. of Cases	Group II Mean Rank	Chi-Square**	Level of Sig.***
1	39	53.6	93	71.9	6.615	.010
2	40	81.9	93	60.6	10.399	.001
3	45	53.3	93	77.3	12.588	.000
4	43	58.8	93	73.0	4.194	.041
5	41	70.7	93	66.1	.425	.514
6	45	69.9	93	69.3	.008	.929
7	40	74.1	92	63.2	2.452	.117
8	40	62.3	93	69.0	1.360	.244
9	41	67.3	90	65.4	.081	.776
10	39	70.4	91	63.4	1.027	.311
11	43	71.4	93	67.2	.460	.498
12	42	64.9	93	69.4	.419	.517
13	42	73.7	92	64.7	1.644	.200
14	41	84.1	91	58.6	13.658	.000
15	40	70.7	91	63.9	1.077	.299
16	39	70.5	93	64.8	.721	.396
17	39	66.5	93	66.5	.000	1.000
18	41	68.5	93	67.1	.039	.843
19	41	62.3	93	69.8	1.178	.278
20	45	61.4	92	72.7	2.799	.094
21	40	65.9	93	67.5	.055	.814
22	40	65.3	93	67.7	.121	.728
23	39	72.8	93	63.8	2.314	.128
24	39	74.4	93	63.2	3.981	.046
25	39	68.3	93	65.8	.132	.716
26	39	68.1	93	65.8	.114	.736
27	39	78.8	93	61.4	6.415	.011
28	39	79.1	92	60.4	7.299	.007
29	44	77.4	92	64.3	3.452	.063
30	39	74.0	92	62.6	2.805	.094
31	40	80.1	93	61.4	8.599	.003
32	39	66.4	93	66.5	.000	1.000
33	39	67.1	93	66.3	.014	.907
34	39	64.5	93	67.4	.179	.672
35	39	71.1	93	64.6	1.282	.258
36	37	64.4	93	65.9	.059	.808
37	44	52.4	91	75.5	14.908	.000
38	44	58.2	91	72.8	5.010	.025
39	39	56.9	92	69.8	4.556	.033
40	44	59.8	92	72.7	5.114	.024
41	44	57.4	92	73.8	7.988	.005
42	39	51.7	92	72.1	13.405	.000
43	44	58.8	92	73.2	4.866	.027
44	39	57.1	92	69.8	3.547	.060
45	44	59.6	92	72.8	4.292	.038

*See Appendix F for item to which "Item No." refers;   **df = 1;   ***Must be < .05 to be significant.

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