EXAMINING THE READING PROFICIENCY
OF OFFICE WORKERS

by

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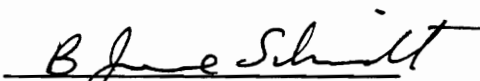in partial fulfillment of the requirements for the degree of

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(ABSTRACT)

This study was designed to determine if individuals in administrative

support occupations are equipped with the necessary reading skills, including

proofreading, verifying, and comprehending detail, needed to perform

efficiently on the job. To address the problem of the study, the following

specific research questions were answered:

1.   What is the reading level of documents actually used by selected

administrative support workers?

2.   What level of proficiency do selected administrative support

workers display in reading office documents?

3.   Does reading proficiency differ for them by age, educational

level, length of job experience, or by job level.

Participants were 60 administrative support workers at Virginia

Polytechnic Institute and State University. Participants completed tests to

measure their performance on the three skills. Additionally, these individuals provided examples of reading they complete as part of their work.

Findings from the study are as follows:

1.   The average reading level for all documents submitted was 11.6.

2.   The mean for all participants on the total test was 53.15 with a minimum score of 40 and a maximum score of 58 out of a total of sixty points.

3.   No significant differences were found in the reading proficiency level of participants according to age, educational level, length of job experience, or job title.

Based on the findings and conclusions in this study a number of implications for classroom instruction and further research are provided.

ACKNOWLEDGEMENTS

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INTRODUCTION

The workplace is changing! As today's students are entering the global workplace, educators must prepare these students to enter the "real" world with the essential skills to be competitive and to function effectively in an ever-changing environment. Naisbett, author of <u>Megatrends</u>, reported in 1982 that America had become an information oriented society. In order for students to perform effectively in this information-oriented society, the three R's must take on a new meaning (SCANS, 1991). As the United States moves into a more information-intensive society, the concern for business educators is how to assure that business education graduates meet the job related skills requirements, including technical reading, of the workplace. To address this concern, this study focuses on the reading proficiency of office support personnel in the workplace.

A primary concern of business educators is to prepare potential office workers with the skills necessary to be productive and efficient in today's and tomorrow's marketplace. Policy statement number 41 of the Policies Commission for Business and Economic Education (1987) states: "Since

business organizations are dependent on well-prepared workers, the strength of the nation's economy lies in the work force. With qualified, productive employees, business can function effectively, and the country can maintain a competitive posture." According to the SCANS (The Secretary's Commission on Achieving Necessary Skills, U.S. Department of Labor) Report for America 2000 (1991), employees will have to read well enough to comprehend and decipher diagrams, directories, correspondence, user guidebooks, journals, blueprints, charts, graphs, tables, standard operating procedures (SOPs), and specifications. Without the capability to read a diverse set of materials, workers cannot locate the detailed and quantitative data needed to make decisions or to suggest courses of action. Reading requirements on the job might involve the following:

- interpreting blueprints,
- understanding materials catalogues,
- dealing with letters and complaints,
- comprehending written policy,
- reading medical records and medication instructions
- reading technical manuals from equipment vendors, and
- reading a variety of office documents

Numerous public appeals are being made via television for volunteers to help the illiterate learn to read. Not only is the national conscience being stirred by the numbers of Americans who cannot read, but educators and business people are also concerned with the inability of high school and

college graduates to read for comprehension, to follow simple instructions or directions, and to express themselves correctly through both written and oral communication (Jackson & Johnson, 1991). Research indicates that the ability to write effectively is closely related to reading skills. Gigliotti (1986) determined that the components of basic skills needing improvement are spelling, grammar, composition, and punctuation.

Schmidt noted in a 1987 study that employers have difficulty finding workers with basic academic skills--including both reading and writing. Business educators have put primary emphasis on ensuring that students become computer literate, often at the expense of basic skills. A major responsibility of business educators is training potential office personnel to be employable, efficient, and productive on the job (Joyner, 1989). Business educators need to examine courses and curriculum to determine if students are provived with competencies needed for today's workplace.

The Secretary's Commission on Achieving Necessary Skills (SCANS) (1991) was asked to examine the demands of the workplace and ascertain whether our young people are capable of meeting these demands. Researchers were commissioned to conduct interviews with workers and employers in a vast range of jobs. The message received from the results of these interviews

for every type of job was that good jobs will increasingly depend on people who can put knowledge to work.

Need For The Study

The SCANS (1991) report states that less than half the workers entering the workplace have the necessary skills to perform even entry level positions. The ability to read, including proofreading, verifying, and comprehending, is one of the basic things needed by all office workers. Yet the level of the skills that office workers actually exhibit is unknown. Needed information for business educators is the extent experienced workers have mastered these skills. Also needed are samples of actual documents administrative support occupation workers read on the job so that the reading difficulty of these documents can be confirmed.

This study will build on the body of knowledge from the 1979 studies of Ross and Salzman who investigated the reading tasks of randomly selected secretarial and clerical workers in the Columbus, Ohio area. Ross completed one-hour observations of 100 beginning office workers, and Salzman collected 2,659 samples of reading, writing, and mathematical activities from 35 beginning and 35 experienced secretaries. Secretarial workers were more likely to be involved in proofreading tasks, while clerical workers were more likely to be involved in verifying tasks. Both groups were expected to read

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office documents for comprehending detail, to be able to understand and use the information that was read. In summarizing the two studies Hillestad (1979) notes that nearly 45% of the secretarial workers' reading involved comprehending detail. Outcomes of the Ross and Salzman studies identify the reading tasks of office workers in one geographic area. The reading tasks of office workers in other geographic areas are likely to be the same or highly similar (Schmidt, 1982).

Statement of the Problem

Are individuals in administrative support occupations equipped with the necessary reading skills, including proofreading, verifying, and comprehending, needed to perform efficiently on the job? What is the nature of the workplace reading materials these workers confront on a daily basis? Further, does the reading proficiency of administrative support workers differ as a function of educational level, age, job level, and length of job experience? To answer these questions, reading skills of administrative support personnel in a selected employment setting completed tests to measure their performance on the three skills. In addition, these individuals provided examples of reading that they complete as part of their work.

Participants for this research were selected from administrative support workers at Virginia Polytechnic Institute and State University. A listing of

890 administrative support personnel was provided by the personnel department. Using the University telephone directory, the investigator ascertained the job title of each person on the listing. The department of personnel provided the job level for each job title. The investigator then called individuals randomly selected from this list until 90 office support personnel agreed to participate in the research study. Although 90 agreed to participate, 60 actually returned the test.

Research Questions

To address the problem of the study, the following specific research questions were answered.

1. What is the reading level of documents actually used by selected administrative support workers?

2. What level of proficiency do selected administrative support workers display in reading office documents?

3. Does reading proficiency of administrative support workers differ as a function of age, educational level, length of job experience, or by job level?

Definitions of Terms

Reading. Locates, understands, and interprets written information in prose and documents--including manuals, graphs, and schedules--to perform task;

learns from text by determining the main idea or essential message; identifies

relevant details, facts, and specifications; infers or locates the meaning of

unknown or technical vocabulary; and judges the accuracy, appropriateness,

style, and plausibility of reports, proposals, or theories of other writers

(SCANS, 1991).

The definitions and components of the following three terms

comprehending detail, verifying, and proofreading are those used in the

Schmidt (1987) study:

Comprehending Detail is determining what is being said in directions for

completing office documents, in policies and procedures manuals, in rules and

regulations, and other similar office publications, then interpreting and

applying the information in the completion of office tasks. The components of

comprehending detail include:

- locating facts or specifics
- recognizing the main idea
- recognizing sequence of information
- perceiving relationships
- selecting relevant details
- summarizing or making generalizations
- recognizing comparison and contrasting information
- interpreting symbols, graphics, or acronyms
- identifying relevant information
- drawing inferences from information
- following directions
- perceiving document structure

Proofreading is the process of reviewing handwritten, typewritten or printed materials to identify errors or inconsistencies that should be corrected in the preparation of the final copy. The components of proofreading are:

- recognizing mechanical errors including punctuation
- recognizing typographical errors
- recognizing transpositions
- recognizing additions
- recognizing omissions
- recognizing placement errors
- recognizing sense of content errors including contradictions and inconsistencies
- reading aloud to detect errors
- reading from right to left to detect errors
- reading with a partner to detect errors

Verifying is determining what is being said in a source document and then assessing the accuracy of some or all of the source document information presented in a different configuration, or format, in another document. The components of verifying are:

- recognizing sequence of information
- perceiving relationships
- recognizing comparison and contrasting information
- perceiving document structure
- locating facts or specifics
- recognizing transpositions
- recognizing mechanical errors
- recognizing additions
- recognizing omissions
- recognizing typographical errors
- reading with a partner to detect errors

Limitations of the Study

Reading in this study is limited to proofreading, comprehending, and verifying of documents. Reading for other purposes was not examined within the scope of this study. Further limitations of the study include the following:

1. Study participants included only administrative support personnel at Virginia Polytechnic Institute and State University who volunteered to participate.

2. Variables measured were limited to detecting selected errors associated with proofreading, verifying, and comprehending an office document. Other variables associated with reading were not included in this study.

3. Generalizations derived from the findings of this study are limited to the population of those individuals at Virginia Polytechnic Institute and State University from whom the sample was selected and can be generalized to other groups only to the extent they resemble this population.

CHAPTER TWO

REVIEW OF LITERATURE

This research study examined the reading skills of administrative support personnel. To locate related literature, the investigator obtained information available from Virginia Polytechnic Institute and State University's library. In addition, an ERIC search was conducted to review literature that addressed reading skills of today's students and workers, reading skills employers indicate as needed, reading materials found in the workplace, and teachers' roles in addressing reading skills.

Reading Skills of Today's Students and Workers

With high rates of functional and cultural illiteracy in the United States today, often attributed to a decrease in reading and an increase in television viewing; the skill of reading is in danger of becoming extinct. However, the importance of reading has not diminished in our technologically oriented society (Hagler & Davis, 1990).

Hagler and Davis (1990) indicate that another area of concern is the ability of many students to read at their appropriate grade level as they reach

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high school completion. Their research includes a comparison of reading abilities among 9-, 13-, and 17-year-olds. A steady decrease in reading ability is clearly indicated as students get older. At age nine, 64% of students are reading at appropriate levels. By age thirteen, only 60% are reading at the appropriate grade level, and by age seventeen, only 39% of students are reading at their appropriate grade level. Even though this research applies to high school students, a continuing decline could be reasonably expected as these students enter college or the workforce. An improvement in students' reading ability is likely to occur only when significant adults encourage and expect expanded activity in the area of reading.

Research further indicates that poor readers remain poor readers year after year (Bracey, 1989), and that poor reading habits started in early childhood continue even into old age (Aiex, 1987). These authors note that teachers, as significant adults in students' lives, should strongly advocate reading to establish early on a tendency among students toward lifelong learning.

Hagler and Davis (1990) emphasize that the skill of reading is developed much as other skills are. A skilled athlete, court reporter, singer, or swimmer has developed the needed skill to the point of automaticity through

extended practice. Until one's reading is automatic, one must expend

significant effort and energy. To develop fluent reading skills, students must

read as many enjoyable, easy-to-read books as possible until the reading skill

becomes automatic. Then reading comprehension skills can be developed.

Only through extended practice to an automatic response can one move to a

higher level of reading and be able to do well in school.

The communication pyramid shown in Figure 1 (Hagler & Davis,

1990) illustrates that effective written and oral communication results from a

foundation of accurate reading, which represents functional literacy. After a

person can read accurately, the person can learn to read automatically through

practice. Reading gives a person needed background information and a larger

vocabulary that allows effective communication between and among coworkers

and acquaintances.

Reading Skills Employers Indicate are Needed

Hirsh (1988) stated that American business leaders in the last few years

have become greatly concerned with young employees' lack of communication

skills. Further, Hirsh explains the illiteracy of mid-level executives as a result

of the lack of background information among the executives. He further

maintains that mid-level executives do not communicate effectively because of

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Effective
communication

- written
- oral

Background information
(cultural literacy)

Automatic reading

Accurate reading
(literacy)
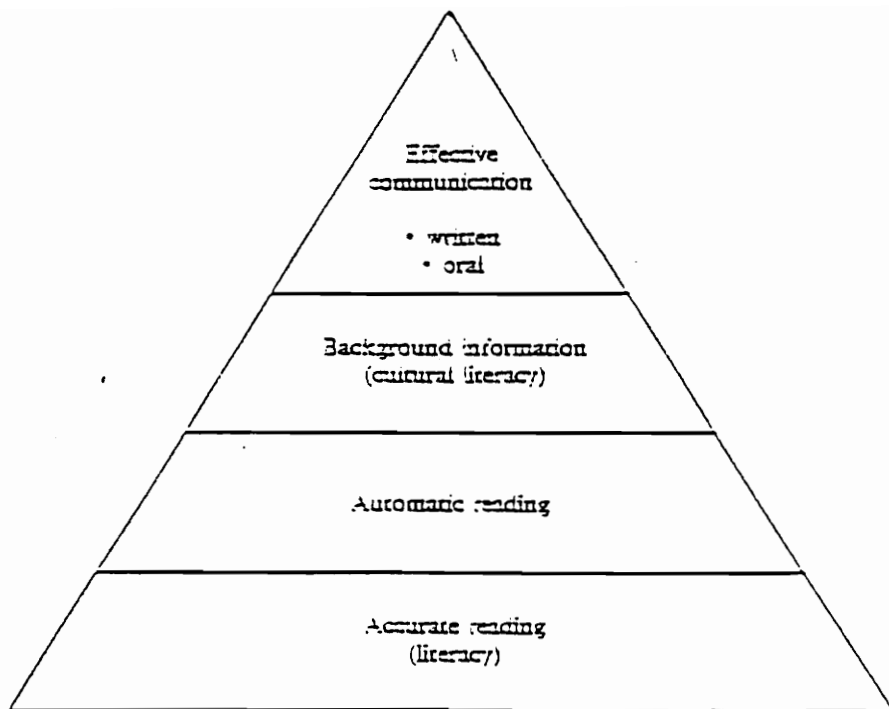
Figure 1. Communication Pyramid (Hagler & Davis, 1990).

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a lack of shared background information among the executives. Reading provides background information that results in effective oral and written communication.

Business managers also perceive proofreading as a vital office skill and feel that business educators should incorporate proofreading or error detection instruction into all business courses offered. Future office workers need to be taught to alter their reading patterns when proofreading (Byfield & Labarre, 1985). Proofreading is a vital task and documents should be proofread more than once. The first reading is for grammar and sense. The second time documents should be read for typographical errors; this can be done by reading right to left or from the bottom of the document to the top. A ruler can be placed under each line as the document is scanned. A variety of proofreading techniques are possible and a consistent and methodical approach to proofreading is essential.

Schmidt (1986) stated that office workers without the reading skills required for the use of software will meet many frustrations on the job. Using the FORCAST procedure to determine the reading grade level of the introductory material for two database software manuals, Schmidt determined the FORCAST reading grade level of Software A to be 10.4, and the FORCAST reading grade level of Software B to be 11.6. With current

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progress in information processing technology proliferating the work place, all types of workers are faced with spiraling information handling tasks. They, consequently, find their need for technical reading competency accelerating. Workers in a broad range of occupations, ranging from users of robotics on production lines, to retail service, to government service, to agriculture are confronted with the need to read and utilize enigmatic technical manuals, including software documentation manuals. Yet, these materials are often prepared with little regard for the proposed users. Further, most employees are provided little on-the-job training about how to use the materials.

Reading Materials Found in the Workplace

The academic community has not yet reached agreement on a common definition of literacy. However, researchers agree that job-related literacy includes several sets of skills, each set arranged along a continuum from very simple cognitive tasks to very complex ones (Craig, 1987).

A measure of adult literacy used to be signing your name, completing five years of school, or scoring at a particular level on a reading test. But a recent report from OERI's (Office of Educational Research and Improvement) National Center for Education Statistics on the National Adult Literacy Survey (NALS), *Adult Literacy in America,* describes adult literacy at five levels in

terms of the literacy skills needed to use various kinds of printed and written information. These include prose literacy, document literacy, and quantitative literacy. Prose literacy is defined as understanding and using information from texts that include editorials, news stories, poems and fiction; document literacy is defined as locating and using information contained in materials that include job applications, transportation schedules, maps, and tables; quantitative literacy is defined as applying arithmetic operations, either alone or sequentially, and using numbers embedded in printed materials such as restaurant checks, order forms, and loan advertisements. The report also analyzes connections between literacy skills and social and economic variables such as voting, reading practices, employment, and earnings. Based on interviews in 1992 with more that 26,000 adults aged 16 and older, this report indicates that:

- 21 to 23 percent--or the equivalent of 40-44 million American adults--demonstrated skills in the lowest of five survey assessment levels. At this level, many, but not all, could perform simple routine tasks involving brief and uncomplicated texts and documents, such as totaling an entry on a deposit slip, locating the time or place of a meeting on a form, and

identifying a piece of specific information in a brief news article.

- Only 18 to 21 percent--34 to 40 million--performed at the two highest levels.

- Older adults are more likely than middle-aged or younger adults to demonstrate limited literacy skills.

- Participants aged 21 to 25 had average scores that were 11 to 14 points lower than the scores of 21 to 25-year-olds assessed in 1985. This decrease may in large part reflect the dramatic increase in young, foreign-born Hispanic adults, many of whom are learning English as a second language. Nevertheless, young people are more literate than older adults, and literacy most likely will increase as younger, more educated generations replace their parents and grandparents.

Although the survey indicated that almost half the individuals scored in the two lowest levels, these individuals did not necessarily see themselves as being "at risk." In fact, 66 to 75% of the adults scoring at the lowest level and 93 to 97% in the second lowest level described themselves as being able to read or write English "well" or "very well" (OERI Bulletin, 1993).

The results of the National Adult Literacy Survey are reported using three scales, each ranging from 0 to 500: a prose scale, a document scale, and a quantitative scale. As indicated in Table 2, the scores on each scale represent degrees of proficiency along that particular dimension of literacy. For example a low score (below 225) on the document scale indicates that the individual has very limited skills in processing information from maps, charts, tables, graphs, forms, and such materials (even those that are brief and uncomplicated). Likewise, a high score (above 375) indicates advanced skills in performing involving a variety of tasks that involve the sue of complex documents (Kirsh, et al., 1993).

In modern society, being literate involves having the knowledge and proficiency needed to process information from documents. Actually, researchers have found that many Americans spend more time reading documents than any other type of material (Gutherie, Seifert, and Kirsh, 1986). Charts, maps, forms, schedules, tables, diagrams, sketches, and graphs are encountered everyday--both at home and at work (Kirsh, et al., 1993). Success in processing documents appears to depend at least in part on the ability to locate information in intricate arrays and to use this information in relevant ways. Procedural knowledge may be needed to transfer data from one source or document to another, as is necessary in completing applications

or order forms (Kirsh, et al., 1993). A simple job-related reading skill is the ability to find applicable facts on a work order, while examples of more complex job-related reading skills include reading training manuals, work-related technical articles, and letters explaining changes in health benefits (Craig, 1987).

Kirsh et al. (1993) state there is agreement that we as a nation must respond to the literacy challenge--not only for the sake of our nation's economy but to ensure that every individual has opportunity for personal fulfillment. The members of the National Governors' Association in 1990 adopted as one of its six goals the following:

> By the year 2000, every adult American will be literate and will possess the knowledge and skills necessary to compete in a global economy and exercise the right and responsibilities of citizenship.

Kirsh et al. (1993) further stated that "just as adults with little money have difficulty meeting their basic needs, those with limited literacy skills are likely to find it more challenging to pursue their goals--whether these involve job advancement, consumer decisionmaking, citizenship, or other aspects of their lives" (p.4).

Most Americans today can write and compute on a simple level. However, this is not sufficient in today's work environment. Successful American businesses are learning that greater productivity depends upon higher

worker skills and the creation of a high-performance work environment. In the past eight years the percentage of workers participating in formal training to improve their current skills increased from 35% to 41%. Yet, most of those upgrading their skills were in white-collar or mid-career jobs. However, it is the entry-level workers and those in low-paying jobs whose current skills will be obsolete in five years (1992 Goals Report).

Teacher Roles in Addressing Reading Skills

Bennet and McLaughlin (1988), in a report prepared for the U.S. Department of Labor and U.S. Department of Education, note that schools are teaching students reading, writing, and mathematical skills that are inconsistent with what workers routinely perform on the job. In response to this inconsistency, the Carl D. Perkins Vocational and Applied Technology Act Amendments of 1990 (Act) states:

> It is the purpose of this Act to make the United States more competitive in the world economy by developing more fully the academic and occupational skills of all segments of the population. This purpose will principally be achieved through concentrating resources on improving educational programs leading to academic and occupational skill competencies needed to work in a technologically advanced society. (Section 2)

Resnick (1987) notes that "...growing evidence...points to the possibility that very little can be transported directly from school to out-of-school use" (p.15). Teachers are, therefore, confronted with the quandary of how to make their training pertinent to the world of work as well as how to present it in ways that will strengthen transfer of learning.

Carnevale, Gainer, and Meltzer (1988) also state that the skills taught by schools are inconsistent with the skills employers require. Often employees know how to read and how to compute; however, when summoned to use these skills, they frequently have difficulty "...because skills must be used in a different context than originally learned" (p.10). Carnevale et al. (1988) further state that the "...traditional classroom...reading instruction is designed to teach discrete reading skills in isolation, for the purpose of increasing a student's ability to follow directions or internalize data for future recall."

Findings of the *Career Preparation Validation Study* (Anderson Committee, 1990) conducted by the State of New York indicate that a majority of entry-level workers require reading skills for information and for critical analysis and evaluation. Thus, from employers' perspectives reading at the high-school level should focus on preparing students to use reading material as a resource to locate information and for developing problem-solving skills through the use of higher-level thinking strategies (Carnevale et al., 1988).

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This instruction requires academic and vocational teachers to collaborate so their subject material becomes relevant to occupational requirements.

Jackson and Johnson (1991) state that "literacy is every teacher's responsibility." They emphasize the need for vocabulary building and maintain that skills for increasing vocabulary should be taught in almost every course. Further, they advocate the thorough teaching of the dictionary and other vocabulary building resources. Using actual office documents can build workplace related vocabulary. Students should be made aware of the abundance of materials that can help them during their lifelong process of vocabulary building. Using office documents to build vocabulary is one way to improve business students work-related reading skills. Hagler and Davis (1990) advocate teachers incorporating a variety of reading activities in their classrooms. A multitude of ways exist to encourage reading in business education classes, with the reasons for promoting reading evident in the positive benefits indicated through research on reading.

Brown (1985) reported on the outcomes of a survey conducted by the Advisory Council for Vocational-Technical Education in Texas that "ability to read and apply printed matter required on the job" was ranked fifth on a list of what employers have determined as improvements needed in preparing individuals to enter into full-time work.

Summary

The preceding literature review indicates a growing concern of

business, industry, and government employers regarding the functional literacy

of not only individuals presently in the workplace, but of today's high-school

students who will become tomorrow's workers. The importance of reading

has not diminished in our technological society; however, the literature

indicates a steady decrease in reading ability as students get older. Employers

have become concerned with the lack of communication skills of young

employees. Research indicates that reading provides background information

that results in effective oral and written communication.

Reading on the job continues to become more complex. While most

Americans can read, write, and compute on a simple level, this is not

sufficient for today's work environment. Workers are confronted with many

documents from which they must be able to locate information; they must then

be able to use this information in relevant ways.

Research indicates that the skills taught by schools are inconsistent with

what employers require. Teachers are presented with the need to make their

training pertinent to the world of work. Educators must respond to the

literacy challenge for the sake of our nation's economy and to ensure that all

individuals have an opportunity for job success and personal fulfillment. Admittedly, having advanced literacy skills does not of itself guarantee individual opportunities. However, a nation in which large numbers of citizens display limited literacy skills has fewer resources with which to meet its goals and objectives, whether they are social, political, civic, or economic.

This study addressed reading proficiency of administrative support workers. It was undertaken to determine how well the technical reading skills of a selected group of these workers match their on-the-job reading requirements. Further, personal characteristics of the workers were examined as they relate to their technical reading proficiency.

CHAPTER THREE

METHODOLOGY

As indicated earlier, the purpose of this study was to ascertain if persons in office support positions have the necessary reading skills of verifying, proofreading, and comprehending needed in today's workplace. This chapter describes the participants, the instrument, and the study research design, including data analysis procedures.

Procedures as detailed in this chapter were followed to answer the three research questions.

1. What is the reading level of documents actually used by selected administrative support workers?

2. What level of proficiency do selected administrative support workers display in reading office documents?

3. Does reading proficiency differ as a function of age, educational level, length of job experience, or by job level?

The Population

Participants for this study were randomly selected from office support personnel at Virginia Polytechnic Institute and State University. A listing of

890 administrative support personnel was provided by the personnel department. Using the University telephone directory, the investigator ascertained the job title of each person on the listing. The department of personnel provided the job level for each job title.

The population obtained from this listing was comprised of all employees in grade levels 4, 5, and 6. These levels were determined by the University personnel office and represented typical administrative support type positions. Level 4 includes Office Service Assistant and Secretary positions; level 5 includes Office Service Specialist and Secretary Senior positions; and level 6 includes Program Support Technician, Fiscal Technician, and Executive Secretary positions. Grades lower than four were aide positions while those positions graded higher than six were typically managerial positions. Therefore, levels 4, 5, and 6 best represent the office support personnel positions needed for this study. Names on the listing from each of the three levels were assigned random numbers. The investigator called individuals on this random listing until 90 office support personnel agreed to participate in the study. Although 90 individuals agreed to participate, 60 actually returned the test, op-scan answer sheet, and demographic survey.

Instrument

The instrument used to measure reading skills of the office support personnel was the "Office Reading Skills Test." The test consists of six pages and is divided into three parts with two pages each: proofreading, verifying, and comprehending detail. The test contains actual office documents and was developed by Schmidt (1989). Through use of the FORCAST reading formula (Caylor, Sticht, Fox, & Ford, 1975), the reading grade level of the documents in the test was determined as indicated in Table 1. The reading levels ranged from 10.9 to 11.7.

The Kuder-Richardson internal consistency reliability values (KR-20) were .678 for scores on the total test, .485 for the proofreading section, .572 for the verifying section, and .427 for the comprehending detail section. These reliability values are based on test outcomes for 1,059 students who participated in the study conducted by Schmidt (1989). Although the reliability values for the test parts are lower than for the total test, they can be considered adequate, as each section of the test contained only twenty items.

Instrument Validity

To determine instrument validity, the investigator asked participants to submit three documents read by office support personnel in their office. Participants were asked to submit documents from the following categories as

Table 1

FORCAST Formula Reading Level of Test Documents[a]

Section of the Test	Grade Level
Proofreading:	
Directions	11.0
Memorandum	10.9
Verifying:	
Directions	10.9
Catalog page and purchase order	11.7
Comprehending detail:	
Directions	11.1
Procedures	11.7
Statements	11.3
Overall directions	10.9

[a]Schmidt (1989)

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determined from the Ross and Salzman study (1979): catalog and rate books, financial and statistical tables, form letters, directions for use of products, letters, memos, manuals, written instructions, reports, pamphlets, order forms, account statements, or reference materials. Using the FORCAST reading formula developed by Caylor, et al. (1975), the reading level of submitted documents was ascertained. The results are listed in Table 2. A comparison of the reading level of the testing instrument to the reading level of the office documents submitted by the participants, revealed that documents contained in the testing instrument were an appropriate measure of proofreading, verifying, and comprehending detail skills. Reading levels on the test instrument ranged from 11.1 to 11.7, while reading levels of the documents submitted by the participants ranged from 11.4 to 11.8.

Instrument Description

The "Office Reading Skills Test" (Schmidt, 1989) consists of six office documents. For the proofreading section, a rough draft and a typed copy of a memorandum are presented. The proofreader must compare the typed copy with the rough draft. The lines of the typed memorandum are numbered 1-10. For items 1-10 on the op-scan sheet, the proofreader must blacken 1 for each line that is correct; and blacken 2 for each line that is incorrect. The proofreader is then given a rough draft and a typed copy of a portion of a

Table 2

FORCAST Formula Reading Level of Documents Submitted by Participants

Type of Document	Number of Documents	Reading Level Grade Average	Average Level
Letters	4	9.8 to 12.5	11.4
Memos	6	10.2 to 13.5	11.6
Reports	2	10.6 to 12.5	11.6
Policy	8	9.6 to 13.2	11.8
Average of all documents			11.6

letter. The same procedure is then followed to blacken in correct or incorrect responses for items 11-20.

The next section of the test was used to ascertain the verifying skills of office support personnel. A page from an office supplies catalog is given along with a sample purchase order. The verifier must compare the supplies listed on the purchase order with those on the catalog page. For items 21-30 on the op-scan sheet, the verifier will again indicate correct and incorrect responses. The second verifying section is a page from an Official Used Car Guide. The verifier must compare prices quoted on trade-in, loan, and retail value with those listed in the Guide. For items 31-40 on the op-scan sheet, 1 is blackened for each correct quote, and 2 is blackened for each incorrect quote.

The final section of the test deals with comprehending detail skills. The procedures for filling out an Interdepartmental Service Request form are listed and then ten statements are provided regarding the information given in those procedures. If the statement is correct, 1 is blackened and if incorrect then 2 is blackened on items 41-50. Finally, items 51-60 are taken from the sick leave policy of an organization. Again ten statements are given regarding the information and the reader must determine if the statement is correct or

incorrect. A total of 60 points is possible on the test. The test appears in Appendix A.

Data Collection

VPI & SU's office support personnel who agreed to participate in the study were each mailed a copy of the "Office Reading Skills Test" and an op-scan sheet to record their answers. A questionnaire concerning demographic data was attached to each test. The test, op-scan sheet, and questionnaire were mailed through campus mail to all who agreed to participate in the study. A cover letter was also included with the packet. It was used to ask participants to send copies of three documents that they must be able to read on their jobs. The op-scan sheets, demographic sheets, and the office documents test instrument were returned to the investigator by campus mail. A copy of the cover letter and demographic sheet are provided in Appendix B.

Research Design

Three research questions were examined to determine the reading proficiency of office support personnel in the workplace. To analyze the data, the statistical software package Number Cruncher was used. A discussion of each research question answered follows.

Question One. What is the reading level of documents actually used by selected administrative support workers?" This question was answered by

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using the FORCAST formula developed by Caylor, et al. (1975) to determine

the reading level of the documents submitted by the participants in the study.

The FORCAST formula uses the percentage of one-syllable words as the basis

for determining reading level; hence, it eliminates artificially raising the

reading level due to recurring technical terms.

Presented in Table 4, page 31, are the results using the FORCAST

formula to determine the reading level of the documents submitted by

participants. A total of 20 documents, including letters, memos, reports, and

policy statements were examined using the FORCAST formula. The range for

these documents was 9.6 to 13.5 reading grade levels, with the average

reading grade level for all documents submitted being 11.6.

Question Two. What levels of proficiency do selected administrative

support workers display in reading office documents? To analyze this research

question, data were obtained from the participants' responses recorded on op-

scan sheets. Descriptive statistics including the mean, minimum, maximum,

standard deviation, standard error of measurement, and KR-20 were computed

for the total test and each of the three parts. The participants were grouped

according to job level. Scores for 4-, 5-, and 6-level employees for the

number of correct responses for each of the three parts of the test as well as

for the total test were determined.

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Question Three. Does reading proficiency of administrative support workers differ as a function of age, educational level, length of job experience, or by job level?

F tests in a one-way ANOVA design (.05 level of significance) were used to determine if significant differences in the reading proficiency level of individuals in the three job levels exist according to age, educational level, length of job experience, or job title for the participants.

Summary of Methodology

Individuals currently employed in office support positions at Virginia Polytechnic Institute and State University in levels 4, 5, and 6 represent the population for the study. Sixty members of the population completed the "Office Reading Skills Test." The test is divided into three sections--proofreading, verifying, and comprehending detail. Participants were provided op-scan forms to mark correct and incorrect responses. The op-scan sheets were scored electronically and the scores analyzed to determine types of skills--proofreading, verifying, or comprehending detail--that were displayed by the participants. Analyses of variance were completed to compare the number of correct responses by respondents demographic characteristics.

CHAPTER FOUR

FINDINGS

As indicated in Chapter One, the purpose of this study was to

determine if office support personnel have the reading skills necessary to cope

with reading demands in the workplace. To meet this purpose, the Office

Skills Reading Test (Schmidt, 1982) was sent by campus mail to ninety VPI &

SU office support personnel who agreed, when contacted by telephone, to

participate in the study. Of the 90 persons contacted and mailed the test

materials, 60 returned the completed op-scan form and demographic

information. In addition, the participants submitted documents they actually

read in their offices.

Participants' Characteristics

This section describes characteristics of the participants in the study.

Number of Participants

A total of 60 individuals employed at VPI & SU participated. All 60

completed the demographic questionnaire and the "Office Reading Skills Test."

A complete summary of the participants demographic information, including

job level, age, years of employment, and educational levels, appears in Table

3.

Table 3

Participants' Demographic Information Summary

Category	Frequency	Percent
Age:		
18-25	5	8.33
26-35	14	23.33
36-55	38	63.33
56+	3	5.00
Job Level:		
4	7	11.67
5	33	55.00
6	20	33.33
Education:		
High School Diploma	16	26.67
Some College, No Degree	24	40.00
Associate Degree	8	13.33
Business School	4	6.67
Baccalaureate Degree	6	10.00
Master's Degree	2	3.33
Employment Fulltime:		
1-5 years	9	15.00
6-10 years	13	21.67
11-20 years	24	40.00
20+ years	11	18.33
Parttime:		
1-5 years	2	3.33
20+ years	1	1.67

A majority of the participants (38) indicated on the demographic survey that they were in the 36-55 age bracket. Fourteen were aged 26-35; 5 were aged 18-25; and 3 were over age 55.

Most participants (33) indicated that they worked at job level five; while 20 worked at level six, and 7 at level four. With regard to educational level, 24 participants indicated they have some college, but no degree; 16 participants indicated a high school diploma; 8 participants indicated an associates degree; 4 participants attended business school; 6 participants indicated a baccalaureate degree; and 2 indicated a master's degree.

Regarding length of job experience, the following information about participants was revealed: 24 participants had 11-20 years of experience; 13 participants had 6-10 years experience; and 9 participants had 1-5 years of experience. Additionally, three participants indicated they were part-time employees. Two of the part-time employees indicated 1-5 years of experience and one indicated 20+ years of experience.

Research Question One

The first research question to be answered in the study was, "What is the reading level of documents used by selected administrative support workers?" To answer this question, participants in the study were asked to submit actual documents read in their offices. Letters, memos, reports, and

policy guides were submitted. Using the FORCAST reading formula

developed by Caylor, et al. (1975), the reading levels of submitted documents

were determined. The range of reading levels was 9.6 to 13.5 with the

average of all documents being at grade level 11.6. This was consistent with

the previous findings of Ross and Salzman (1979) in which the reading level of

all office documents examined ranged from grade level 8.8 to 15.8, with the

average grade level being 12.3. Also, this was consistent with the findings of

Schmidt (1987) in which the reading level of 121 office documents examined

ranged from grade level 9.7 to 15.8. The average grade level of the 121

documents collected was 12.3. The documents were collected from ten

different organizations including a bank, space industry manufacturer, town

administration office, hospital, insurance company, chemical industry

manufacturer, railroad, county administration office, school division office,

and university continuing education center office.

Research Question Two

The second research question to be answered was, "What level of

proficiency do selected administrative support workers display in reading

office documents?" To answer this question, means, standard deviations, and

minimum and maximum values for participants' scores on the 60-item test and three 20-item parts of the test were compiled. They are listed in Table 4.

Sixty points were possible on the test, with test scores ranging from a maximum score of 58 to a minimum score of 40. Test score frequencies were as follows:

Score	Frequency
58	2
57	6
56	6
55	13
54	10
53	4
52	6
51	2
50	4
49	2
46	1
45	2
40	2

60 Total

As shown in Table 4, the mean score for the total test was 53.2 with a standard deviation of 3.78. Scores for the three parts of the test were similar, with means ranging from 17.2 to 18.4 and standard deviations ranging from 1.45 to 1.96. The mean percent correct for the total test was 88.6%. For the three parts, the mean percent correct was 86% for proofreading, 88% for

Table 4

Test Statistics for the Total Test and the Three Parts

Test	Mean	Standard Deviation	Min. Value	Max. Value	Standard Error
Total test	53.2	3.78	40	58	2.15
Proofreading	17.2	1.86	12	20	.24
Verifying	17.6	1.96	9	20	.25
Comprehending	18.4	1.45	12	20	.19

verifying, and 92% for comprehending detail.

Research Question Three

The third research question to be answered in the study was, "Does reading proficiency differ by age, educational level, length of job experience, or by job level?" An F test in a one-way ANOVA design was used to determine if a significant difference of reading proficiency level of the three job levels exists according to age, educational level, job title, and the length of job experience. Tables 5-8 indicate there were no significant differences in reading ability according to any of these demographic characteristics.

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Table 5

Analysis of Variance Outcomes for Test Scores by Age

Variable	DF	Sum of Squares	Mean Squares	F Value	P > F
Age	3	4.38	1.46	0.41	0.74
Error	56	200.60	3.56		
Total	59	204.98			

Age	N	Mean	Standard Error
18-25	5	55.2	1.73
26-35	14	52.8	1.03
36-55	35	53.0	.63
56+	3	53.3	2.23

Table 6

Analysis of Variance Outcomes for Test Scores by Educational Level

Variable	DF	Sum of Squares	Mean Squares	F Value	P > F
Education Level	5	86.34	17.26	1.21	0.32
Error	54	771.31	14.28		

Education Level	N	Mean	Standard Error
High School	16	51.6	.95
Some College no degree	24	54.1	.79
Associate Degree	8	52.1	1.34
Business School	4	55.0	1.89
Baccalaureate	6	53.1	1.43
Master's Degree	2	55.0	2.67

Table 7

Analysis of Variance Outcomses for Test Scores by Length of Time on the Job

Variable	DF	Sum of Squares	Mean Squares	F Value	P > F
Length of Employment	3	10.15	3.38	0.22	0.88
Error	53	819.77	15.46		
Total	56	829.93			

Length of Employment:	N	Mean	Standard Error
1-5 years	9	53.0	1.31
6-10 years	13	52.5	1.09
11-20 years	24	53.5	.80
21+ years	1	52.7	1.19

Table 8

Analysis of Variance Outcomes for Test Scores by Job Title

Variable	DF	Sum of Squares	Mean Squares	F Value	P > F
Job Title	2	25.53	12.77	0.87	0.42
Error	57	832.12	14.59		
Total	59	857.65			

Job Title	N	Mean	Standard Error
4	7	54.9	1.25
5	33	52.8	.67
6	20	53.2	.85

CHAPTER 5

SUMMARY, IMPLICATIONS, AND CONCLUSIONS

This study was conducted to determine whether office workers have the necessary reading (proofreading, verifying, comprehending) skills required to perform efficiently in the workplace. It was based on previous research completed by Ross (1980), Salzman (1979), and Schmidt (1982) and adds to the body of knowledge related to skills required for reading and using office documents. In this section, a summary, conclusions, and implications are presented based on the data gathered and analyses of it.

Summary

This section summarizes information about the study purpose, participants, instrument, and methodology.

Purpose

The purpose of this study was to examine the reading skills needed and developed by persons in office support positions. In particular, the study addressed the reading skills of proofreading, verifying, and comprehending detail as used in today's workplace.

Participants

Participants for this study were randomly selected from office support personnel at Virginia Polytechnic Institute and State University. A listing of 890 administrative support personnel was provided by the personnel department. To obtain a sample from this listing, the population was divided into grade levels 4, 5, 6 as determined by the University personnel office. These were typical administrative support type positions. The names on the listing in each of the three levels were assigned random numbers. The investigator called individuals on this random listing until 90 office support personnel agreed to participate in the study. Although 90 individuals agreed to participate, 60 actually returned the test, op-scan answer sheet, and demographic survey.

Instrument

The instrument used to measure the reading skills of the sample of office support personnel is the "Office Reading Skills Test." The test consists of six pages and is divided into three parts with two pages each: proofreading, verifying, and comprehending detail. The test developed by Schmidt (1989) contains actual office documents with reading levels corresponding to average reading levels for office documents collected from a variety of sources.

Methodology

Three research questions were answered to determine the reading level of documents read by the participants and their proficiency in reading office documents. To analyze the data, the statistical software package Number Cruncher was used. The participants were asked to submit office documents that they must be able to read on their jobs. The reading level of these documents was determined by using the FORCAST formula. The average reading level of all documents submitted was 11.6. To determine work-related reading proficiency of the participants, scores were obtained from their responses recorded on op-scan sheets for the total test, and each of the three test parts. Mean, minimum, maximum, standard deviation, standard error of measurement, and KR-20 values were computed for the total test and each of its three parts. To determine if reading scores differed by age, educational level, length of job experience, or by job level, F tests in an ANOVA design (.05 level of significance) were used.

Findings

Sixty office support personnel at VPI & SU in levels 4, 5, 6 participated in this study. The demographic sheets returned by the participants indicated that the majority, 38, of the participants were age 36-55. More participants were in grade level five. All participants had at least a high

school diploma and 24 indicated they had some college but no degree. The majority of participants had 11-20 years of job experience.

Question One. What is the reading level of documents actually used by selected office support workers? This question was answered by using the FORCAST formula developed by Caylor, et al. (1975). The reading levels for documents submitted by participants ranged from 9.6 to 13.5, with the average reading grade level for all documents submitted being 11.6.

Question Two. What levels of proficiency do selected office support personnel display in reading office documents? The mean for all participants on the total test was 53.15 with a minimum score of 40 and a maximum score of 58 out of a total of sixty points.

Question Three. Does reading proficiency differ for office support personnel by age, educational level, length of job experience, or job title? To answer this question, an F test in a one-way ANOVA design was used to determine the reading proficiency level of participants. No significant differences were found in the reading proficiency level of participants according to any of these factors.

Conclusions

The purpose of this study was to determine if individuals in administrative support occupations are equipped with the necessary reading

skills, including proofreading, verifying, and comprehending detail, needed to perform efficiently on the job?

For the first research question, the reading level of documents read on the job by participants was determined. Findings revealed the reading difficulty of materials used on the job in the office support occupations of the participants to be on average at the 11.6 grade level, with a range from the 9.6 to 13.5 grade level. Previous analyses of the reading level of office documents by Schmidt (1987) provided similar results, with a reading level of 121 documents analyzed varying from 9.7 to 15.8, with an average level of 12.3. Thus, this study again substantiates that business educators need to develop an awareness of the high level of technical reading skills administrative support workers need to read office documents.

For the second research question, the level of reading proficiency of office documents of the administrative support workers who participated in the study was examined. Participants had a mean score of 53.15 on the total test out of 60 possible points. This is an average score of 88.58%. The majority of these workers had been on the job 11-20 years and were in the 36-55 age bracket. All participants indicated their educational level with at least a high school diploma, with the majority indicating some college but no degree. The participants averaged roughly one error per document completed for the study,

6 documents with 10 items each. Compared to the performance of high school students in Schmidt's 1982 study, who averaged roughly two errors per document, the participants in this study did considerably better. However, considering the number of years experience and the educational level of the participants, the extent of items missed on the Office Skills Test, which required reading the type of documents they handle every day, is cause for concern. Mishandling, on average, 10% of information processed due to reading errors could have serious implications for efficiency of office operations, leading to time wasted when information must be reprocessed.

For the third research question, does reading proficiency differ by age, educational level, length of job experience, or by job title was examined. No statistically significant differences were found for participants according to age, length of job experience, job title, or educational level. Therefore, none of these demographic factors related to reading proficiency for participants in this study. This finding indicates that both experience on the job and more education do not lead to more job-related reading proficiency.

Discussion

Although there were no statistically significant results in this study, it is imperative to discuss some of the limitations that may relate to generalizing from the findings of the study. The study was limited to the sixty participants

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who are intact administrative support personnel at Virginia Tech. The scope of reading proficiency was limited to the detecting of errors associated with proofreading, verifying, and comprehending detail. Thus, generalizations are delimited to the population of those individuals at Virginia Tech from whom the sample was selected and can only be generalized to other groups to the extent they resemble this population.

Implications

Based upon the findings and conclusions of this study, the following implications for classroom instruction and additional research are provided.

Implications for Classroom Instruction

These job-related reading skills of proofreading, verifying, and comprehending detail are important skills for administrative support workers. Based on the findings from this and previous studies the following recommendations are made:

1. Business educators should include instruction in the skills of proofreading, verifying, and comprehending detail in their classes.

2. Materials similar to those developed for this study and materials directly from businesses should be secured by business educators for use in the classroom. Students should be provided documents to read

that are similar to and at the level of difficulty they will encounter on the job.

3. Handwritten and rough draft materials should be given to students to read and verify.

4. Business students should be provided opportunities whereby the content of letters, forms, and tables is read and used in processing information.

5. Business students should be exposed to job-related materials requiring reading skills ranging from the ninth grade level to at least two years beyond high school.

Implications for Further Research

1. Examine impact of the use of similar office reading materials with students preparing for office occupations.

2. Determine effectiveness of using the components of proofreading, verifying, and comprehending detail as the basis for job-related reading instruction.

3. Compare on-the-job productivity with office workers' skill levels for proofreading, verifying, and comprehending detail. Workers who exhibit higher levels of the skills should be able to process the documents more accurately and efficiently and thus achieve higher levels of productivity.

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4. Examine a variety of office documents for common characteristics. If common characteristics are found, these characteristics can serve as a starting point for preparing students to use the documents.

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APPENDIX A

TEST INSTRUMENT

OFFICE READING SKILLS TEST

The information on this test has been taken from actual materials used in business offices. In completing the test, you will use three unique skills required of office workers--proofreading, verifying, and comprehending detail. In order for your test results to be useful, please follow directions carefully.

FIRST: Use a No. 2 pencil on your Op-Scan score sheet. Begin by recording your collegiate level (sophomore, junior, senior, or graduate) on the Name line. On the course line, list any business education or reading methods courses you are now enrolled in.

```
┌─────────────────────────────────────┐
│ NAME _____ │  Grade Level
│          LAST      FIRST     MIDDLE  │
│                                      │
│ COURSE_____  │  Course(s)
│          DEPT.     NO.     HOUR NO.  │
└─────────────────────────────────────┘
```

SECOND: In the Pledge block at the right, list the names of any business education or reading methods courses you have completed.

```
┌──────────────────────┐
│        PLEDGE         │
│                       │
│                       │
│                       │
│                       │
│                       │
│                       │
│                       │
│                       │
└──────────────────────┘
```

THIRD: Read each page of the test carefully. As you answer the items, blacken ① if the line or statement is CORRECT; blacken ② if the line or statement is INCORRECT.

         Example

         ⎯ 1 ●②③④⑤⑥⑦⑧⑨⑩   ←Correct line or statement
         ⎯ 2 ①●③④⑤⑥⑦⑧⑨⑩   ←Incorrect line or statement

         RECORD YOUR ANSWERS ON THE OP-SCAN SHEET.

         DO NOT WRITE ON THE TEST.

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A roughdraft and a typed copy of a memorandum appear below. Compare the typed copy with the roughdraft. Note that the lines of the typed memorandum are numbered 1-10. For items 1-10 on the Op-Scan sheet, blacken ① for each line that is CORRECT; blacken ② for each line that is INCORRECT.

To: Karl Rogers, Sales Manager   May 15, 1986
From: Julia Mardin, Sales Rep.
Subject: Fashion House Furniture Sale Order

Mr. Craswell of Fashion House Furniture has contacted me regarding
the shipment we made on ~~the~~ April 25. Of the three reclining
chairs included in the shipment, two are incorrect color and the
other is ~~~~~ defective.
I could not reach you by phone and am sending this ~~~~ to request
that three new recliners be forwarded to Fashion House Furniture immediately.
They are Catalog No. HQ 5136, two of them in Azure Blue Plush and
the other in ~~~~~~~ Russet Corduroy.
You can contact me Tuesday night at the ~~~~~~~ Shelton Motel in
Lynchburg, (804-961-3359) if you want to discuss this shipment
further. Also, I would like to request that the matter of
incorrect shipments be placed on the agenda for the next
sales staff meeting, which will be held next Tuesday,
May 23, 1986.

A B C FURNITURE COMPANY
474 Hunter Lane   MEMORANDUM
Harrisonburg, VA 22801

TO: Karl Rogers, Sales Manager
FROM: Julia Mardin, Sales Rep.   DATE: May 15, 1981
SUBJECT: Fashion House Furniture Sales Order

Mr. Craswell of Fashion House Furniture in Roanoke has contacted me regarding the   1.
shipment we made on April 25. Of the three reclining chairs included in the ship-   2.
ment, two are the incorrect color and the other is defective.   3.

I could not reach you by phone and am sending this memo to request that three new   4.
recliners be forwarded to Fashion Furniture House immediately. They are catalog   5.
No. HQ 5136, two of them in Azure Blue Plush and the other in Russet Corduroy.   6.

You can contact me Monday night at at the Shelton Motel in Lynchburg (804-961-3359)   7.
if you want to discuss this shipment further. Also, I would like to report that   8.
the matter of incorrect shipments be placed on the agenda for the next sales staff   9.
meeting, which will be held next Tuesday, May 23, 1981.   10.

60

A roughdraft and a typed copy of a portion of a letter appear below. Compare the typed copy with the roughdraft. Note that the lines of the typed letter are numbered 11-20. For items 11-20 on the Op-Scan sheet, blacken ① for each line that is CORRECT; blacken ② for each line that is INCORRECT.

May 30, 1986

Dear Prospective Customer:

PACT offers a full product line to fit your specific needs. The new PC Scan is a multifunction scanner designed for use with IBM ~~per~~ personal computers or compatibles. With PACT's Text Pac software, PC Scan reads text into most of the ~~the~~ word processing programs used in office personal computers.

For volume ~~input~~ input requirements and for users of office automation systems, the ~~WorkLess~~ WorkLess Station reads text at a speed of up to 240 pages per ~~minute~~ hour. ~~Both~~ the PC Scan and the WorkLess Station include the proprietary PACT typestyle recognition ~~recogni~~ software which has established PACT firmly as the leader in this market.

May 20, 1986

Dear Prospective Customer:

```
PACT offers a full product line to fit your specific needs.      11.
The new PC Scan is a multifunction scannner designed for use     12.
with IBM personal computers or compatables.  With PACT's Text    13.
Pac sotfware, PC Scan reads text into most of the popular word   14.
processing programs used on office personal computers.           15.

For volume input requirments and for users of office automa-     16.
tion systems, the WorkLess Station reads text at a speed of up   17.
to 240 pages per hour.  Both the PC Scan and the WordLess Station 18.
include the proprietary PACT typestyle recognition software      19.
that has established PACT firmly as the leader in this market.    20.
```

A page from the Ace Office Supplies catalog appears directly below. It was used to order the supplies listed on the purchase order at the bottom of the page. Note that the lines of the purchase order are numbered 21-30. Compare the supplies listed on the purchase order with those on the catalog page. For items 21-30 on the Op-Scan sheet, blacken ① for each line that is CORRECT; blacken ② for each line that is INCORRECT.

ACE OFFICE SUPPLIES

All supplies are sent by Parcel Post or United Parcel Service. Terms are 2/10, N/30.

Number	Unit	Price	Description
4845-005	PKG	1.95	PADS, COTTON, NO. 4-4931, 100/PKG
7340-040	EA	1.47	FILE BOX, STEEL, 3 X 5 CARD, GRAY
7406-100	BOX	3.78	FASTENER, LOOSE LEAF, 3-IN DEPTH, 8¼-IN C-C
7406-105	BOX	.75	FASTENER, PAPER, BRASS 1-IN. SHANK, 100/BOX
7419-005	BOX	3.43	FOLDER, MANILA, LEGAL SIZE
7428-125	EA	2.08	PAD, DESK BLOTTER HOLDER, 19 X 24, GREEN
7429-050	DOZ	2.93	PAD, INTER-OFFICE MEMO
7429-062	DOZ	1.78	PAD, SMALL LEGAL, 5 X 8, RULED, WHITE
7445-035	DOZ	1.91	MARKER, FELT TIP, WATERPROOF, RED
7445-040	DOZ	2.12	MARKER, FELT TIP, WATERPROOF, BLACK

CONTACT LENS CLINIC
West Main Street
MARION, VA 24354
(703) 783-3711

Order No. 6679-0418
Date May 15, 1981
Terms 2/10, N/30
Shipped via United Parcel Service

To
Ace Office Supplies
3200 Franklin Road
Roanoke, VA 24112

Quantity	Cat. No.	Description	Price	Total	
5 EA	7340-040	FILE BOX, STEEL, 3 X 5 CARD, GRAY	1.47	7.35	21.
10 BOX	7406-100	FASTENER, LOOSE LEAF, 3-IN DEPTH,			22.
		8¼-IN C-C	3.78	37.80	23.
10 BOX	7419-005	FOLDER, MANILA, LEGAL SIZE	3.34	33.40	24.
10 BOX	7428-125	PAD, DESK BLOTTER HOLDER, 19 X		.	25.
		24, BLUE	2.08	20.80	26.
6 DOZ	7429-050	PAD, INTER-OFFICE MEMO	2.93	17.58	27.
6 DOZ	7429-026	PAD, SMALL LEGAL, 5 X 8, RULED,			28.
		WHITE	1.78	10.68	29.
6 DOZ	7445-035	MARKER, FELT TIP, WATERPROOF, RED	1.91	11.46	30.

Purchase Order   by _Linda L Lowman_

VERIFYING

The information below is from an Official Used Car Guide. The prices at the bottom of the page were quoted from the Guide. Note that the quotes are numbered 11-40. For items 11-40 on your Op-Scan sheet, blacken ① for each quote that is CORRECT; blacken ② for each quote that is INCORRECT.

OFFICIAL USED CAR GUIDE

Av'g Trd-In	Body Type	Model		Av'g Loan	Av'g Retail
1983 ESCORT/EXP-4T-PS-FWD					
ESCORT - 4 Cyl.					
4850	H'back	2D	L	4375	5625
5000	H'back	4D	L	4500	5775
5150	Sta Wgn	4D	L	4650	5950
5300	H'back	2D	GL	4650	5950
5450	Sta Wgn	4D	GL	4925	6250
5500	H'back	2D	GLX	4950	6300
5650	H'back	4D	GLX	5100	6475
5800	Sta Wgn	4D	GLX	5225	6625
5750	H'back	2D	GT	5175	6575
EXP. - 4 Cyl.					
5225	Sport Coupe	2D		4725	6025
Additional Features					
450	ADD	Air Conditioning		425	525
50	ADD	Rear Wind. Defroster		50	75
75	ADD	Speed Control		75	100
100	ADD	Aluminum Wheels		100	125
150	ADD	Flip-Up Roof		150	200
100	ADD	AM/FM Stereo		100	125
125	ADD	AM/FM Stereo/Tp		125	150
150	ADD	Leather Trim		150	200
150	ADD	Squire Wagon Opt.		150	200
100	ADD	2-Tone Paint		100	125
200	DEDUCT	Manual Trans.		200	200
125	DEDUCT	Conv. Steer.		125	125

Prices quoted on trade-in, loan, and retail values as follows:

		Trade-In	Average Loan	Average Retail
11.	1983 Escort, Sta Wgn, 4D GLX; $200 will be added to the retail value for 2-tone paint.	5800	5225	6625
12.	1983 Escort, H'back, 4D L; $75 will be added to the trade-in value for speed control.	5000	4500	5775
13.	1983 Escort, H'back, 2D GLX; $50 will be added to the loan value for rear wind. defroster.	5650	4950	6300
14.	1983 Escort, Sport Coupe, 2D; $200 will be deducted from retail value for manual trans.	5225	4725	6025
15.	1983 Escort, Sta Wgn, 4D L; $200 will be deducted from retail value for leather trim.	5150	4650	5950
16.	1983 Escort, H'back, 2D GL; $125 will be added to the retail value for AM/FM Stereo/Tp.	5300	4650	5950
17.	1983 Escort, H'back, 2D GT; $125 will be deducted from the trade-in value for conv. steer.	5750	5175	6575
18.	1983 Escort, H'back, 2D L; $150 will be added to the retail value for flip-up roof.	4850	4375	5625
19.	1983 Escort, H'back, 4D GLX; $450 will be added to the retail value for air conditioning.	5650	5100	6475
.	1983 Escort, Sta Wgn, 4D GL; $150 will be added to the trade-in value for Squire Wgn. opt.	5450	4925	6250

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The procedures for filling out an Interdepartmental Service Request form are listed below. Refer to them for items 41-50 at the bottom of the page. On the Op-Scan sheet, blacken ① for each statement that is CORRECT; blacken ② for each statement that is INCORRECT.

PROCEDURES FOR USE OF INTERDEPARTMENTAL SERVICE REQUEST FORM

- This Interdepartmental Service Request form is to be used for securing printing, copying, and related services from the Printing Department and Copy Center.

- The requesting department will fill out the form, including complete budget code and appropriate signature for approval, and will forward the first two copies to the department providing the service.

- For all transactions over $200, the transaction will be held by the department providing the service, which will estimate the price on the first two copies and forward the second (green) copy to the Accounting Office.

- The department that furnishes the service will prepare a sales ticket to charge your account. The sales ticket will be processed directly with the Accounting Office.

- Refer all inquiries about deliveries, prices, and other details directly to the department that will furnish the service.

- You may use this form to set up "blanket orders" with service units.

INTERDEPARTMENTAL SERVICE REQUEST

DATE: _____

No. B · 8376 _____

INSTRUCTIONS ON REVERSE SIDE OF REQUESTING DEPARTMENT COPY

SERVICE REQUEST TO:	FURNISH & CHARGE TO:
DEPARTMENT _____	DEPARTMENT _____
BLDG. & ROOM _____	DELIVER TO BLDG. & ROOM _____
ATTENTION _____	ATTENTION _____
SERVICE REQUIRED BY _____ (Date)	FOR FURTHER INFORMATION CONTACT
	(Name) (Phone No.)

THE MATERIALS OR SERVICES SPECIFIED BELOW ARE REQUESTED TO BE FURNISHED AT AN ESTIMATED COST NOT TO EXCEED $ _____	QUANTITY	UNIT

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41. The department that provides the service is to get three copies of the form.

42. The sales ticket is processed directly with the requesting department.

43. When the price is over $200, the estimated price is recorded on the green copy.

44. The requesting department fills out the form.

45. The Accounting Office should be contacted regarding inquiries about price.

46. The budget code is provided by the Printing Department or Copy Center.

47. The requesting department fills out the sales ticket.

48. The appropriate signature is provided by the requesting department.

49. The form cannot be used for "blanket orders."

50. The department providing the service estimates the price if the estimated cost is over $200.

The information below is part of the sick leave policy of an organization. Refer to the sick leave policy for items 51-60 at the bottom of the page. For items 51-60 on the Op-Scan sheet, blacken 1 for each statement that is CORRECT; blacken 2 for each statement that is INCORRECT.

SICK LEAVE

1. All full-time employees shall accrue sick leave at the rate of one-fourth (1/4) day per week. All part-time employees working at least an average of twenty hours per week during a two-week period shall accrue sick leave at the rate of one-eighth (1/8) day per week. Time taken off by employees using sick leave shall be counted as time worked for the purpose of annual and sick leave accumulation. New employees shall be eligible to use sick leave as soon as it is accrued. The Town shall pay sick leave at the rate of eight hours of regular pay for each day of approved sick leave.

    1. Employees may use sick leave for the following purposes:

        a. Period of personal illness;
        b. A death in the immediate family, with a maximum of five (5) days granted per occurrence;
        c. Serious illness of the immediate family where the employee's attendance is required;
        d. Medical appointments for the employee or his/her child, spouse, or parent; and
        e. Pregnancy and related medical conditions.

    1. Employees must notify their supervisor no later than one hour into their normal scheduled work day if they intend to use sick leave.

    A Department Head may establish procedures for earlier notification of intent to use sick leave when Town operations require scheduling an employee to substitute for the individual who is ill.

    4. The Department Head or his/her designee shall have the authority to grant sick leave. Whenever a question arises concerning the legitimacy of the use of sick leave, a certifying statement from a practicing physician may be required. Failure of an employee to provide proof of illness may constitute a reason for nonpayment for the days taken. This failure also may be construed as grounds for further disciplinary action.

51. An employee may use sick leave for a medical appointment for his/her spouse.

52. Employees must notify their supervisors at least one day prior to taking sick leave.

53. Part-time employees are eligible for sick leave at the rate of 1/4 day per week worked.

54. Employees can be asked to furnish proof of illness if the legitimacy of their sick leave is questioned.

55. The Department Head has the authority to grant sick leave with the permission of the Town Manager.

56. Employees are granted a minimum of five (5) days sick leave for a death in the immediate family.

57. The sick leave policy specifies five reasons why an employee may claim sick leave.

58. New employees become eligible for sick leave after they have been employed for six months.

59. Time taken off by employees using sick leave is counted as time worked for the purpose of annual and sick leave accumulation.

60. Employees must work a minimum of twenty hours during the month to qualify for sick leave.

APPENDIX B

COVER LETTER

DEMOGRAPHIC QUESTIONNAIRE

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April 22, 1994

Thank you very much for agreeing to take part in my master's thesis research regarding the reading proficiency of office workers. The results of this survey will be used in reviewing and strengthening programs for present and future students.

Your name was drawn in a random sample of all office personnel employed at Virginia Tech. In order that the results accurately represent all office personnel, it is very important that each questionnaire be completed and returned. Responding should take approximately forty-five minutes, but fully completed responses will be critical to the success of this study. I urge you to complete the questionnaire and return it to me by campus mail by May 2, 1994.

You may be assured that your responses will remain completely confidential. The answer sheet has an identification number that will enable me to check your name off the mailing list when the questionnaire is returned. When all questionnaires are received, the list of names will be discarded. Your name will never be placed on the answer sheet.

You need only return the op-scan form and the demographic questionnaire. However, I do have an additional request. I would like for you to share with me three documents read by office workers in your department. If you could include a photocopy of a page from the following categories of documents, it would be most appreciated:

> catalog and rate books; financial and statistical tables; form letters; directions for the use of products; letters; memos; manuals; written instructions; reports; pamphlets; order forms; accounts statements; or reference materials.

These documents will be assessed to determine the reading level of materials used by office personnel.

If you have questions about the study, please call me at 231-5471 or (703) 639-6535. Your cooperation is greatly appreciated.

Sincerely,

Margaret Moore

Margaret Moore
Vocational and Technical Education (0254)
214 Lane Hall

DEMOGRAPHIC QUESTIONNAIRE

JOB TITLE: _____

AGE: (Please check one)

___ 18-25   ___ 36-55
___ 26-35   ___ 55 and over

EDUCATION: (Please check all that apply)

___ General Education Development (GED) certificate
    ___ with business courses;   ___ without business courses

___ High School Diploma
    ___ with business courses;   ___ without business courses

___ Associate Degree
    ___ with business courses;   ___ without business courses

___ Business School training

___ Baccaulearate Degree
    ___ with business courses;   ___ without business courses

___ Master's Degree
    ___ with business courses;   ___ without business courses

___ Some college, no degree
    ___ with business courses;   ___ without business courses

EMPLOYMENT:
Please check years of experience in an office-related administrative support occupation.

Full-time Employment	Part-time Employment
___ less than one year	___ less than one year
___ 1-5 years	___ 1-5 years
___ 6-10 years	___ 6-10 years
___ 11-20 years	___ 11-20 years
___ 20 + years	___ 20 + years

APPENDIX C

TEST STATISTICS

Test Statistics

Test	Mean	Standard Deviation	KR-20 Value	Standard Error
All Participants:				
Total test	53.15	3.78	.678	2.145
Proofreading	17.18	1.86		.241
Verifying	17.616	1.96		.253
Comprehending detail	18.3	1.45		.188
Age:				
18-25				
Total Test	55.20			.846
Proofreading	18.00			.894
Verifying	18.00			.894
Comprehending detail	19.20			.652
26-35				
Total Test	52.79			1.031
Proofreading	17.21			.506
Verifying	17.36			.324
Comprehending detail	18.07			.390
36-55				
Total Test	53.00			.625
Proofreading	17.01			.307
Verifying	17.63			.324
Comprehending detail	18.24			.236
56+				
Total Test	53.33			2.227
Proofreading	16.67			1.09

Verifying	18.00	1.15
Comprehending detail	18.67	.843
Education		
High School		
Total Test		
Proofreading	16.37	.452
Verifying	17.18	.495
Comprehending	18.06	.371
Some College, no degree		
Total Test		
Proofreading	17.65	.377
Verifying	17.95	.412
Comprehending	18.43	.524
Associate Degree		
Total Test		
Proofreading	17.13	.639
Verifying	16.75	.699
Comprehending	18.00	.524
Business School Training		
Total Test		
Proofreading	18.75	.904
Verifying	18.25	.989
Comprehending	18.00	.741
Baccalaureate		
Total Test		
Proofreading	16.57	.683
Verifying	18.00	.748
Comprehending	18.57	.561
Master's Degree		
Total Test		
Proofreading	17.50	1.28
Verifying	18.00	1.39
Comprehending	19.50	1.05

Years Employment

1-5 years
Total Test
Proofreading 17.22 .617
Verifying 17.00 .667
Comprehending 18.78 .491

6-10 years
Total Test
Proofreading 16.31 .513
Verifying 18.15 .555
Comprehending 17.92 .409

11-20 years
Total Test
Proofreading 17.63 .378
Verifying 17.41 .604
Comprehending 18.42 .301

21+
Total Test
Proofreading 16.83 .558
Verifying 17.91 .604
Comprehending 17.91 .445

Job Level

Level 4
Total Test
Proofreading 18.14 .703
Verifying 18.14 .749
Comprehending 18.20 .552

Level 5
Total Test
Proofreading 17.03 .324
Verifying 17.57 .345
Comprehending 18.12 .254

Level 6

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Total Test		
Proofreading	17.10	.416
Verifying	17.50	.443
Comprehending	18.60	.326

MARGARET MOORE

1014 Chesley Street
Radford, VA 24141
Phone: (703) 639-6535

EDUCATION	M.S. Vocational & Technical Education	December 1994
	VPI & SU	*Magna Cum Laude*
	Blacksburg, VA 24061	
	Area of specialization—Business Education with a cognate in Counseling	
	B.S. Business Education	May 1993
	VPI & SU	*Magna Cum Laude*
	Blacksburg, VA	GPA 3.6125 overall; Major 3.75/4.00
	A.A. Business Management	December 1991
	New River Community College	*Summa Cum Laude*
	Dublin, VA 24084	GPA 3.89
EXPERIENCE	Adjunct Instructor	
	New River Community College	9/93—present
	Research Assistant	
	Dr. B. June Schmidt VPI&SU	12/93—present
	Adult BCA Class Instructor	
	Radford High School	Jan-Mar,1994
	Student Teacher & Substitute Teacher	
	Radford High School	Feb-May,1993
		5/93—present
		ɕ
CLUBS &	Phi Beta Lambda	
HONORS	Delta Phi Epsilon	
	Phi Kappa Phi	
	Golden Key Honor Society	
	NBEA & SBEA	
	President's & Dean's List (NRCC & VPI&SU)	
	Business Eduation Academic Achievement Award, 1993	
	Nominated for Student of the Year Award, 1993 VPI&SU	

EMPLOYMENT	Hercules, Inc., Radford, VA	3/89—4/91	TQM Instructor
	Hercules, Inc., Radford, VA	5/87—4/91	Production
	Christian Academy, Morgantown, WV	1980—1981	Teacher Aide
	Consolidated Foods Corp., Parkersburg, WV	1978—1980	Secretary

Margaret A. Moore

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