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A study : word processing needs of business organizations in Worcester, Massachusetts area.

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A STUDY: WORD PROCESSING NEEDS OF BUSINESS ORGANIZATIONS

IN WORCESTER, MASSACHUSETTS AREA

A Dissertation Presented

By

VIVIAN A. PERSONS

Submitted to the Graduate School of the
University of Massachusetts in partial fulfillment
of the requirements for the degree of

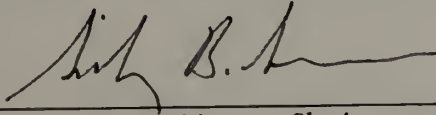DOCTOR OF EDUCATION

May 1986

School of Education

A STUDY: WORD PROCESSING NEEDS OF BUSINESS ORGANIZATIONS

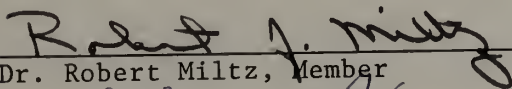IN WORCESTER, MASSACHUSETTS AREA

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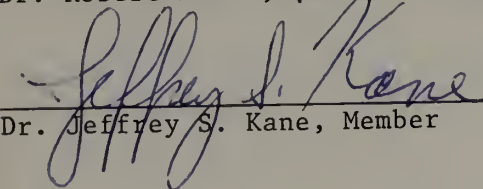
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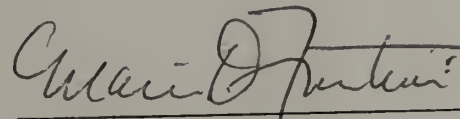
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ABSTRACT

A Study: Word Processing Needs of Business Organizations

in Worcester, Massachusetts Area

May 1986

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The role of the secretary has changed due to the automated office, and word processing is the core of this change. The purpose of this study was to obtain information via survey from Worcester, Massachusetts area business organizations as to their skill requirements for entry-level word processing operators. Thirty word processing supervisors comprised the selected sample.

This data identified the word processing entry-level operator skills that were found inadequate to the businesses operating in the Worcester area. Such information would assist business educators in planning and implementing curricula for word processing education: the ultimate goal to place better qualified applicants.

The investigation was done in the form of a three-page question-naire evaluating such subjects as: skills, equipment, training, pre-employment testing, the value of post-secondary education, and included three questions:

o   Other skills or knowledge which should be taught to

future word processing operators.

o   How word processing operator training could be improved.

o   Career advancement possibilities.

The data was statistically compiled using the Statistical Package for the Social Sciences. A data summary was sent to participating businesses and post-secondary schools involved in teaching word processing.

There were 21 different kinds of word processing equipment used by the businesses; shorthand was not required by 90% of the organizations; interpersonal skills were important to 86% of the firms; handwritten copy was the most common method of input.

Suggestions for improving word processing operator training included: business ethics, data processing and personal computer skills, geography, and the development of the ability to think. Also: better vendor training, more hands-on training, seminars, field trips, more real-life work, better basic secretarial skills, more stress on machine transcription, and a realistic view of the working world were indicated.

Regarding career possibilities, the majority were within the realm of the word processing center.

Recommendations included improving current textbooks and workbooks, utilizing simulations, in-basket assignments, audio-visuals, slides, multi-learning systems, visits to word processing centers, workshops, and human relationship skills training.

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CHAPTER I

INTRODUCTION

Word Processing came into existence in the mid-1960's. This new
technique changed the office structure from the traditional office to
a systems approach and made the processing of words more productive and
less costly.

Word Processing is defined "as an automated, computerized system
in which letters, records, etc. are prepared, edited, stored, or repro-
duced, as by using an electronic typewriter" (Webster, 1980, p. 1637).

This automation has changed many things: the way people work, the
workplace environment and the management of information. It necessitat-
ed formulating new and revised job descriptions and required adaptation
to the new technology and to differences in human office relationships.
Resistance to change had to be overcome. This changed office increases
output and reduces costs.

The basic steps of the word processing concept are: to create, to
edit, to save, to move, to remove, and to print. The word processing
operator is able to work for more than one principal creating an effi-
cient workflow. This technique varies dramatically from the tradition-
al secretarial role.

A resistance to change has been a major obstacle in offices where
traditional office structure has been maintained for many years and the
staff accustomed to working in a routine manner on the same equipment.
The present need is for flexibility and acceptance of the changing of-
fice. Computer technology is not only changing rapidly but there is

little standardization of the hardware or software of various companies. This is a challenge in the office, and poses a problem to business educators to provide qualified applicants to businesses and professions in their area. The problem has been to revamp the curriculum successfully so the graduates will be trained to fill the positions waiting for them upon graduation.

Some traditional concepts need to be mainstreamed into the current secretarial curriculum, but the problem is to identify the outdated and determine what should be substituted in terms of the selected geographic area served. The study done by the International Word Processing Association found:

> Today word processing is changing office skill re-
> requirements and career opportunities. Business teachers
> need to understand both the skill requirements for employ-
> ment and the many varied career opportunities. The follow-
> ing basic skills and characteristics are mentioned time and
> time again by current and future employers: language skills,
> keyboarding skills, listening skills, equipment orientation,
> ability to cope with change, ability to learn on the job,
> and a strong work ethic (Reference Guide, 1980, p. 2-3).

This changing office presents many issues such as: ergonomics, lighting, new careers, health hazards, keeping of productivity records, the facile adaptability of the PC generation. Each of these problems affect office operation, which in turn affects the teaching of word processing education. These issues are added to the problems created by rapid design changes in automated office equipment. Consequently the word processing curriculum should provide resources for the student to develop decision making skills and administrative capacities, as well as to encourage flexibiilty and adaptability to the new technology (Quibble, 1977, p. 25, 26).

In addition to these new skills, it will be necessary to retain traditional instruction in language arts, typing, proofreading, and secretarial procedures.

Statement of the Problem

The problem of this study was to do an analysis of the skills needed for Word Processing operators as identified by the business organizations in the Worcester, Massachusetts area.

This data will provide educational institutions with current information for preparing curricula to train students for entry-level word processing positions, and to provide business with better qualified word processing applicants. This approach is not only theoretical but practical as well.

Automated office equipment is changing so rapidly it is necessary to change office curricula accordingly. Word processing is the core of the new office revolution. It is a new field expanding with new technology.

An objective of this study was to analyze the competencies needed by selected businesses and professions in a wide range of occupations in the Worcester, Massachusetts area where the students are preparing to seek employment. This data should be helpful to business educators to plan up-to-date curricula.

The word processing market is expanding by leaps and bounds; consequently it is important for businesses to identify the skills needed and to call attention to the major weaknesses found with incoming applicants.

Purpose of the Study

The primary question for this study was to analyze the word processing operator skills as viewed by Worcester, Massachusetts area business organizations. The researcher sought data for the needs assessment through a questionnaire submitted to word processing supervisors in word processing centers. This information will then be recommended to Worcester business educators interested in developing word processing curricula to fill the needs of the area.

The questions to be answered are:

1. What are the major weaknesses of the word processing operators?

2. What kinds of word processing equipment are being used and is it necessary to have training on specific equipment or merely to have a general knowledge of word processing operation?

3. Is shorthand required?

4. Are there sufficient liberal arts subjects in the curriculum?

5. Are word processing operators having difficulty with language arts?

6. Should problem solving competencies be developed?

7. How important are interpersonal skills in the office?

8. What kind of pre-employment test is administered?

9. What kind of input is given word processing operators after they are employed?

10. How valuable is post-secondary education to word processing operators?

11. How can word processing operator training be improved?

12. Are there other skills or knowledge which should be taught to future word processing operators?

13. What are the career advancement possibilities for word processing operators?

Need for the Study

The necessity for this feasibility study has been expressed by managers of area businesses as a means of improving the competencies of entry-level word processing operators.

There have been a number of studies done for other geographic areas but none specifically for Worcester, Massachusetts. It would be useful to unite schools and business in a meaningful partnership for better communication and a better relationship.

The good way to improve an operational system is to have a feasibility study conducted to determine whether changes should be made and what steps should be taken to effect them. To keep up to date in this post-industrial age it is necessary to be flexible and adapt to changes as needed.

Limitations

1. The study will examine only changes in office procedure due to the introduction of word processing. There are other factors changing office operation such as: changing technology, training, company organization. These will not be surveyed.

2. This study is limited to the Worcester, Massachusetts area needs of business organizations in relation to word processing entry-level positions, and what businesses have found to be lacking in the employees filling these positions.

3. No attempt has been made to solicit the input of the business educators but at the conclusion of the research business educators will be approached and given the results of the survey.

Delimitations

1. This study is delimited to 30 supervisors involved in word processing centers in the Worcester, Massachusetts area. The Central Massachusetts Chapter of the Association of Information Systems Professionals membership will comprise the bulk of the sample.

2. The survey will be conducted solely by the author through the questionnaire.

3. Business educators will not be involved until after the research has been completed.

4. After the data has been analyzed, business educators from the Worcester, Massachusetts area will be approached by the author and given a summary of the research data.

Definition of Terms

A glossary of word processing terminology is included in Appendix A.

Organization of the Study

The paper is organized into five chapters: Chapter I will comprise the Introduction; Chapter II will present a review of Related Literature; Chapter III will consist of a Summary of the Research Process; Chapter IV will contain findings; Chapter V the Summary, Recommendations, and Conclusions.

C H A P T E R   I I

REVIEW OF THE RELATED LITERATURE

The review of the literature revealed critical problems pertain-
ing to word processing such as: ergonomics, lighting, the facile adapta-
bility of the PC generation, health hazards, word processing classifica-
tions, curriculum, and word processing in the future. Each of these
problems affecting office operation, affect the teaching of word proces-
sing education. A revision in the curiculum is necessary to provide the
student with the necessary skills for the new technology (Quibble, 1977,
p. 25, 26). The literature revealed a new set of titles and descriptions
in the field of word processing (Assoc. Inf. Prof. Job Titles, 1984).
The literature disclosed that the traditional office is gone forever
and more changes will continue as new technology is designed.

The review of the literature is divided into seven sections:
(1) History; (2) Word Processing Defined; (3) Issues of Word Processing:
Ergonomics, Lighting, PC Generation, Health Hazards; (4) Curriculum;
(5) Word Processing Classifications; (6) Word Processing in the Future;
and (7) Conclusion.

History

It is interesting to look at the history of the computer to see
how the technological explosion originated. The historical background
dates from 86 B.C. when the Greeks had artificial calculation for navi-
gation purposes. The Romans used pebbles, glass, bone, and ivory for
counters. The Mayans used grains of corn strung on threads in rows of

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ten. All the devices were based on the ten fingers of the human hand.
Today this system is known as the abacus--the computer of our ancestors.
Abacus calculating systems were used through the Dark and Middle Ages
(Herbert, 1980, p. 56, 57).

In 1654 Blaise Pascal, the French philosopher and mathematician,
built a gear-based machine for adding numbers. His "La Pascaline" was
impractical and too advanced for the times (Herbert, 1980, p. 56, 57).

In 1694 Gottfried Willhelm von Leibniz, the German inventor of the
calculus, built a machine called a "step reckoner." It could add, sub-
tract, multiply, divide, and do square root (Herbert, 1980, p. 56, 57).

In 1835, Charles Babbage built an "analytical engine" which combined
arithmetical and logical functions as well as stored partial answers for
later use (Herbert, 1980, p. 56, 57).

In 1890 Hans Hollerith put together a census system using punch
cards for storing data. Hollerith with others formed the International
Business Machines Corporation (Herbert, 1980, p. 56, 57).

In agreement with IBM, Howard Aiken built the Mark 1, the automa-
tic digital computer. This operated electromechanically with noisy re-
lax switches (Herbert, 1980, p. 56, 57).

John Mauchly and J. Presper Eckert, at the University of Pennsyl-
vania, developed the ENIAC, the first fully electronic computer. It
was based on the vacuum tube and incurred many problems due to frequent
breakdowns and high costs (Herbert, 1980, p. 56, 57).

In 1960 transistors and miniaturization took over and connections
were sealed in tiny semi-conductor crystals (Herbert, 1980, p. 56, 57).

The computer revolution began when the Intel Company put a computer on Chip 8080 (Herbert, 1980, p. 56, 57).

In 1974 Ed Roberts of Micro Instrumentation and Telemetry Systems in Albuquerque, New Mexico introduced the Altair computer kit based on the 8080 for the moderate price of $420 (Herbert, 1980, p. 56, 57).

The first computer revolution began about 25 years ago and these new machines quickly altered the worlds of science and engineering. In the mid-1960's the second computer revolution applied the powers of the machine to business numbers. Word processing is the third computer revolution. It began in the sixties and skyrocketted in the early eighties. Many experts feel this third revolution may have a greater effect on business than the preceding numbers-oriented revolutions (Poynter, 1982, p. 8, 9).

<div align="center">Word Processing Defined</div>

In the literature there are many definitions for word processing. The Association of Information Systems Professionals define word processing as "a system of trained personnel, specific procedures, and automated equipment that provides more efficient and economical business communications" (Reference Guide, AISP, 1980).

Kleinschrod, Kruk, and Turner define word processing as a system which can prepare business letters, reports, legal documents, technical papers, and other textual output, and that it "automates the procedures, professionalizes the personnel, improves the quality of work, and saves not only money, but equally precious commodity time" (Klein-

schrod, Kruk, Turner, 1980, p. viii).

They also state that rote chores are done automatically, rapidly, and that production of over 500% can be gained in addition to saving many thousands of dollars in organizational overhead each year. Word processing is "a highly organized system of efficient and economical combinations of peoples, procedures, and equipment." According to these authors there is no single uniform definition, but most definitions include these central elements:

o The automation of secretarial work.

o The use of machine dictation and automated typing equipment.

o Specialization of office functions and tasks.

o A systems approach to the communications process.

o The transformation of information into readable form through the management of procedures, equipment, and personnel.

Another definition found in the literature says word processing "only applies to a small segment of the total picture of information processing . . . the term word/information processing more appropriately encompasses the new technologies available today (Bergerud & Gonzalez, 1981, p. 2).

In explaining word processing, Peter McWilliams compares the word processor to the typewriter:

When you type on a typewriter, the words are transferred directly to the paper. When you type on a computer, the words appear on a video screen. If you make a mistake on a typewriter, and catch it before putting too many characters between you and the mistake, you have several correcting options . . . eraser, paint, white carbon paper. To make a cor-

rection on a word processor, you press the delete
button. When you want to make a change in a docu-
ment, you move the cursor to the point in the docu-
ment where the change is to be made, and make it
(McWilliams, 1981, p. 39).

Anderson and Trotter's definition is basically the same but is ex-
pressed a little differently. "Word processing is a new systematic
method of converting ideas into written communications. The idea was
to apply new technology, improved dictation systems, advanced power-
typing to an overwhelming modern problem in the realm of paperwork"
(Anderson & Trotter, 1984, p. 9).

A simplified definition is provided in the literature by Mary Jane
Ornelas Walter: "Word processing, with its fundamental components, is
defined as a new office structure to handle paper flow efficiently"
(Walter, 1978, p. 13).

The definition of word processing explains the tremendous impact
this technology has made on business education in a short period of
time. Business educators are faced with the problem of revising the
curriculum to prepare students for the ever-changing business office
(Moody, 1983).

Issues of Word Processing

The literature concerning ergonomics, lighting, the facile PC
generation, health hazards of the video terminal, word processing
classifications, the future of word processing will be discussed as to
their impact on word processing curricula.

Ergonomics

Ergonomics is a new term which has come into computer terminology. It is a science investigating the interaction of workers with equipment and machines. The objective ergonomics is to create a pleasant and challenging work environment for job satisfaction with greater productivity. Louis Harris (1983), in his survey, found that 54% of office workers indicated that their productivity was influenced by the chair used.

In planning the layout of the word processing center it is important to consider not only space but electrical power and accoustical control. Also, building codes must be complied with. Good ventilation and air conditioning are important in a word processing center. The new equipment makes more noise and operates at a faster speed. In addition, extreme changes in temperature and humidity cause problems with the operation of the memory machines (Mason, 1980).

Room partitions no longer extend to the ceiling, creating "work stations" rather than "offices." This "landscape" design provides privacy with a feeling of open space. The furniture of the new "landscaped" office is functional, but streamlined for the new automated office of which the word processing center is a part (Mason, 1980).

Lighting

Lighting is another important issue to consider while planning the automated office. Task/ambient lighting is an alternative to glaring overhead lighting or sunlight. This system combines the two types of lighting in a single fluorescent fixture. Most of the light shines

downward on the task but the top of the fixture is open to diffuse the
light upward and brighten the surroundings (Bernstein, 1982).

Glare symptom is also to be considered. Glare can cause eyestrain,
eye itchiness, eye fatigue, blurred/double vision, headaches, indiges-
tion, and body fatigue (Bernstein, 1982).

The comfort and performance of employees are affected by the
physical climate of temperature, humidity, air circulation, color,
lighting, and sound. In planning work stations, thought should be given
to the present productivity and job satisfaction of their word proces-
sing operators, as well as to the possibility of adapting the equipment
to growing and changing needs in the future.

PC Generation

Another issue mentioned in the literature is the PC generation.
The schools are preparing a new generation of computer students; many
families own computers. Budget-conscious school committees do not
seem reluctant to spend when the expense is computer related. Also,
large computer companies are donating their equipment to the schools.
However, a question that must be addressed by business and educators
is, what will happen in ten to fifteen years when this new generation
hits the workforce? The literature did not address this question.

Health Hazards

Much publicity has been given to the health hazards of using the
cathode ray tube, but whether video display terminals are harmful or
not depends on which research is studied. It appears that it is not

the occasional user who claims either physical or psychological prob-
lems, but the operator who uses the video terminal for the full eight-
hour day.

It is estimated that seven million to ten million people use these
"tubes" every day to keep medical and financial records, to write arti-
cles, to book airline reservations, to play video games, and to do many
other things (Pechter, 1983).

Problems in pregnancy have been documented in several instances;
however, it is questionable whether the VDT's leak sufficient radia-
tion to be harmful. The National Association of Working Women has
started a national campaign to alert women to potential health hazards.
However, the National Institute of Occupation Safety and Health reports
that their tests show that the risk from radiation is negligible.

Another organization, Nine to Five, has recommended the following:

o Pregnant workers should have the right to transfer away
  from VDT work without loss of seniority.

o Metal shields should be added to VDT equipment.

o VDT workers should be allowed a 15-minute break every
  two hours and a break for every hour of intense use.

o Continuous use of VDT's should be limited to four hours
  a day.

o Glare reducing devices, regular eye exams, and adjustable
  furniture should be provided to the workers.

o All VDT's should be tested regularly for X-Ray emissions
  (Pechter, 1983).

The National Academy of Science's Research Council conducted a
two-year survey and did not find evidence that low-level radiation
emitted by the television-like devices caused lasting visual problems.

However, they did report that poor quality equipment and bad workplace design could contribute to headaches, fatigue, and stress reported by many workers using VDT's. It was mentioned that poorly constructed, in-expensive VDT's made for home television viewing, rather than pro-longed, close-up viewing, could cause complaints of blurred vision, tired eyes, and headaches.

The Wright Line, Inc. of Worcester, Massachusetts conducted an opthalmological study. Their study was carried out by an opthalmolo-gist on the clinical surgical staff at the University of Massachusetts Medical School in conjunction with an office automation analyst for Wright Line. Their study did not find that the use of display termin-als caused serious eye damage, but that constant use might aggravate visual irregularities already present. The study showed no permanent or temporary eye damage for those who used VDT's but it did show that the incidence of eye strain increased for those users who have lightly pigmented irises, minimal uncorrected refractive errors, mild muscle imbalances, and decreased tear production. Also heightened anxiety levels and poor work environments were said to contribute to eye prob-lems.

The Wright Line study recommended yearly opthalmological examina-tions for operators using the VDT more than 50% of their workday. They also suggested gray tinted lenses to ease eyestrain. Incidentally, the Wright Line company manufactures ergonomic computer support furniture and filing systems (Words, Oct/Nov, 1983, p. 13).

In addition to gray tinted lenses, a glare filter, which can be

attached to the terminal screen, is made by Computer Products, Inc. of Newington, Connecticut. For operators who have a problem with tear production, Dr. Dennis Arinella, Ophthalmologist and Clinical Assistant Professor at the University of Massachusetts Medical School, recommends a soothing solution for use as an artificial tear and lubricant relief of symptoms due to dry eye syndrome (Words, Oct/Nov, 1983, p. 13).

These issues pertaining to word processing should be made known to the word processing student during the overview course, Introduction to Word Processing.

Word Processing Classifications

The field of word processing has opened a whole new field of work. Job Titles and Descriptions for Word Processing Personnel, compiled by the Association of International Systems Professionals, is found in Appendix E.

Computers thirty years ago caused fear that because of them jobs would be lost; however, during the past five years this attitude has changed. Now in 1986 there is a demand for computer knowledge; computer sales are at a high for both business and home--and it is difficult to keep up with the advances (McWilliams, 1981, p. 66, 67).

Because the traditional role of former secretaries in the paper-oriented office is changing the way many jobs are being done, job classifications will also change, with many employees assuming the role of administrative assistants (Quibble, 1977, p. 25, 26).

It is interesting to note in the offices, as well as in the literature, word processing reference contains no male/female distinction!

The stereotyped female secretary is disappearing and there will be a change in the social climate in the future to include both sexes in office job classifications (Mason, 1980).

Curriculum

Considering word processing technology and related issues, how should the traditional secretarial curriculum be changed? What should be eliminated and what should be added to include word processing? The literature on word processing curriculum is sparse, and there is practically none concerning post-secondary levels of education. There were periodicals found on specific issues relating to the function of word processing, and their addition to the curriculum, but an overview of word processing for post-secondary education was lacking.

Peter Meggison in his dissertation on word processing curriculum in the Boston area reports: "Even though word processing was first introduced in 1962, it was not until the early 1970's that business education literature indicated concern for implementing word processing concepts in office education programs" (Meggison, 1983).

As pointed out by Rita C. Kutie, "Only now as the eighties are underway are business educators beginning to recover from the shocking impact word processing has made on the business office (Kutie, 1981, p. 38).

The increasing help-wanted ads for word processing operators or for clerical positions where word processing is specified as a required skill, as well as the many temporary employment agencies seeking such applicants, is an indication of the importance of including word pro-

cessing in the business education curriculum.

How is word processing to be included in the curriculum? What do the offices require for competencies? Is hands-on experience necessary on more than one type of hardware? These are only a few questions to be considered by business educators.

In the Delta Pi Epsilon Journal the following suggestions for improving employability of graduates are listed:

o improve basic skills;

o develop greater accuracy;

o place less emphasis on machine skills;

o place more emphasis on skills in reading, spelling, computations, and communication;

o increase standards in general;

o improve proofreading skills; and

o develop desire to put forth best efforts and have pride in the work done (Hammer, 1975, Delta Pi Epsilon Journal).

It is stated in Callen and Holen's (1982) literature that during the following 20 years schools of business will graduate tens of thousands of students in business disciplines, but many will be ill-equipped to function in corporations in the twenty-first century because they will be computer illiterates. They state:

> The problem of computer illiteracy is a serious problem which is superficially treated in most curriculums . . . At this time schools of business must seriously examine the present curriculums in order to eliminate computer illiteracy. In the long run, if we undertake and commit to a program in which computer literacy is one of the objectives, we will make a significant investment that will maintain our technological superiority in world markets.

Meroney (1979) states that there are seven key areas of skills an

entry-level word processing operator should have. They are:

- o typing skills,

- o ability to transcribe dictation,

- o proofreading skills,

- o grammatical skills,

- o proficiency in use of resource materials,

- o mathematical skills, and

- o the ability to understand the concepts and theory of
     word processing.

Meroney states that machine transcription has replaced the use of shorthand, that proofreading is vital to the accuracy of work performed in word processing, that grammatical skills are a key qualification for any applicant, and that necessary reference sources are a dictionary, thesaurus, and secretaries' manuals (Meroney, 1979).

Meroney states that the mathematics skill is necessary for setting up charts, formatting typed pages, and for maintaining production statistics (Meroney, 1979).

Meroney concludes with, "Knowledge of concepts and theory of word processing is beneficial to any individual in the business world" (Meroney, 1979).

Mayer (1982) offers the idea that oral communication skills should be built in the business college curriculum as they are required for success in business professions. The course content suggested is as follows:

- o orientation to business and professional oral
     communication,

o presentation design,

o delivery techniques,

o audio-visual aids,

o question-answer technique,

o interviewing,

o dictation (word processing technology and equipment),

o group processes,

o conference planning, and

o conference management.

In "Transition to Office Automation Training" it is mentioned that:

> Public educational institutions like community colleges
> can provide training to the general public since they
> often cost less than other alternatives. Their new
> programs in information processing will utilize exist-
> ing facilities more fully, filling the gap caused by
> declining enrollment in other fields of study . . .
> These institutions are being challenged daily to use
> up-to-date equipment and to provide an adequate amount
> of hands-on training (Lake, 1983, p. 41, 42).

These challenges are mentioned by Lake, but, how they can be integrated into curriculum is not addressed. The author does say that "We can per-haps meet these challenges by supporting the development and implementa-tion of new training methods" (Lake, 1983, p. 41, 42).

Carol Asplund, in "Easing Word Processing into College Curriculum," views the revision process at the community college level as slow, es-pecially in the acquisition of funds for proposed changes; word proces-sing competencies first had to be identified (Asplund, 1978, p. 37-40).

The Illinois Office of Education identified seven major competency areas as follows:

o concepts, processes, and careers in word processing,

o verbal communications,

o equipment related skills,

o planning, organizing, decision-making skills,

o supervision skills, and

o business attitudes/personal development
(Asplund, 1978, p. 37-40).

Identifying the needed competencies is the first step in making curriculum revision.

In a Denver, Colorado study high priorities listed were oral communications, grammar skills, and getting work done on time, under pressure and with interruptions (Asplund, 1978, p. 37-40).

Asplund recommends that "business educators should be aware of the changing nature of office work and should determine the job behaviors to be emphasized in their curriculum on the basis of the jobs that will be available for students" (Asplund, 1978, p. 37-40).

Muscat claims that there should be a complete overhaul by business educators of word processing curriculum, which is the hub subject around which the automated office revolves, in order to adjust to the new automated office needs (Muscat, 1980, p. 10).

Ellis questions: How is word processing to be included in the curriculum? What do the offices required for competencies? Is hands-on experience necessary on more than one type of hardware? According to Ellis these are only a few questions challenging the business educators (Ellis, 1982).

Moon (1981), in "Teaching Word Processing . . . A Realistic, Job

Approach," claims that a complete preparation for the word processing function in a modern business office requires underlying skills such as basic language, typing, machine transcription, and rough draft copy.

Moon also states, "Education is the best means for which individuals and society can adjust to continued technological changes. Manpower needs in a technological society can be met only through education" (Moon, 1981).

In view of what the related literatures says, WHAT CURRICULUM CHANGES ARE NEEDED AND HOW WILL WE GET THEM?

Word Processing in the Future

Forecasting the future of word processing is uncertain at best, but to predict what is best to include in the curriculum is to consider what the office of the future might be. The literature on the future office indicates that future offices will do the following:

o be more flexible and movable,

o stress energy conservation,

o use many new "gadgets,"

o have more equipment at each work place,

o use satellite space communication capabilities,

o be interactive and holistic in basic practices,

o have less dependency on paper, and

o use work teams (Kleinschrod, Kruk, Turner, 1980).

To add to this prediction of the future is a statement in the Phi Delta Kappan: "Our technological and economic advances are beyond the belief of common man and beyond the recognition of scholars" (Phi Delta

Kappan, Oct., 1967).

An interesting theory is present on the uncertainty of the future of home computers. "However, the generation of children now being reared on electronically programmable toys will no doubt be psychologically ready to carry this development forward" (Sobel, 1981).

From "Reckoning with the Future":

> More profound changes have taken place in the past 40 years than in the previous six centuries collectively. Because of this accelerated rate of change, predicting the future today is much more difficult than it was in the year 1900. On the other hand, today it is that much more important to be able to predict the future. Predicting the future should not conjure up images of a crystal ball, but rather, the things that are going to occur that will have implications on the kind of problems managers will face (Smith, 1983).

The kinds of problems managers will face also will be those the business educator will face planning the curriculum (Poynter, 1982).

The theory that tomorrow's office will feature "white-collar workstations" with the objective to improve office productivity using all the tools of technology is supported by some of the literature (Glover & Purchase, 1977; Poynter, 1982; Graham, 1983).

Work stations will deal with communications, information handling, data analysis, personal assistance, and task management. Written and spoken communications will include word processing and telephones, all part of the electronic network (Poynter, 1982).

The traditional office concept is gone and office automation has stepped in to increase white-collar productivity for a savings in costs and time. Many people find computers a mystery and resist learning to use them for their daily operation. But making clerical improvements

does not compare to having executives and office professionals work more effectively (Boyer, 1981). Workshops for executives and office professionals in the use of new automated equipment for cutting operating costs have started in the larger businesses.

In the future it will be more important to match jobs and applicants who not only have the right skills, but whose attitudes will encourage job satisfication and cooperation within the office staff (Rogalsky, 1982).

It is also interesting to note that "experts agree that the current objectives of word processing will change by 1985 (Scriven, 1981).

To further affirm this theory, Kleinschrod, Kruk, and Turner (1980) state, "Of the three basic elements of word processing--people, procedures, and equipment--people are undoubtedly the most important."

There are endless future job possibilities in the word processing field for the individual who is willing to adapt to change. Still, "It is important for students to understand that automation can never replace people" (Kleinschrod, Kruk, Turner, 1980).

Conclusion

In studying the literature relating to word processing and its application to curriculum, it is apparent that traditional business education methods and materials need to be changed to adjust to the sophisticated technology. The paperless office concept is already in use in New York City and Washington, D.C. (Perkins, 1980).

To train office workers for the new automated office it is necessary to learn what new skills are needed by the offices in the area

serviced. In addition, it is necessary to learn what basic skills are lacking in the applicants seeking the positions. Skills in decision making, written and oral communication, problem solving, positive work ethics, and attitude are all helpful to students entering the modern office.

Business educators face a tremendous challenge as they seek to replace old methodology with new and emerging technology. The reward of incorporating new strategies which complement the older ideas will be qualified students who are prepared for the future (Moody, 1983, p. 9).

To further document the radical changes in the office environment, Glover and Purchase (1977) write that we need to prepare for critical office changes in the office of the fuure and that it will be dramatically changed from the office of today.

"Transition to Office Automation Training" suggests that specialized training will be needed to increase the productivity of an operator. The article predicts that training computer-assisted instruction will replace the self-paced manuals (Lake, 1983, p. 33, 34).

Callen states, "The age of electronic information is here. It is not an Orwellian concept but rather a phenomenon caused by a rapid transfer of technology in micronics. In the next century it will be a prerequisite that business school graduates at all levels have the capability to utilize computer resources effectively (Callen, 1982, p. 19-26).

Computer literacy will be necessary for survival in the offices of the future. Business educators need to modify their curriculum to

adjust to the needs of the offices in their area.

But where and how to start changing the curriculum? Changes should stem from communication with area business offices to determine competencies needed by the entry-level word processing operator. A needs assessment of the offices where the student seeks employment is the initial step preparatory to curriculum implementation. The kinds of problems managers face in the workplace will also be the problems the business educator faces in curriculum planning (Meggison, 1983).

Recent research by Peter Meggison states that "business educators at all levels--secondary school, private business school, vocational/ technical school, and college--are faced with the problem of trying to maintain relevant, up-to-date curricula with increased budget restraints. Many educators are uncertain as to what route they should take in planning word processing curriculum" (Meggison, 1983).

Hilda J. Turner writes:

> The basic challenge to business educators is accepting word processing as a viable part of the business world and a necessary part of the business curriculum. Word processing is a change from the traditional and may require revising teaching methods and attitudes (Meggison, 1983).

In a short period of time information/word processing has had a tremendous impact on business education. Students need to be prepared in the basic concepts as well as to have operational knowledge of automated equipment for the ever-changing office (Moody, 1983).

The lack of literature on <u>word processing curriculum</u> argues for the need of further research in this area.

C H A P T E R   I I I

PROCEDURES

The previous chapter reviewed literature relating to Word Processing with a focus on business education. This chapter describes the methodology used in the study, and a summary of the research process.

The chapter has been divided into the following sections: (1) Research Design, (2) Survey Instrument, (3) Sample, (4) Collection of Data, and (5) Data Analysis.

Research Design

The purpose of the design was to collect data from a specific group: Word Processing supervisors in the Worcester, Massachusetts area; in order to provide business educators with data to consider in improving their curricula.

The data consisted of a sixteen question Word Processing Evaluation, delivered either by mail or hand, to forty-five Word Processing supervisors in the Worcester, Massachusetts area (see Appendix B). This questionnaire attempted to gather information concerning skills found lacking in the applicants for these positions.

The data were analyzed to determine the competencies needed by entry-level Word Processing operators. The results of the research were made available to business educators for consideration in updating their curricula. The results were also submitted to the supervisors participating in the research.

Survey Instrument

The research was conducted through a questionnaire designed to pro-vide data sufficient to determine the needs of the business organizations regarding incoming word processing employees. The questionnaire also sought information about the size of the organization, nature of the business, and the number of office personnel. The questionnaire had three open-ended questions at the end of the survey. A copy of the questionnaire is found in Appendix B.

The respondents were able to indicate the level of importance of various skills: whether these skills needed to be improved, needed no improvement, little improvement, or considerable improvement. Respon-dents were also asked about the kind of pre-employment test administered; input typically received by their Word Processing operators (handwritten, rough draft, or machine transcription); whether training on specific equipment is necessary; if post-secondary education is helpful; if inter-personal relationships are important in their organization; if more lib-eral arts are needed; and finally three open-ended questions: skills or knowledges which should be taught to future Word Processing operators; how the training can be improved; and the possibilities for career ad-vancement.

Sample

The sampling consisted of forty-five supervisors involved in Word Processing centers in the Worcester, Massachusetts area. The sample surveyed was drawn from the population composed of the Central Massa-

chusetts Chapter of the Association of Information Systems Profession-
als. All members were approached; of the 45, 30 responded.

The Central Massachusetts Chapter of the Association of Systems
Professionals membership comprised the sample because of their expertise
in Word Processing operation.

Business educators were not surveyed. However, later they were
given the results of the data for consideration in updating curricula.

Collection of the Data

The survey was conducted solely by the author through the question-
naire. These surveys were distributed in January and February 1985.
Each questionnaire contained a cover letter and a stamped, return-
addressed envelope. A copy of this letter is found in Appendix D.

A total of thirty surveys were collected by March 1985. This repre-
sented a 67% rate of response.

Three of the respondents did not answer any of the open-ended ques-
tions on page three, and some of the respondents omitted some of the
open-ended questions.

Data Analysis Technique

The data for the study was the Word Processing Evaluation form
found in Appendix B.

The data were analyzed using the Statistical Package for Social Sci-
ences (SPSS). For each variable, frequency distributions were construct-
ed and descriptive statistics calculated.

Chapter IV contains an analysis and interpretation of data obtained from the survey.

C H A P T E R   I V

RESULTS

This chapter presents results of the analysis of the question-
naires returned from 30 Word Processing Supervisors in the Worcester,
Massachusetts area. Results are reported for each questionnaire re-
turned. Response frequencies are calculated as percentages of the to-
tal sample.

Factors Relating to the Questionnaire

Question 1. Kind of business.

A variety of types of business and professional organizations partici-
pated in this study. A list of the businesses participating is found
in Appendix C. Table 1 represents the percentages for each type of
firm participating.

Question: Number of Personnel in your Word Processing Center.

Table 2 shows that there was a total of 110 positions in the thirty
companies evaluated. Two companies had terminals for their secretar-
ies attached to a mainframe computer. Those firms were Astra Pharma-
ceutical and New England Power (indicated in the table by *).

Question: What word processing equipment is used in your firm?

Table 3 shows the make of word processing equipment used in the 30
firms participating in this study. There were 21 different kinds of
equipment used.

TABLE 1

Participating Organizations
(N = 30)

Organization	Number	%
Accountant	1	3.3
Banking	1	3.3
Computer Manufacturing	2	6.6
Consumer Research	1	3.3
Electrical Contractor	2	6.6
Insurance	2	6.6
Legal	2	6.6
Manufacturing	9	30.0
Medical	3	10.0
Pharmaceutical	1	3.3
Training	1	3.3
Utilities	3	10.0
Word Processing Services	2	6.6
Total	30	100.0

TABLE 2

Number of Word Processing Positions in
the Surveyed Organizations
(N = 30)

Organization	Number of Personnel	%
1	*(No center)	.0
2	4	13.3
3	4	13.3
4	2	6.7
5	1	3.3
6	5	16.7
7	1	3.3
8	1	3.3
9	4	13.3
10	6	20.0
11	3	10.0
12	2	6.7
13	5	16.7
14	2	6.7
15	5	16.7
16	2	6.7
17	*(No center)	.0
18	4	13.3
19	5	16.7
20	2	6.7
21	1	3.3
22	3	10.0
23	1	3.3
24	6	20.0
25	6	20.0
26	5	16.7
27	14	46.7
28	6	20.0
29	5	16.7
30	5	16.7
Total	110	100.0

TABLE 3

Word Processing Equipment Used
(N = 21)

Make of Equipment	Frequency	%
IBM System 38	1	2.9
Digital Decmate 1 VT200	1	2.9
Decmate	1	2.9
Dec Data System 310	1	2.9
Phillips Micor	1	2.9
Wang	4	11.3
Vydec (Exxon Office Products)	1	2.9
OIS Wang	3	8.5
Word 11 Dec	1	2.9
CPT	1	2.9
IBM Displaywriter	6	17.0
IBM 8100	4	11.3
CPT 8100s	1	2.9
CPT 6000	1	2.9
Prime	2	5.6
IBM OS/6 442	1	2.9
IBM OS/6 450	1	2.9
Wang System 20	1	2.9
IBM	1	2.9
Wang WPS 30	1	2.9
A B Dick	1	2.9
Total	35	100.0

Question: Is shorthand required by your word processing operators?

Twenty-seven companies responded that shorthand was not a requirement

for their word processing operators.   Only three companies require

shorthand from their word processing operators (see Table 4).

TABLE 4

Need of Shorthand by Word Processing Operators
(N = 30)

Response	Number	%
Yes	3	10.0
No	27	90.0
Total	30	100.0

Question: How important is interpersonal relationship for a word pro-

cessing operator in your organization?

The results are shown in Table 5.

TABLE 5

Importance of Interpersonal Skills
(N = 30)

Response	Number	%
Is	26	86.7
Is Not	4	13.3
Total	30	100.0

Question: Is it necessary to have had training on specific equipment
before entering your employ?

The supervisors were asked to respond to the question whether it was
necessary for an operator to have had training on specific word pro-
cessing equipment before being hired. The data results are shown in
Table 6.

TABLE 6

Need for Training on Specific Word Processing Equipment
(N = 30)

Response	Number	%
Yes	11	36.7
No	19	63.3
Total	30	100.0

Question: For the word processing skills below, please place a check
under the columns which correspond to your perceptions of
your need for improvement.

The data results are shown in Tables 7 through 18 with each table repre-
senting the responses to a specific skill.

TABLE 7

Grammatical Skills
(N = 30)

No improve-ment Needed	Little im-provement Needed	Considerable Improvement Needed	No Need	%
4				13.3
	13			43.3
		9		30.0
			2	6.7
		2 firms did not respond		6.7
			Total	100.0

TABLE 8

Spelling
(N = 30)

No improve-ment Needed	Little im-provement Needed	Considerable Improvement Needed	No Need	%
7				23.3
	10			33.3
		9		30.0
			3	10.0
		1 firm did not respond		3.3
			Total	100.0

TABLE 9

Punctuation
(N = 30)

No improve-ment Needed	Little im-provement Needed	Considerable Improvement Needed	No Need	%
3				10.0
	12			40.0
		11		36.7
			2	6.7
		2 firms did not respond		6.7
			Total	100.0

TABLE 10

Sentence Structure
(N = 30)

No improve-ment Needed	Little im-provement Needed	Considerable Improvement Needed	No Need	%
3				10.0
	14			46.7
		10		33.3
			2	6.7
		1 firm did not respond		1.3
			Total	100.0

TABLE 11

Composing
(N = 30)

No Improvement Needed	Little Improvement Needed	Considerable Improvement Needed	No Need	%
3				10.0
	13			43.3
		7		23.3
			6	20.0
		1 firm did not respond		3.3
			Total	100.0

TABLE 12

Proofreading
(N = 30)

No Improvement Needed	Little Improvement Needed	Considerable Improvement Needed	No Need	%
4				13.3
	14			46.7
		9		30.0
			2	6.7
		1 firm did not respond		3.3
			Total	100.0

TABLE 13

Typing
(N = 30)

No Improve-ment Needed	Little Im-provement Needed	Considerable Improvement Needed	No Need	%
12				40.0
	11			36.7
		3		10.0
			3	10.0
		1 firm did not respond		3.3
			Total	100.0

TABLE 14

Math
(N = 30)

No Improve-ment Needed	Little Im-provement Needed	Considerable Improvement Needed	No Need	%
9				30.0
	4			13.3
		6		20.0
			9	30.0
		2 firms did not respond		6.7
			Total	100.0

TABLE 15

Telephone Skills
(N = 30)

No Improve- ment Needed	Little Im- provement Needed	Considerable Improvement Needed	No Need	%
13				36.7
	7			23.3
		3		10.0
			7	23.3
		2 firms did not respond		6.7
			Total	100.0

TABLE 16

General Clerical Skills
(N = 30)

No Improve- ment Needed	Little Im- provement Needed	Considerable Improvement Needed	No Need	%
9				30.0
	8			26.7
		3		10.0
			8	26.7
		2 firms did not respond		6.7
			Total	100.0

TABLE 17

Decision-Making Skills
(N = 30)

No Improve-ment Needed	Little Im-provement Needed	Considerable Improvement Needed	No Need	%
4				13.3
	10			36.7
		8		23.3
			6	20.0
		2 firms did not respond		6.7
			Total	100.0

TABLE 18

Need for Problem-Solving Skills
(N = 30)

No Improve-ment Needed	Little Im-provement Needed	Considerable Improvement Needed	No Need	%
4				13.3
	11			36.7
		7		23.3
			6	20.0
		2 firms did not respond		6.7
			Total	100.0

Question: What kind of pre-employment test do you administer?

The data results are shown in Table 19. Table 19A represents a break-
down of the category "Other."

TABLE 19

Pre-Employment Test Administered to Potential
Entry-Level Word Processing Employees
(N = 30)

General	Typing	None	Other	%
10				33.3
	9			30.0
		7		23.3
			4	13.3
				———
			Total	100.0

TABLE 19A

"Other" Category
(N = 30)

Type of Test	Number	Frequency	%
General	0	0.0	0.0
Typing	5	16.7	16.7
None	7	23.3	23.3
Other	4	13.3	13.3
General & Typing	10	33.3	33.3
Typing & Other	4	13.3	13.3
Total	30	100.0	100.0

Other: Predictive Index 2   Shorthand 3
       Grammar 3   Spelling 1
       Proofreading 1   Transcription 2

Question: How valuable have you found post-secondary education to

word processing operators?

The results of the data are found in Table 20.

TABLE 20

Value of Post-Secondary Education
(N = 30)

Very Valuable	Valuable	Somewhat Valuable	Worthless	%
6				20.0
	8			26.7
		12		40.0
			4	13.3
			Total	100.0

Question: What kind of input is given word processing operators?

The data results are found in Tables 21, 22, and 23.

TABLE 21

Handwritten Input Received by Word Processors
(N = 30)

Response	Number	%
Yes	27	90.0
No	3	10.0
Total	30	100.0

TABLE 22

Typed Rough Draft Input Received by Word Processors
(N = 30)

Response	Number	%
Yes	19	63.3
No	11	36.7
Total	30	100.00

TABLE 23

Machine Transcription Input Received by Word Processors
(N = 30)

Response	Number	%
Yes	17	56.7
No	13	43.3
Total	30	100.0

Question: Do you think there are sufficient liberal arts subjects

business education curricula?

Table 14 includes these data.

TABLE 24

Need for More Liberal Arts Subjects in the
Business Education Curricula
(N = 30)

Response	Number	%
Yes	10	33.3
No	16	61.5
4 firms did not respond		13.3
Total		100.0

Question: Please list any other skills or knowledges you think should

be taught to future word processing operators.

The following are verbatim comments from the word processing supervi-

sors.

* Effective interpersonal communication.

* Depends if word processor has other duties.
  Additional requirements: geography, telephone manners.

* Fast and accurate typing.

* Basic grammar.

* Writing skills, how to communicate effectively in writing
  and to edit the communication of others.

* Advanced functions: math and electronic mail.

* General Business Subjects, communication skills, human
  relations.

* Communication skills, business ethics, psychology related
  courses.

* Business ethics.

* Grammatical, spelling.

* Grammar skills, spelling, proofreading should be taught adequately. Had to turn people away before completing the screening process.

* General typing knowledge.

* Typing 60 words per minute.

* Data Processing skills and personal computer skills.

* Psychology, shorthand or speedwriting.

* How to think and make word processing types of decisions

* Specialty languages in basic science--to be able to write a chemical formula or descriptive terms in physics, weights and measures. Reading should be a must, as should essay to enhance comprehension.

* Geography knowledge of international cities and countries. Memory--teach yourself to remember.

* Ability to think, make decisions, both of which are gained by liberal arts courses.

* Visual acuity--does it look good on the page? Should I move it around a bit?

Seven firms did not reply to question 14 of the questionnaire.

Question: How can word processing training be improved?

* Basic grammar skills, editing skills, typing skills.

* Every company has a different procedure. At our company time is set aside daily to study and practice the machine before starting the job.

* Less rote memorization and more "real" learning. I would suggest projects, case studies, papers over traditional testing. Students need to be curious, and to understand why things happen, both with machinery and people.

* More detailed one-on-one vendor training and follow-up.

* Try to instill a sense of pride in their work.

* More hands-on type training at the secondary level. Continuing education in the company tends to insure that the equipment is used to its fullest.

* Have more teacher-student contact. Don't have student alone to learn from a book.

* More hands-on.

* Improve knowledge of word processing equipment in general. Improve/increase knowledge of various software programs.

* Periodic review/up-date seminars operator group sessions (brainstorming).

* The operator has to have the ability to change the letter structure and wording with efficiency and accuracy, inserting correct punctuation.

* Again stress to the students the importance of the basic skills. Also, have them read literature current to the state of the art in word processing and other facets of office automation. If it is at all possible, bring them on field trips so they will have a realistic view of what is expected of them in the working world.

* There should definitely be in-house training in all computer-related industries.

* Companies should have more in-house training available.

* By having secretarial skills particularly: grammar, punctuation, spelling, sentence structure, and proofreading included. How many schools do this? Candidates with these skills not only make better operators but are more likely to be promoted.

* Definitely most people who come in after taking courses are not sufficiently exposed to the mechanics and therefore do not understand the workings of the equipment in order to work through problems.

* Have specialized supervisors train new people how to use the customized in-house programs.

* Introduce more real-life work assignments. Basic concepts are taught in a classroom. It is difficult to relate what is learned in class environment to a work environment.

* I feel the very first step to achieving training improvements
  is to train the trainers or so-called trainers.

* Raise awareness concerning content of document beyond the
  "copying" process or mere technical skills.

* Address need of quality and dedication to some acceptable work
  ethics, rather than a preoccupation with financial rewards.

* Grammar, punctuation, spelling skills. How to deal with
  people--all levels. Personal appearance.

* More stress on machine transcription.

* Motivate the operator to be competitive in quality and pre-
  diction, not in monetary values.

Seven firms did not answer this question. Comments from the other

firms are listed verbatim.

Question: What are the career advancement possibilities?

* Questionable.

* Unlimited for word processing operators as they have an oppor-
  tunity to work for all departments and they get a general
  feeling for many different areas of a business. I think it
  really depends on an individual and their ambitions.

* Word Processing Supervisor.

* Today a skilled operator who also can communicate effectively
  and has a good sense of business can easily move into middle
  management in their organization.

* Operator, senior operator, supervisor manager.

* Not much of a career particularly for word processing in our
  organization (training).

* Depends on individual's goals.

* More within word processing.

* Any advanced administrative secretarial position.

*   The area of word processing specifically in office automation, generally is very exciting and the avenues for career growth and advancement are bountiful.

*   Group leader word processing, supervisor word processing, office automation functions.

*   Minimal for executive word processing operators only. Better for good word processing operator with supervisory experience.

*   Career advancement is limited: word processing operator, word processing specialist, word processing supervisor.

*   In this department they can become Sr. Medical Transcribers, Assistant Directors or Director of Department. Accreditation in Medical Record Sciences is a possibility with some tuition refunds.

*   We have three levels of word processing operators: word processing secretary, confidential secretary, lead/training operator. In word processing the only opportunity for advancement is if there is someone leaving or an increase needed in staff. There are A.A. positions which become available within the company but I have found the word processing secretaries aren't interested. They like their positions.

Fifteen of the companies did not answer the question regarding career possibilities, but the above comments were received from the remaining companies and are listed verbatim.

<div align="center">Summary</div>

A summary of the statistics was compiled for mailing to the post-secondary schools teaching word processing and for mailing to the firms who participated in the study. A copy of this summary is found in Appendix H together with cover letters.

CHAPTER V

SUMMARY, RECOMMENDATIONS, AND CONCLUSIONS

The purpose of this study was to obtain information from Worcester, Massachusetts area business organizations as to their needs for entry-level word processing operators. This data identified inadequate skills found in word processing operators in this area. The objective was to assist business educators in planning curricula and provide a bridge of communication so that future applicants will be better qualified.

During January 1985 the researcher submitted a questionnaire, either by hand or mail, to forty-five Word Processing supervisors in the Worcester, Massachusetts area. During January 1986 the researcher mailed a summary of the findings to the post-secondary schools in the Worcester area involved in teaching Word Processing.

The data collected from the sample was: the equipment their firm used; whether shorthand was necessary in their company; whether inter-personal relationshps were important; if training was required on specific equipment; what kind of pre-employment test was administered; if post-secondary education was valuable; what kind of input was given word processing operators; and whether there were sufficient liberal arts subjects in the business education curricula.

In addition, an inquiry as to other skills and knowledges which would be helpful to future word processing operators; how word processing operator training can be improved; and the career advancement possibilities.

From the data collected, it seemed that skill improvement was needed

in: grammar, spelling, punctuation, sentence structure, composing, proofreading, typing, math, telephone skills, general clerical, decision making, and problem solving.

This chapter is divided into four sections: summary of the findings, conclusions, recommendations, and suggestions for future research.

Summary of the Findings

The results of this study provide information from 30 Word Processing supervisors in the Worcester, Massachusetts area. A list of the businesses participating in this survey is found in Appendix C.

The sampling consisted of:

    1 accountant
    1 bank
    2 computer companies
    1 consumer researcher
    2 electrical cntractors
    2 insurance companies
    2 lawyers
    9 manufacturers
    3 medical field organizations
    1 pharmaceutical company
    1 training agency
    3 utilities
    2 word processing services

In these 30 firms there were 110 word processing personnel. Two companies had terminals for their secretaries attached to a mainframe computer.

There were 21 different makes of word processing equipment used in these 30 firms. The most widely used were: IBM first, Wang and DEC in second place, and CPT in third place.

Only 10% of the firms required shorthand in their offices.

The importance of interpersonal skills was indicated by 86.7% of the firms.

The need for training on specific word processing equipment was indicated by 36.7% of the firms; 63.3% of the firms did not consider this necessary.

Competency Evaluation

Grammatical Skills: only 30% responded that considerable improvement was needed.

Spelling: 30% replied that considerable improvement was needed; 10% replied that there was no need for spelling skills in their organization.

Punctuation: 36.7% of the firms replied that considerable improvement was needed.

Sentence Structure: 33.3% replied that considerable improvement was needed.

Composing: 23.3% replied that considerable improvement was needed: 20% of the firms had no need for composing in their organization.

Proofreading: 30% responded that considerable improvement was needed and 6.7% responded that there was no need for proofreading skills in their organization.

Typing: only 10% expressed the opinion that considerable improvement was needed.

Math: 20% replied that considerable improvement was needed and 30% replied there was no need for Math.

Telephone Skills: 10% replied that considerable improvement was needed but 23.3% replied that their word processing operators did not need this skill.

General Clerical: only 10% replied that considerable improvement was needed; 26.7% identified that there was no need in their firm.

Decision Making Skills: 23.3% replied that considerable improvement was needed, and 20% that there was no need for this skill in their organization.

Need for Problem Solving Skills: 23.3% replied that considerable improvement was needed, and 20% replied that there was no need within their firm.

In response to the pre-employment test administered, 33.3% gave a general test; 30% gave a typing test; 23.3% gave no pre-employment test; and 13.3% gave a pre-employment test consisting of grammar, proofreading, shorthand, spelling, and transcription.

The value of post-secondary education was categorized: 20% as very valuable; 26.7% valuable; 40% somewhat valuable; and only 13.3% considered it worthless.

Handwritten copy was the method of input received by 90% of the word processing operators. Rough draft input was received by 63.3% of the word processing operators. Machine transcription input was received by 56.7% of the word processing operators.

The need for more liberal arts subjects in the business education curricula was stated by 33.3% of the organizations.

Varied responses were received on the question of what skills or knowledges should be taught to future word processing operators. The responses were as follows:

            Interpersonal training--3 firms
            Knowledge of geography--2 firms
            Telephone instruction--1 firm
            More typing--5 firms
            Basic grammar review--3 firms
            Improve writing skills--1 firm
            Math review--1 firm
            Electronic mail instruction--1 firm
            Communication skills--2 firms
            Business ethics--2 firms
            Psychology--2 firms
            Proofreading awareness--1 firm

       Shorthand--1 firm
       Decision making practice--2 firms
       Reading comprehension--1 firm
       Data Processing--1 firm

(Seven firms did not offer any suggestions as to what skills or knowledges should be taught to future word processing operators.)

The suggestions for improving word processing operator training were as follows:

       Language arts
       Typing formatting lessons
       Individual vendor training
       Instill necessity of pride in work
       Hands-on equipment instruction
       Updating knowledge on equipment

(Seven firms did not offer any suggestions on how word processing operator training could be improved.)

Career Opportunities for Word Processing Operators

The following findings, relating to career opportunities, were reported by the organizations participating in this study.

Only 50% of the sample reported the career opportunities within their firms.

One firm responded that word processing secretaries were not interested in career advancement because they liked their positions.

In the medical field it was noted that the career opportunities were: Senior Medical Transcriptionist, Assistant Director of Department, and Accredition in Medical Record Science.

Individual ambitions and goals were motivations for advancement in careers of word processing operators in job descriptions such as: Word Processing Supervisor, Group Leader, Senior Operator, Supervisor Manager,

Word Processing Secretary, Confidential Secretary, Lead/Training Opera-
tor.

Only one firm noted that with effective communication skills, and
good business sense, there was a possibility to move into middle manage-
ment.

Conclusions

The following conclusions were drawn from the findings of this
study:

1. Improvement in word processing curricula is needed in: spelling,
punctuation, composing, proofreading, decision making, problem solving
skills, and interpersonal skills.

2. The input of word processing operators is received by 90%;
63.3% typed rough draft input, and machine transcription input is re-
ceived by 56.7%.

3. According to the study, 61.54% indicated that there was no
need for more liberal arts subjects in th business education curricula.

4. Shorthand was not required by 90% of the firms sampled.

5. Specific training on word processing equipment was not needed
by 63.3% of the firms.

6. Only 43% of the firms indicated the need for improvement in
grammatical skills.

7. Only 46% of the businesses reported a need for improvement in
typing skills.

8. In math, improvement was needed by 33.3%, but 30% responded
that there was no need for math by the word processing operators in

their firms.

10.   In general clerical skills, 36.7% responded that improvement was needed, but 26.7% responded that there was no need for general clerical skills in their word processing centers.

11.   A pre-employment test of only typing was given by 30% of the firms; 46.6% gave a combination test of general and typing; 23.3% gave no test.

12.   The value of post-secondary education was considered very valuable by 20%; valuable by 26.7%; somewhat valuable by 40%; and worthless by 13.3%.

Suggestions for skills or knowledges which the supervisors thought should be taught in the future were: communication skills, business ethics, data processing, personal computer skills, geography, and development of the ability to think.

Comments as to how word processing operator training could be improved included: more detailed one-to-one vendor training and follow-up; try to instill a sense of pride in their work; more teacher/student contact; more hands-on experience; seminars; field trips; more real-life work; personal appearance; better basic secretarial skills; more stress on machine transcription; a realistic view of the working world.

Regarding career possibilities, only one firm reported that a word processing operator could ascend into middle management; one firm reported that word processing secretaries were not interested in changing positions as they liked what they were doing; in the medical field the possibility of career advancement was: Senior Medical Transcriptionist,

Assistant Director, or Director of the department; the balance of the businesses and career advancement within the department.

Recommendations

The strategy of planning changes in curriculum relating to word processing in a certain geographic area without first completing a needs assessment, can only be a guestimation based on literature and studies previously done.

The exploding technological developments in office automation have changed the traditional office structure, creating a dilemma for the business educator: how to teach word processing courses or implement word processing in the existing secretarial curriculum.

Business teachers need to know what the business offices in their area require in order to provide the skills in the marketplace where the student will be seeking employment.

How to provide these requirements? The textbooks currently being published are an excellent source to provide background information on the issues involving word processing concepts, equipment, job classifications, ergonomics, lighting health hazards, psychological factors, definitions, information processing, and the changing office. The rapidly changing equipment necessitates flexibility and the ability to adjust to changes in procedures.

Workbooks, simulations, and in-basket assignments are helpful in simulating a workplace environment. At the rapid pace of change in office technology, it is necessary in addition to provide: audio-visuals,

slides, multi-media learning systems, visits to word processing centers, workshops, and human relationship skills training.

It is necessary to continue to teach fundamental basic skills of listening, speaking, reading, writing, and proofreading.

Corporate training activity has had widespread growth with in-house education programs being conducted.

Adults are returning to school in great numbers. This population will need refresher courses and training to keep up with the new technology.

The generation of children reared on electronically programmed toys will be psychologically ready to enter the automated office.

Schools and businesses should form a partnership to help each other. More and more jobs in the future will require a more educated background as computers take over the repetitive jobs.

Changes in technology are occurring so rapidly, it is necessary to keep the curricula flexible. The business educator has a challenge to provide the student with salable skills both for current and future employment.

Suggestions for Further Research

This study has shown that further research is needed in:

o   Job satisfaction .

o   Ergonomics vs. productivity.

o   Corporate in-house training.

o   Training being done at computer sales offices.

o   Curriculum development.

o Paperless office.

o Work measurement.

o Prioritizing.

o The health hazards of video terminals.

o Will the future word processing operator work outside
   the office?

o School/business partnership.

o Replication of this study at a future date.

APPENDIX A

DEFINITION OF TERMS

DEFINITION OF TERMS

Boilerplate | A number of standard paragraphs that can be arranged in a specified order as needed, then stored in paragraphs.

Byte | A sequence of binary digits directly following one another. A byte is sometimes loosely called a character.

Cathode Ray Tube | (CRT) Cathode ray tube. A screen that makes it possible to produce a document without the use of paper.

Central Processing Unit | (CPU) A computer. Components of word processing and data processing systems which contain the arithmetic, logic, and control circuits for the basic system.

Character | The coded symbol of a digit, letter, symbol, or control function.

Core Memory | Magnetized doughnut, like iron circles, each smaller than the head of a pin, strung together like beads on a wire, that hold bits of information.

Cross Training | Secretaries are periodically rotated to different positions so they know all parts of each job.

Cursor | The symbol on the screen that indicates where the next action will occur.

Daisy Print Wheel | An inexpensive plastic printing device.

Diablo | Trade name of a typing mechanism employing a high-speed interchangeable print wheel.

Digital | Information that has been changed into signals which can be recognized, stored, and used by automated equipment.

Document | A single piece of writing stored under one name-- the same as a file.

Element | A printing device that transfers the image of characters to paper.

Elite | A typeface that is equal to 12 characters per inch.

Ergonomics	A term used to describe the planning of work-space and environmental design that considers human factors.
Feasibility Study	A thorough study of the organization to determine the document needs of the employees.
Feedback	Information that tells whether expected results are obtained.
File	Information stored as a unit under one name, the file name.
Floppy	A term for a type of diskette/disk that is not rigid.
Form Letter	The body of the letter is printed; the names and and addresses are typed in.
Format Disk	To prepare a disk to receive data.
Format Text	To move a line of text to the left margin, center, or right margin of the page.
Global Search	Searches through a document for words or sets of characters and replaces them with new ones.
Graphic Forms	Charts, maps, and diagrams.
Hard Copy	A document on paper.
Hardware	The physical devices, mechanism, parts, or assemblies that make up a business machine.
Ink Jet Printing	Characters are shaped by electrostatically spraying a fine hairlike stream of ink of paper.
Input	Source of information; getting information into an informational processing system.
Interface	A connecting device.
Justified Right Margin	Forming a straight rather than ragged right margin.
Load	The process of transferring a program from a disk into the computer's memory.
Magnetic Card	A plastic-like card coated with a chemical compound on which information may be stored.

Matrix Printer	A group of closely spaced dots with a printed pattern that looks like the shape of a desired character.
OCR	Optical character recognition.
Pagination	The ability to number or renumber all of the page of text.
Pica	A typeface that is equal to 10 characters per inch.
Print Wheel	A device that transfers the image of characters onto paper.
Program	A set of machine instructions for the operation of automated equipment, such as computers and word processing systems.
Proofreader	A person who proofreads typed copy for text content, spelling, punctuation, grammer, and typographical errors.
Reprographic	A method of achieving a traditional form of hard-copy output by duplication or reproduction.
Search	The ability to find priority work.
Software	A program that instructs the operations of word and data processing equipment.
Stand-alone System	A system that consists of a single station not hooked-up or connected to other systems.
Super- and Subscript	The capability to place numbers slightly above or below the regular line of type.
Upgradeable	New features can be added to the equipment as they are developed instead of having to replace the old model.
Visual-Display Screen	Similar to a television screen.
Voice-activated	Machines that can recognize and respond to spoken words.
Working Copy	A temporary working area in the computer where your document exists before it is stored on a disk.

Word Processing	Managing information through improved procedures and modern equipment.
Word Processing	The centralized location in which word processing functions take place.
Word Processing Operator	Someone having 6 to 24 months of word processing experience operating equipment.
WPM	Words per minute.
Write Protected Tab	A gummed label stuck on a diskette to cover the notch in the side of the diskette cover so the disk drive senses this and cannot write on the diskette.

This glossary is selected from <u>PFS Write User's Manual</u> for the Apple IIe and <u>Word/Information Processing Concepts</u> by Bergerud and Gonzalez.

APPENDIX B

QUESTIONNAIRE

WORD PROCESSING EVALUATION

DIRECTIONS: The purpose of this questionnaire is to provide an oppor-
tunity for you to express your feelings about the competencies of the
entry-level word processing operators being employed by your firm.
This research is bieng conducted in Worcester, Massachusetts area busi-
ness organizations; participants are supervisors in the field. The re-
sults of the research will be made available to business organizations
for the purpose of placement, and to business educators for considera-
tion in updating their curricula. I would appreciate your returning
the questionnaire to my home address at 3 Church Street, West Brookfield,
MA 01585. Thank you for your assistance and cooperation.

                            Vivian Persons
                            Doctoral Candidate
                            UMass/Amherst
****

1. The name of your firm_____

2. Kind of business_____

3. Your name and title_____

4. Number of personnel in your word processing center_____

5. What word processing equipment is used in your firm?

    _____   _____

    _____   _____

6. Is shorthand required by your word processing operators?
    (Circle one)

          Yes   No

7. How important is interpersonal relationship for a word processing
    operator in your organization? (Circle one)

          It is   It is not

8. Is it necessary to have had training on specific equipment before
    entering your employ? (Circle one)

          Yes   No

9. For the word processing skills below, please place a check under the columns which correspond to your perceptions of your need for improvement.

SKILL	1. No improve-mend needed	2. Little im-provement needed	3. Considerable improvement needed	4. No need
Grammatical	_____	_____	_____	_____
Spelling	_____	_____	_____	_____
Punctuation	_____	_____	_____	_____
Sentence Structure	_____	_____	_____	_____
Composing	_____	_____	_____	_____
Proofreading	_____	_____	_____	_____
Typing	_____	_____	_____	_____
Math	_____	_____	_____	_____
Telephone Skills	_____	_____	_____	_____
General Clerical	_____	_____	_____	_____
Decision Making	_____	_____	_____	_____
Problem Solving	_____	_____	_____	_____

10. What kind of pre-employment test do you administer? (Circle all which apply)

    General   Typing Test   None   Other_____

11. How valuable have you found post-secondary education to word processing operators? (Circle one)

    1. Very Valuable   2. Valuable   3. Somewhat Valuable

    4. Worthless

12. What kind of input is given word processing operators after they are employed? (Check all that apply)

Handwritten_____   Typed Rough Draft_____

           Machine Transcription_____

13. Do you think there are sufficient liberal arts subjects in business education curricula? (Circle one)

       Yes   No

14. Please list any other skills or knowledge you think should be taught to future word processing operators.

15. How can word processing operator training be improved?

16. What are the career advancement possibilities?

Thank you for taking the time to complete this survey.

                              Sincerely,

                              Vivian Persons
                              3 Church Street
                              West Brookfield, MA 01585

December 1984

APPENDIX C

BUSINESSES PARTICIPATING IN THE STUDY

BUSINESSES PARTICIPATING IN THE STUDY

Astra Pharmaceutical	Westboro
Coghlin's, Inc. (2 departments)	Worcester
Fitchburg Gas & Electric Co.	Fitchburg
Fletcher, Tilton & Whipple, P.C.	Worcester
Flexcon Co., Inc.	Spencer
Foster Grant Corp.	Leominster
Jamesbury Corp.	Worcester
Main Hurdman (CPA)	Worcester
Management Decision Systems	Worcester
Montachusett Employment and Training	Gardner
Nelmor, Inc.	N. Uxbridge
New England Electric	Westboro
New England Power Service	Westboro
Norton Co.	Worcester
Paul Revere Insurance Co. (2 departments)	Worcester
People's Savings Bank	Worcester
Prime Computer (2 departments)	Natick
Merick, O'Connell, DeMaillie & Lougee	Worcester
Simonds Cutting Tools	Fitchburg
Smith Valve Corp.	Westboro
UMC Medical Center	Worcester
UMass Medical Center	Worcester
Whitman Associates, Inc.	Worcester
Worcester Memorial Hospital	Worcester
Wright Line, Inc. (2 departments)	Worcester
Word Processing of Worcester	Worcester

APPENDIX D

TRANSMITTAL LETTER FORWARDING QUESTIONNAIRE

Dear AISP Member:

Your help is urgently needed. Please help me by taking a few minutes
to fill out the enclosed questionnaire and returning it in today's
mail.

The research for my doctoral program is the word processing needs of
business organizations in the Worcester, Massachusetts area. My sample
is the AISP members because of their expertise in word processing and
their ability to critically examine the objective of the study.

The purpose of the study is to provide an opportunity for business to
identify the needs for entry-level word processing operators with the
objective of better qualified applicants in the future.

I would appreciate your filling out and returning the enclosed survey
by return mail. PLEASE!

Yours truly,

Vivan Persons
UMass Doctoral Candidate

enc.

APPENDIX E

JOB TITLES AND DESCRIPTIONS FOR WORD PROCESSING PERSONNEL

A. WORD PROCESSING TRAINEE

Entry level position for those having 0-12 months word processing experience. Must have adequate typing skills, good knowledge of grammar, punctuation, spelling and formatting, the ability to use dictionaries, handbooks and other reference materials, and be oriented toward teamwork and the use of machines. A trainee's functions include routine transcription and manipulation of text from various types of source information (dictation, handwritten, etc.). Maintains own production records, and may be required to proofread own work.

B. WORD PROCESSING OPERATOR

The next level up from WP Trainee for those having 6-24 months word processing experience. In addition to having all the qualifications and functions of position A, a word processing operator handles special documents, meets established quality standards, uses all of a machine's text editing functions and is familiar with department terminology and company practices.

C. WORD PROCESSING SPECIALIST I

A word processing operator with a minimum of 18 months experience who can format, produce and revise complicated documents, such as lengthy technical and statistical reports, from complex source information, including the retrieval of text and data from electronic files. Exercises independent action when interpreting instructions to produce a quality document, understands proofreader marks, and assumes full responsibility for document accuracy and completeness. Has a thorough knowledge of center procedures and maintenance of records. May operate word processing equipment in the telecommunications mode.

D. WORD PROCESSING SPECIALIST II/ASSISTANT SUPERVISOR

A person at this level exercises all of the competencies of position C and may act as assistant supervisor. A Word Processing Specialist II is able to operate all the information processing equipment within the installation. Responsibilities include coordinating and assigning work, analyzing requirements for specific projects, communicating with users, compiling production statistics and recommending changes in center procedures. May also assist in training personnel.

E. PHOTOTYPESETTING SPECIALIST

A word processing operator who enters special codes while keyboarding and revising text that is to be output on a photocomposition system. Has knowledge of points, picas, typefaces, leading, format requirements, production techniques, and other aspects of typesetting and printing.

F. WORD PROCESSING TRAINER

Someone with a minimum of 24 months experience operating word processing systems who spends the majority of time training new operators. May also be responsible for instructing users in dictation methods and other procedures to insure maximum utilization of a wp center. Should make recommendations to management concerning new equipment purchases from the standpoint of ease of use.

G. PROOFREADER

Proofreads typed copy for text content, spelling, punctuation, grammar, and typographical errors. May be responsible for setting grammar and format standards, guidance and/or training of secretaries and principals.

H. WORD PROCESSING SUPERVISOR

With all the competencies of a word processing specialist II, a supervisor is responsible for the operation of a center (or section within a large center). Schedules and coordinates work flow, assists word processing personnel in document production and in establishing and maintaining quality standards. Also analyzes production data and procedures, identifies potential improvements and may be responsible partially for budgets and equipment recommendations. Reports to word processing manager.

I. WORD PROCESSING MANAGER

Exempt (salaried). Responsible for the overall operation of a word processing center, including the guidance of supervisors, personnel administration, staff requirements, user liaison and evaluation, design and implementation of future wp systems. Also is responsible for budgets, overall production reports, and coordination of services with administrative support. May also manage the operation of photocopying, printing, mailing or graphics services. In larger organizations, the word processing manager reports to Information Manager.

AA. ADMINISTRATIVE SECRETARY

Someone who works for a group of principals as part of a team under the direction of an administrative support supervisor or manager. Responsibilities include such support functions as filing, photocopying, maintaining calendars, records and lists, and providing special secretarial services, etc.

BB. SENIOR ADMINISTRATIVE SECRETARY

Has a record of exceptional performance. At times may act as assistant to supervisor of an administrative team and is qualified to compose and edit documents for principals, provide research support and perform other para-professional duties. Handles special projects and is fully aware of company standards and practices.

CC. ADMINISTRATIVE SUPPORT SUPERVISOR

May have the responsibilities of position BB in addition to scheduling and administering work flow to a team of administrative secretaries. Responsible for liaison with and training of users who benefit from administrative support. Evaluates staffing requirements, prepares management reports, recommends new methods of handling administrative secretaries. Reports to Administrative Support Manager.

DD. ADMINISTRATIVE SUPPORT MANAGER

Exempt (salaried). Has full responsibility for developing, maintaining and evaluating all services under administrative support within an organization, such as filing, telephone, mail and para-professional support. Monitors the success of the administrative support group and is familiar with the company's goals and objectives. Works closely with the word processing manager to ensure cooperation of the two functions. May manage other major administrative duties such as records and retention, microfilm, print shop, purchasing, etc. Reports to Information Manager (in large organizations).

EE. STAFF ANALYST,

Exempt (salaried). Responsible for consulting and assisting word processing and administrative support supervisors and managers. Conducts studies, reviews operations and determines and recommends appropriate staffing, procedures and equipment. Reports to Information Manager or Word Processing Manager or Administrative Support Manager.
ager.

J. INFORMATION MANAGER

Exempt (salaried). Has total responsibility for all aspects of an organization's office system, including word processing, administrative support and other information processing functions. Ensures the collaboration of all support functions. May report to vice president or chief executive officer in some organizations.

APPENDIX F

COVER LETTER TO EDUCATORS

Church Street
West Brookfield, MA 01585
Tel: 617-867-6917

Dear Educator:

The following findings are a result of a research study done with
Word Processing supervisors in the Worcester, Massachusetts area.
This is a current needs assessment of the skills they perceive re-
quired by entry-level word processing educators.

With the continuous changes in office technology, it is necessary to
constantly restructure critical skills development to train more qual-
ified word processing operators in the future.

The objective of this study was to provide educators with the major
weaknesses found in applicants' competencies, so the data can be
considered when curricula development is being planned.

If you would like further details of the study, please contact me.

Very truly yours,

Vivan Persons
Doctoral Candidate

Enc.

APPENDIX G

LIST OF SCHOOLS

LIST OF SCHOOLS WHICH RECEIVED A DATA SUMMARY

Becker Jr. College
Dean Judith Leonard
Leicester, MA 01524

Becker Jr. College
Dean William Mott
61 Sever Street
Worcester, MA 01610

Career Education Training Center
74A Grove Street
Worcester, MA 01610

Central New England College
Dean of Instruction
768 Main Street
Worcester, MA 01603

Dudley Hall
Pres. Richard Crance
158 West Main Street
Dudley, MA

Fanning School of Health
 and Technical Occupations
Dean of Instruction
151 Belmont Street
Worcester, MA 01605

Fisher Junior College
Dean of Instruction
West Main Street
Westboro, MA 01581

Quinsigamond Community College
Ms. Jean Hogenkamp, Secretarial
 Department
670 West Boylston Street
Worcester, MA 01606

Salter Secretarial and Com-
 puter School
155 Ararat Street
Worcester, MA 01606

Worcester Schools
Curriculum Specialist
20 Irving Street
Worcester, MA 01602

Worcester State College
Dr. David Quist, Continuing
 Education
486 Chandler Street
Worcester, MA 01602

APPENDIX H

SUMMARY OF THE FINDINGS

SUMMARY

A STUDY: WORD PROCESSING NEEDS OF BUSINESS ORGANIZATIONS

IN THE WORCESTER, MASSACHUSETTS AREA

The following data was compiled from the responses of a questionnaire sent to Word Processing supervisors in the Worcester, Massachusetts area.

1. There were 21 different kinds of word processing equipment used in the sample of 30. IBM was first with 28%. Wang and DEC were second with 15.2%; CPT was fourth with 14%. The balance of 28% was distributed between 17 different makes of word processing equipment.

2. Shorthand was not required by 90% of the sample.

3. Interpersonal skills were important to 86% of the firms.

4. Need for training on specific word processing equipment was not necessary by 63.3%.

5. Grammatical skill improvement was needed by 43% of the businesses.

6. Spelling improvement was needed by 63.3% of the firms.

7. Punctuation improvement was needed by 76.7% of the firms.

8. Composing improvement was needed by 66.3% of the firms.

9. Proofreading skill improvement was needed by 76.6% of the firms.

10. Typing skill improvement was needed by 46% of the firms.

11. In math, improvement was needed by 33.3% of the firms, and 30% responded that there was no need of math in their organization.

12. Only 33.3% responded that improvement was needed in telephone skills; 23.3% responded that it was not necessary to have telephone skills in their firm.

13. In general clerical skills, improvement was needed by 36.7% of the businesses; 26.7% of the firms had no need of general skills in their word processing center.

14. In <u>decision-making</u> skills, 59.3% reported that improvement was needed, and 20% reported that there was no need for this skill in their firm.

15. In <u>problem-solving</u> skills, 60% reported that improvement was needed, and 20% reported that there was no need for this skill in their firm.

16. A <u>pre-employment test</u> of only typing was given by 30% of the firms; 46.6% gave a combination test of general and typing; 23.3% gave no test.

17. The <u>value of post-secondary education</u> was considered very valuable by 20%, valuable by 26.7%, somewhat valuable by 40%, and worthless by 13.3%.

18. <u>Handwritten input</u> was received by 90% of the word processors.

19. <u>Typed rough draft input</u> was received by 63.3% of the word processors.

20. <u>Machine transcription input</u> was recieved by 56.7% of the word processors.

21. No <u>need for more liberal arts subjects</u> in the business education curricula was reported by 61.5% of the firms.

Suggestions for skills or knowledges which the supervisors thought should be taught in the future were communication skills, business ethics, data processing and personal computer skills, geography, and development of the ability to think.

Comments as to how word processing operator training could be improved were as follows: more detailed one-on-one vendor training and follow-up; try to instill a sense of pride in their work; more teacher/student contact; more hands-on; seminars; field trips; more real-life work; personal appearance; better basic secretarial skills; more stress on machine transcription; a realistic view of the working world.

Regarding career opportunities, only one firm reported that a word processing operator could ascend into middle management; one firm reported that word processing secretaries were not interested in changing positions as they liked what they were doing; in the medical field the posibility of career advancements was Senior Medical Transcriptionist, Assistant Director, or Director of the department; the balance of businesses had career advancement within the department.

Vivian Persons
Doctoral Candidate, University of Massachusetts
January 1986

APPENDIX I

THANK-YOU LETTER TO PARTICIPANTS

Church Street
West Brookfield, MA 01585
Tel: 617-867-6917
January 20, 1986

Dear AISP Member:

Thank you for filling out the questionnaire evaluating entry-level
Word Processing operators in your firm. The research study is com-
pleted, and the findings have been submitted to the post-secondary
schools teaching Word Processing.

This data will be helpful in considering curriculum implementations
and modifications to better prepare applicants for employment in to-
day's office.

A summary of the findings is enclosed.

Thank you for your participation in helping to improve Word Process-
ing education.

Sincerely,

Vivian Persons
Doctoral Candidate
University of Massachusetts

Enc.

BIBLIOGRAPHY

Ackoff, Russell I. The Design of Social Research. Chicago: University
    of Chicago Press, 1973.

Anderson, Ruth I. "Word Processing." The Changing Office Environment.
    Reston, VA: National Business Association, 1980.

Anderson, T. J. and W. R. Trotter. Word Processing. New York: Amacon,
    1974.

Aschner, Katherine. The Word Processing Handbook. White Plains:
    Knowledge Industry Publications, Inc., 1982.

Asplund, Carol. "Easing Word Processing into College Curriculum."
    Business Education Forum, December, 1978.

Association of Information Systems Professionals. "Job Titles and
    Descriptions for Word Processing Personnel." Willow Grove, PA,
    1984.

Bergerud, Marly and Jean Gonzalez. Word Information Processing Con-
    cepts: Careers, Technology, and Application. New York: John
    Wiley & Sons, 1981.

_____. Word/Information Processing Concepts. New York: John Wiley
    & Sons, 1982.

Bernstein, Ed. "An Alternative to Glaring Overhead Lighting." Words,
    October/November, 1982.

Blackman, Brian R. "Office 2000." Words, June/July, 1982, pp. 16-20.

Borg, W. R. and M. D. Gall. Educational Research: An Introduction.
    New York: Longman, 1983.

Boyer, Glen L. "Drafting Dependable Documents." Words, June/July,
    1983, pp. 38-40.

Brooks, Lloyd. Consultamation, Inc./Word Processing Practice and
    Applications. New York: Gregg/McGraw-Hill, 1983.

Callen, R. W. and Harold Holen. "3R's & C" (Computer Literacy).
    Collegiate News & Views. Cincinnati: South-Western Publishing,
    Spring, 1982, p. 19.

Casady, Mona. Word Processing Concepts. Cincinnati: South-Western
    Publishing, 1980.

Case Study of Management Planning & Control at GE Company. Annual Massachusetts Conference. New York: March, 1961.

Cecil, Paula B. Word Processing in the Modern Office. Benjamin/Cummings Publishing Co., California: 1980.

Clack, Jo Ann. Word Processing in Advanced Typewriting. Cincinnati: South-Western Publishing Co. (Century 21 Reporter), Spring, 1982.

Curchack, Norma and Patricia A. Parzych. Secretarial Training for the Changing Office. New York: Harcourt Brace Jovanovich, 1977.

Data Pro Reports. Report on Word Processing. March, 1979; May, 1980.

Deutsch, Shea and Evans. Human Resources & Word Processing. Willow Grove: International Word Processing Association, 1979.

Dolecheck, Carolyn and Danny Murphy. Applied Word Processing. Cincinnati: South-Western Publishing, 1983.

Douglas, Lloyd, Blanford, James and Ruth Anderson. Teaching Business Subjects. Englewood Cliffs: Prentice Hall, 1965.

Ellis, Bettie Hampton. Word Processing Concepts & Applications. New York: Gregg Div., McGraw-Hill, 1982.

The Executive Guide to the Use of the Electronic Office. San Antonio: Datapoint, 1981.

Friedheim, Stephen. "Do You Care about the Future of Business Education?" Norcross, GA: Gregg/McGraw-Hill (Business World), May/June, 1982.

Glover, Carol and Alan Purchase. "All in a Day's Work--1989." Reston, VA: Word Processing, March/April, 1977, p. 11.

Goddard, John B. Office Location in Urban & Regional Development. London: Oxford University Press, 1975.

Goldstein, Larry and Martin Goldstein. Basic for the Apple 11 Programming & Applications. Bowie, MD: Robert J. Brady Co., 1982.

Guffey, Mary Ellen and Lawrence Erickson. Business Office Practices Involving the Typewriter with Implications for Business Education Curricula. Cincinnati: South-Western Publishing Co., 1981.

Hammer, George. Delta Pi Epsilon Journal. Nov. 1975, pp. 1-9.

Harris, Louis. "Office Environment." Words, Feb./March, 1983, p. 38.

Haverson, Debra. "Finding a Place in Today's Office." Reston, VA: Newsletter for Integrated Systems, June, 1983.

Herbert, Frank and Max Barnard. Without Me You're Nothing. (The Essential Guide to Home Computers.) Simon & Schuster, 1980.

Heyel, Carl. Handbook of Modern Management & Administrative Services. Norcross, GA: McGraw-Hill, 1972.

Jacobus, Lee A. A World of Ideas. Essays by Thomas Kuhn. "The Essential Tension: Tradition and Innovation in Scientific Research." New York: St. Martin's Press, 1982.

Kleinschrod, Walter A. Management's Guide to Word Processing. Chicago: The Dartnell Corporation, 1981.

Kleinschrod, Walter, Kruk, Leonard and Hilda Turner. Word Processing: Operations, Applications, and Administration. Indianapolis: Bobbs-Merrill Educational Publishing, 1980.

Knox, Frank M. Managing Paperwork. New York: Thomond Press, 1980.

Kutie, Rita C. "An Analysis of the Job Dimensions of Word Processing Secretaries, Administrative Support Secretaries and the Correlation of these Job Dimensions with Job Satisfaction Factors." Business Education Forum, February, 1978, p. 38.

Lake, Bill. "Transition to O A Training." Words, June/July, 1983, p. 41.

Lowey, Phillip. "Kelly Word Processing Trianing Program Teaches Concepts, Not Buttons." Word Processing. (Canadian Office), 1981.

Mason, Jennie. Introduction to Word Processing. Indianapolis: Bobbs-Merrill Educational Publishing, 1980.

_____. Word Processing Skills & Simulations. Indianapolis: Bobbs-Merrill Educational Publishing, 1979.

Massachusetts Towns--An 1840 View. Barre, MA: Barre Publishing, 1963.

Masterson, Bert. "Colorado Computer Experience." Business Education World, 1-F, 1983.

Matthews and Moody. Palmetto Insurance Co. Word Processing Correspondence Secretary Office Job Simulation. Cincinnati: South-Western, 1981.

Mayer, Kenneth R. "Building Oral Communication Skills in the Business Office Curiculum." Collegiate News & Views. Cincinnati: South-Western Publishing, Spring, 1982, pp. 13-18.

McCabe, Helen M. and Estelle Popham. _Word Processing and Systems Approach to the Office_. New York: Harcourt Brace Jovanovich, Inc., 1977.

McCauley, Rosemarie. _Current Research in Typewriting/Word Processing_. Cincinnati: South-Western Publishing, 1981.

McWilliams, Peter A. _The Word Processing Book--A Short Course in Computer Literacy_. Allen Park, MI: Prelude Press, 1981.

Meggison, Peter F. _Practices and Requirements in Boston Area Word Processing Centers with Curriculum Implications_. Ed.D. Dissertation, University of Massachusetts, Amherst, 1983.

Meroney, John W. "Word Processing--What Skills Should an Entry-Level Applicant Have?" _Century 21 Report_, Fall, 1979, rr 6.

Moody, Patricia. "Professional Information Word Processing Corner." Cincinnati: South-Western Publishing Company (_Century 21 Reporter_), Fall, 1983, p. 9.

Moon, Harry R. "A Study of Word Processing Operations in Selected Businesses in Eight States During the Calendar Year 1981." (Special Edition) _Viewpoints in Business Education_, April, 1982.

More Massachusetts Towns. Barre, MA: Barre Publishers, 1963, p. 100.

Muscat, Eugene. "Microcomputers in Business Education." _Business Education World_, M/A, 1980, p. 10.

Naisbitt, John. _Megatrends_. New York: Warner Books, 1982.

Pechter, Kerry. "Living." Los Angeles: Spring Magazine--Times Service. December 30, 1983.

Perkins, Edward A., Jr. "Executive Typing in the Age of the Automated Office." _Business Education World_, 1980.

Personal Computers for the Physically Disabled. Cupertino, CA: Apple Computer, Inc.

Phi Delta Kappan. October, 1967, pp. 71-74.

Poland, Robert. "Typewriting Instruction for the 1980's." _Journal of Business Education_, October, 1980.

Poole, Lou, McNiff, Martin and Steven Cook. _Apple 11 Users' Guide_. Berkeley, CA: Osborne/McGraw-Hill, 1981.

Popyk, Marilyn. Word Processing and Information Systems. New York: Gregg Division, McGraw-Hill Book Co., 1983.

_____. Word Processing Essential Concepts. New York: Gregg Division, McGraw-Hill Book Co., 1983.

Poynter, Dan. Word Processing and Information Processing. Santa Barbara, CA: Para Publishing, 1982.

Quible, Zane K. "The Office of the Future and Its Impact on Employees." Business Education Forum. December, 1977.

Reference Guide to Word Processing Education. Willow Grove, PA: International Word Processing Association, 1980.

Reiff, Rosanne. Communication Skills for the Processing of Words. Cincinnati: South-Western Publishing, Inc., 1981.

Ristau, Robert A. "What Futurists Say About Schools and Offices of the Future." Beta Mu Chapter of Delta Pi Epsilon, March, 1977.

Robinson, Jerry. Strategies of Instruction in Typewriting. Cincinnati: South-Western Publishing, Inc., 1972.

Rogalsky, Alma. "Solving the Personnel Puzzle." Words, October/November, 1982, p. 17.

Sandrof, Iva. Yesterday's Massachusetts. Miami, FL: E. A. Seemann Publishing, Inc., 1977.

Scriven, Jolene D., et al. National Study of Word Processing in Selected Business Organizations. St. Peter, MN: Delta Pi Epsilon National Office, 1981.

Shane, Harold G. "Forecast for the 80's." Today's Education, 1979, p. 63.

Smith, Harold T. "Reckoning with the Future." Words. February/March, 1983, p. 30.

Stultz, Russell A. The Illustrated Wrod Processing Dictionary. Englewood Cliffs, NJ: Prentice Hall, Inc., 1983.

Sudman, S. and Ham Bradburn. Asking Questions: A Practical Guide to Questionnaire Design. San Francisco: Jossey Bros., 1982.

Tantaglia, Ben. "The Impact of Direct Voice Input on Systems." Worcester, MA: AISP, 1983.

Toeffler, A. The Third Wave. New York: William Morrow & Co., 1980.

Trotter, William R. and Thomas J. Anderson. <u>Word Processing</u>. New York: AMACOM., 1974.

Walter, Mary Jane Ornelas. "Word Processing Implications for the Type-writing Teacher." Fall, 1978, p. 13.

Waterhouse, Shirley. <u>Word Processing Fundamentals</u>. New York: Canfield Press (Harper & Row Publishers), 1979.

<u>Webster New World Dictionary</u>. New York: Simon & Schuster, 1980.

Wheeler, Carol Ann and Marie Dalton. <u>Word Processing Simulations for Electronic Typewriters and Text Editors</u>. John Wiley Series in Word Processing.

_____. <u>Word Processing Simulations for Text Editors, Information Processors and Personal Computers</u>. John Wiley Series in Word Processing.

Wiles, Jo and Joseph Bondi. <u>Curriculum Development</u>. Columbus, OH: Charles E. Merrill Publishing Co., 1979.

Woldenberg, Jeanne. "The PC Generation." <u>Words</u>, August/September, 1983.

<u>Words</u>. "Industry Briefs." October/November, 1983, p. 13.

Worcester Bank & Trust Co. <u>Historic Events in Worcester</u>. Worcester, MA: 1922.