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ABSTRACT

As part of a project that identified the specific literacy skills required in ten occupations, this report provides two levels of instructional information about secretaries. Factual data are presented in Parts I and II for use in decision making by program developers, administrators, teachers, and counselors. These sections note the specific literacy requirements (reading, writing, listening, speaking, and mathematics) that were identified at three job sites and in three vocational training programs. Part III presents instructional methods/materials that adult basic education teachers can use to develop literacy skills while imparting job related knowledge. The lesson format is based on a directed reading activity and includes vocabulary and concept development, sentence and organizational structure, silent reading, and skill development. Appendixes list the technical vocabulary that secretaries need to know, the 100 words that represent 45% of the language sampled for the entire project, and occupational literacy requirements for the ten occupations that were studied. (AEA)

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THE LITERACY REQUIREMENTS OF A SECRETARY ON THE JOB AND IN A VOCATIONAL TRAINING PROGRAM

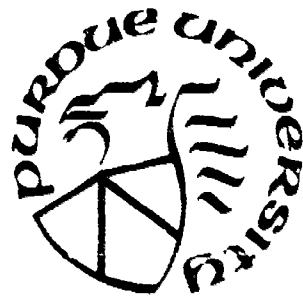
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* * *

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PROJECT ABSTRACT

THE IDENTIFICATION OF LITERACY REQUIREMENTS OF JOBS IN INDUSTRY AND CORRESPONDING VOCATIONAL TRAINING PROGRAMS

1. **Need Addressed:** Meeting the educational needs of adults with minimal literacy skills who wish to enter skilled or semi-skilled occupations.
2. **Population Served:** Adults with minimal literacy skills.
3. **Brief Description:** Specific literacy requirements (reading, writing, listening, speaking, and mathematics) of semi-skilled and skilled occupations in business, industry and vocational training programs were determined. The literacy demands of three work contexts and training programs for each of the ten occupations were analyzed and reported.
4. **Major Objectives:** To provide educators, counselors, and administrators with a description of the literacy requirements of semi-skilled and skilled occupations and training programs to which functionally illiterate adults aspire.
5. **Products:** A description of the literacy requirements necessary to hold a job in each of ten occupations and the corresponding requirements necessary to succeed in vocational training programs which prepare individuals for each of those occupations is provided. A booklet for each of the ten jobs was prepared.

INTRODUCTION

This project was undertaken in response to a need, expressed by adult basic educators and counselors, for information about the specific literacy skills necessary for success in several occupations. The occupations studied had been identified as desirable careers during informal interviews with adults who were enrolled in basic education programs in the Lafayette, Indiana area. Employment counselors and officials of the Office of Career Development confirmed that the occupations identified for study were appropriate. Because Greater Lafayette offers a wide range of occupational and training opportunities, the project staff was able to study both job sites and vocational training sites for each of the following occupations: account clerk, automotive mechanic, draftsman, electrician, heating and air conditioning mechanic, industrial maintenance mechanic, licensed practical nurse, machine tool operator, secretary, and welder.

Purpose and Audience

This report provides descriptive and instructional information to adult educators at two levels. Factual data are presented in Parts I and II for use in decision making by program developers, administrators, lead teachers, and counselors. Part III presents instructional methods and materials and is meant for use by adult basic education teachers. Members of both groups may be interested in the entire report, but in preparing it the project staff attempted to address the needs of the two audiences separately.

Procedures

To identify reading, writing, speaking, listening, mathematics, and other characteristics which are necessary for success both on the job and in the training program, three job sites and three vocational college courses were studied.

Required reading materials from each of the six settings were evaluated using two widely used readability formulas, the Dale-Chall Formula and the Fry Readability Graph. Readability estimates were computer assisted. A minimum 2000 word sample of written language was taken from each site. Special considerations and problems related to reading the technical materials were identified, and the relative use of reading as a work tool and as a learning tool was determined.

To identify speaking and listening requirements, one hour samples of oral language were recorded at each job site and in each vocational college course. Language recorded at each site was rated for its technical and formal qualities, and computer-analyzed to assess vocabulary and syntax. Written and oral language samples were used to develop the Key Technical Vocabulary List found in Appendix A. The combined language samples from all occupations studied were used to develop the Highest Frequency Word List found in Appendix B. A summary of the literacy requirements for all ten occupations studied is found in Appendix C.

Writing samples were obtained at each of the six sites and used to determine the nature of written communication demands on the job and in the vocational training program.

Mathematics demands were determined through surveys of materials from the job sites and classrooms. Instructors and supervisors

responded to a questionnaire about the specific mathematics skills necessary for job and/or training program success.

Important non-literacy characteristics were identified by supervisors who completed a rating scale which asked for their estimate of the importance to job success of such factors as cooperativeness, reliability, and attitude toward work.

The following sections of this report are organized according to the requirements of the job, the requirements of the training program, and instructional recommendations.

PART I
REQUIREMENTS ON THE JOB

Job Sites Studied

At each of three separate job sites, the literacy demands of one successful secretary were studied. Reading, writing, oral language, and mathematics were the specific literacy skill areas examined. A private secretary to a university administrator, a secondary school office secretary, and a secretary/receptionist in the personnel office of a large industrial firm cooperated in the study. From each job site samples of reading, writing, and mathematics tasks were obtained. Samples of the oral language requirements of the jobs were obtained by tape recording a randomly chosen one hour period of on-the-job verbal interaction. At each job site the secretary's immediate supervisor completed a questionnaire which was concerned with the importance of thirteen worker characteristics. Supervisors were also asked to identify the mathematics skills necessary for job success and to estimate the amount of time per week that secretaries spent on mathematics-related work.

Reading Requirements

Strong reading skills are a critical aspect of secretarial work. Supervisor estimates of the amount of on-the-job time involving reading indicated that from 20% to 50% of a secretary's time is spent reading. Supervisor remarks, however, suggested that these estimates were probably low. Distinctly different types of reading demands were encountered within each job site's materials. The materials included official documents, handbooks, business letters, time tables, schedules, price lists, and documents involving tabled information.

The difficulty of the materials examined through computer analysis at each job site was consistently very high. The readability estimates shown below are the results of two readability formulas, the Dale-Chall Formula and the Fry Readability Graph. For the materials examined, the two methods produced identical estimates. The estimates, however, may be low in that they are near the upper limits of the formula ranges.

Readability Estimates for Job Site Reading Materials

Job Site One	Grade Level 16 to College Grad.
Job Site Two	Grade Level 16 to College Grad.
Job Site Three	Grade Level 16 to College Grad.

Frequent task repetition and familiarity with specialized technical vocabulary and writing styles found in the secretarial reading materials offset, somewhat, the apparent difficulty of on-the-job reading requirements. It may be true that high levels of reading comprehension are unnecessary when transcribing and typing letters and manuscripts composed by others, and that this may reduce the need for very high levels

of secretarial reading skills. It is certain, though, that those who composed the letters and other materials transcribed and typed by secretaries expected and appreciated good secretarial editing abilities, and that such abilities depend in part on good reading ability. On the basis of the readability formula estimates alone, the reading requirements of secretarial work seem to be very high.

Special Reading-Related Problems and Considerations

In general, on-the-job reading requirements involved formal conversational style as well as formal and technical writing styles such as those presented in Example I. An important reading requirement of the jobs studied involved obtaining information from tables and charts. The table shown in Example II utilizes headed columns which separate and organize important information. The sentence structure in such tables tended to be abbreviated and similar to the style used in composing telegrams; unnecessary words such as the, and, and that were omitted.

EXAMPLE II

Written Information Presented in Table Format

Course Title and Content	Intended Participants	Date and Time Offered	Location of Class	Prerequisites to Attend	Length of class	Size of class
Job Evaluation and Classification Seminar A discussion and slide-tape presentation on procedures for requesting job audits; how clerical/service jobs are evaluated and classified using the NIFES system.	Clerical/Service	Aug. 17, 1978	STEW 311	None	1½ hrs.	20-30 per session
		May 10, 1979 1:30 to 3:00 p.m.	STEW 311			
	Supervisors	Aug. 17, 1978	STEW 311			
		May 10, 1979 10:30 to 12:00 a.m.	STEW 311			
NOTE: Job Evaluation and Classification Seminars are also available on an individualized departmental basis and may be scheduled by supervisors. Contact the Job Analysis Section of Personnel Services.						

EXAMPLE III

Numerical Information Presented in Table Format

ACCIDENT AND ATTENDANCE REPORT

DEPT. FOREMAN	MONTH	TOTALS	YEAR	TOTALS	INCIDENCE*	HOURS	WORKED
	ALL	LOST	ALL	LOST	ALL LOST	SINCE	LOST
	ACCID.	TIME	ACCID.	TIME	ACCID. TIME	TIME	ACCID.
NAME						3428	
						18377	
						3200	
					1.58	15651	
					1.80	27237	
					2.25	36644	
						8673	

*Year to Date Incidence: All Accidents Based on 20,000 Man Hours - Lost Time Based on 200,000 Man Hours. Since 11-1-78.

In each of the tables illustrated above the secretaries were required to match and interpret the information presented in vertical columns with names or concepts found in the left column.

Use of Reading on the Job

Each secretary who participated in the project completed questionnaires concerning the use of reading in three separate job-related tasks. The questionnaire results showed that reading was used predominantly as a tool for accomplishing work. That is, in most situations, the content of what was read was not remembered for more than several minutes. When a task requiring reading was done on a daily basis, secretaries reread rather than remembered the key information. In this way, precision in accomplishing tasks was maintained because memory-related errors were avoided. (Examples II and III show important information which is carefully reread rather than

remembered.) In filing tasks reported by one secretary, lapses of memory or careless reading could cost hours of lost time searching for misplaced information. Similarly, in scheduling school activities, another secretary noted that inaccuracy would cause her little personal inconvenience, but the effect on teachers and students would be dramatic. She therefore had to use great care in preparing schedules and other official materials. The preparation of official business letters also demanded close attention and careful reading in that editing and correcting of spelling and punctuation was often necessary. Overall, reading in secretarial work was used to accomplish work correctly and efficiently. On a day-to-day basis reading was not used to learn information.

Writing Requirements

The ability to communicate through both informal and formal grammatical written language was required at each of the job sites studied. Writing typically involved the transcription of materials written by others in a formal or technical style. Spelling accuracy and ability to use dictionaries and similar reference materials to determine spellings and word meanings was necessary. Example IV presents excerpts from letters done in formal and technical styles of writing.

EXAMPLE IV

Cases of Formal and Technical Writing

A. Formal Style

"The Board of Trustees of the Lafayette School Corporation encourage field trips and tours when they can significantly augment and enrich classroom instruction and make classroom centered learning more relevant to life..."

B. Technical Style

"There could be justification for maintaining exposure and medical records for use by OSHA, but the consequences of..."

Secretaries were expected to not only prepare drafts of such material for official use but were expected to "catch" grammatical and spelling errors as part of the typing process. Thus, while composition was not actually required, several components of good written composition skills were necessary. Secretaries, of course, had to have reading comprehension in order to recognize errors in original drafts.

Mathematics Requirements

Supervisors of the participating secretaries rated the importance of a subset of mathematics skills including addition, subtraction, multiplication, and division; processes involving fractions; measurement; word problems; geometry and algebra. All supervisors stated that accuracy in addition, subtraction, multiplication and division of whole numbers and decimal fractions was required. One supervisor

noted that the ability to calculate with fractional numbers other than decimals was desirable. The ability to use a calculator or adding machine was required at two of the job sites and rated as desirable at the third.

The amount of time per week spent on mathematics-related tasks was five hours at the university job site, ten hours at the industrial site, and 20 hours at the secondary school site. The mathematics skills required of the secretaries were not sophisticated, but the required skills were used frequently and, as with reading tasks, accuracy was critical.

Oral Language Requirements

The use of oral language by secretaries ranged from informal conversation to formal technical interactions with co-workers and supervisors. Recordings of secretarial on-the-job language contained a large number of telephone conversations. A formal style of spoken English was uniformly used in telephone conversations. Example V presents an excerpt from a typical telephone conversation.

EXAMPLE V

Telephone Language

"Yes, may I talk to Mr. Jones please? I'm calling in reference to your telephone etiquette seminar. We don't have enough people to hold the class so we're going to have to cancel it."

Because each of the secretaries who participated in the study was required to represent the employer in contact with the public, command of standard, grammatical English was required. For example, the use of phrases such as "It don't matter" or "I ain't gonna do it" did not occur in the transcripts of secretarial language as they did in transcripts of language from occupations where less formality is expected.

Listening to and following verbal directions was an important aspect of oral language at each of the secretarial job sites. Likewise, the ability to take coherent notes for later reference was an important listening skill for each of the secretaries. Example VI presents a situation requiring listening, following directions, and note taking.

EXAMPLE VI

Listening and Following Oral Directions

Supervisor: "Judy, here is the memo that I mentioned. Type it up and send copies to Nesbitt, Jim in shipping, Johnson, and Peters in plants two and three, and Becky in accounting. Better send a copy to the secretary of the Board, too. I'll need that ABC file as soon as it arrives."

Key Non-Literacy Requirements

Supervisor ratings of requirements important to job success brought out the following important non-literacy characteristics: good attendance, cooperativeness, positive work attitude, good standard spoken English skills, neat personal appearance, and

ability to follow directions. Each of these characteristics was rated as high or higher than reading and mathematics abilities.

PART II

REQUIREMENTS OF THE VOCATIONAL TRAINING PROGRAM

Courses Studied

The reading, writing, oral language, and mathematics requirements of three courses in a post-secondary vocational college secretarial science training program were studied. The courses, Shorthand, Records Management, and Clerical Office Procedures, had been determined by their instructors and the school administration to be representative of the training program as a whole. The literacy demands placed on students in other secretarial science courses are approximately the same as those presented in this report.

Practical experience was a large part of each course studied. Students were given planned periods in which to practice the skills and concepts presented through lectures and readings. Concrete practical experiences may reduce the apparent demands of the training program.

Reading Requirements

Because of the need to present large quantities of information in a limited period of time, training programs typically have greater

literacy demands than do the occupations to which they correspond. Lectures and written materials are used in place of the first-hand experience and more personalized supervision which can occur at the job site. On-the-job secretarial training programs typically rely on learning by experience.

Reading materials including textbooks, workbooks, teacher prepared handouts, and examinations were studied and rated according to the style in which they were written. The rating scale included informal, formal, literacy, and technical levels. The materials surveyed in the secretarial science training program were written in formal or technical styles such as those illustrated in Example VII.

EXAMPLE VII

Formal and Technical Writing Styles

A. Formal Style

"Registered mail provides protection and evidence of receipt for valuable and important mail. When this service is used, the post office guarantees delivery and, in case the mail is lost, becomes responsible to the sender for the declared value of the mail up to \$10,000." (Fulton, et al., 1977, p. 85)

B. Technical Style

"The out guide is a heavy (usually pressboard or plastic) guide with the word "OUT" printed on its tab at a position and in a color so that it can be readily seen in a file. Two types of out guides are illustrated in Figure 5. 6 - one with a holder..."

(Johnson, 1974, p. 114)

The level of difficulty of the reading materials required in the courses studied was determined by computer analysis using two widely accepted readability formulas. The Dale-Chall Formula and the Fry Readability Graph provided estimates of the general level of reading ability required for comprehension of the materials. Because the estimates of the two formulas were not identical, the estimates of readability for two of the three courses are presented below as ranges of difficulty. The programmed format of the workbook text and the predominance of shorthand symbols in the third course prevented the use of readability formulas, which require a sentence/paragraph format.

READABILITY ESTIMATES

Course One	12th Grade to College Level
Course Two	10th Grade to 12th Grade Level
Course Three	No estimate, (Not written in sentence/paragraph format).

Readability estimates do not account for factors such as knowledge of a specialized vocabulary or reader motivation. Such factors are known to affect reader success in mastering difficult material. Special preparation of students and high student motivation to achieve may therefore offset the readability of the course materials.

Special Considerations and Problems

The written materials used in the three courses studied made extensive use of tables, figures and illustrations. Instructions

and routines were presented in lists of steps which had to be interpreted and followed by the students. Example VIII illustrates the use of graphic presentations.

EXAMPLE VII

Use of Illustration

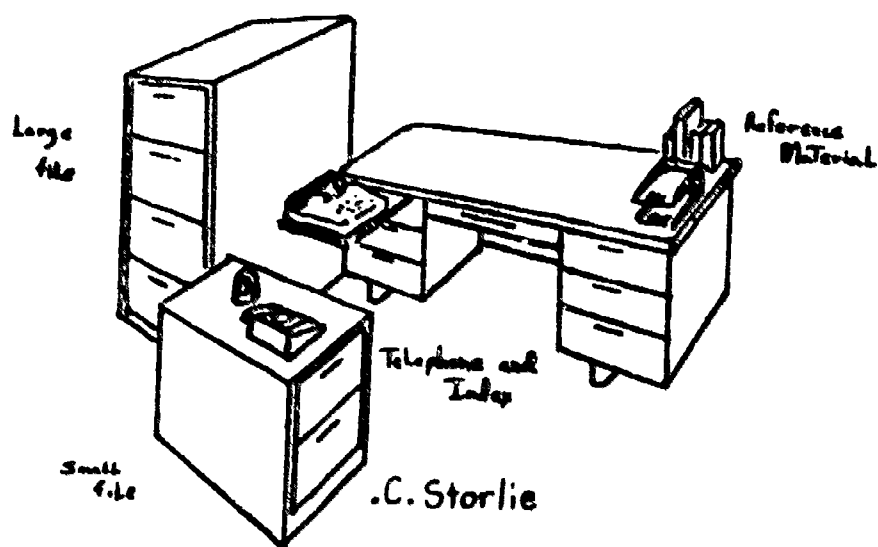


Figure 4-7 shows an efficiently organized secretary's work area.

Example IX presents a sequence of steps to be followed in accomplishing an important task. Lists of steps are frequently employed in textbooks to present important methods or procedures.

EXAMPLE IX

An Important Task in Listed Steps

- "3. Count the chargeable words:
- a. The point of origin, date, inside address and signature are transmitted free, as explained above.
 - b. The comma, period or decimal point, colon, semicolon, dash or hyphen, quotation marks, parentheses, question mark, and apostrophes when used in the body as ordinary punctuation are transmitted as written but not counted in computing the chargeable words.
 - c. When names of cities, states, and countries of two or more words are used in a telegram each word is counted separately. (Example: North Dakota, two words; New York City, three words.)"

Uses of Reading

In the secretarial science training program reading is used both as a tool for accomplishing work and as a learning tool. Classroom exercises resembling job tasks are done on a daily basis. When filing, copying of official letters, and carrying out work assigned through memoranda is required, reading to do is used. When learning and studying is required, reading to learn is necessary. Though precision is important in both uses of reading, special preparation and organization play a key role in learning and remembering through reading. Examples of materials from reading-to-do tasks are found in Example II and III in Part I of this report. Reading-to-learn materials are illustrated in Examples VII, VIII, and IX above. Instructional strategies and techniques related to reading as both a work tool and a learning tool are presented in Part III of this report.

Writing Requirements

Many of the tasks required in the secretarial science training program required the ability to communicate in writing using complete sentences and standard grammatical conventions. Textbooks and workbooks provided examples of different formats for personal and business letters. Such training probably is meant to enable students to edit such correspondence on the job. Writing required in workbook exercises did not necessarily demand complete sentence responses because many of the questions presented blanks to be filled in with only one- or two-word responses. Tasks such as this are relevant to instruction but may have little resemblance to on-the-job tasks.

Mathematics Requirements

The basic arithmetic processes of addition, subtraction, multiplication, and division of whole numbers and decimal fractions was seen as a requirement by secretarial science instructors. The ability to use a calculator was viewed as highly desirable. Skills involving measurement or finding solutions to word problems were rated as desirable but not essential for job success. It should be stressed that while higher level mathematics skills were not required, accuracy in all mathematics tasks was necessary.

Oral Language Requirements

Formal and informal English was used in the courses examined. Lectures were a combination of formal presentation and informal discussion. Many classroom exercises were done using audio cassette

tape recordings. The style of English employed on the tape recordings was formal and is illustrated in Example X.

EXAMPLE X

Formal Oral English Style

A. Formal Instructions

"The three new, related letters at the end of the dictation tape are dictated at 45, 50, and 55 words a minute. Be sure to practice the shorthand preview for these letters before you take them from dictation."

(Leslie, 1972, p. 178)

B. Dictation

"Mr. Royal was appointed to the important position of manager of manufacturing services. This left open his old position as sales manager." (Leslie, 1972, p. 59)

Listening and note taking were important skills for the students in the training program. Students were also expected to find and refer to specific pages and figures in textbooks during lectures. Oral directions were given by instructors, and students were expected to carry out tasks assigned in this way. Often important tasks were assigned by the instructors using more informal or casual English styles than occurred during the recorded lessons. Example XI illustrates such informal instructional language.

EXAMPLE XI

Informal Classroom Oral English

"Most letterheads, business letters, are 8½ by 11, regular typing paper size. Now, if some firms have something special to send out--an announcement or an invitation or adding someone to the firm (which would also be an announcement) -- they may get a different size letter or letterhead. And, of course, I tell you here..."

The use of formal, technical, and informal styles of English in the training program was similar to that found at the job sites studied. The necessity to follow oral directions was also related directly to on-the-job tasks. Therefore, in terms of oral language style and important tasks involving oral language, the vocational training program seemed to provide practice in the use of skills important for secretaries on the job.

PART III

INSTRUCTIONAL RECOMMENDATIONS

Project Overview

The levels of reading skill required on the job and in the vocational training program for secretaries were found to be high. The reading materials from each job site were consistently estimated to require college level reading skills. Training program materials were estimated to require at least high school level reading skills. However, it was noted that knowledge of key concepts and words and the effect of daily contact with familiar materials may reduce the actual difficulty of reading tasks.

On the job and in the training program, reading was used both as a tool for accomplishing assigned work and as a tool for learning information. Reading-to-do work was predominant on the job. The secretaries followed routines such as filing, which required precise, daily reading of the same material. In transcribing and typing letters, the secretaries carefully edited and proofread important correspondence.

In the vocational training program, secretarial students were required to read to learn information more often than the secretaries on the job. However, reading was frequently used as a work tool in ways similar to its use on the job.

Writing at both job and training sites was concerned mainly with transcription and typing of memoranda and letters composed by others. Composition was not required of the secretaries or their training school counterparts, but comprehension of letters and memoranda was necessary in that proofreading and editing for grammatical, punctuation, and spelling errors was expected by supervisors and instructors. Reading skills, therefore, were used in concert with composition skills in such tasks even though the secretaries did not actually write the original version of the letters they typed or transcribed.

The level of mathematics skills required of secretaries and trainees was not as high as the level of reading skills required. Supervisors reported that basic addition, subtraction, multiplication, and division of whole numbers and decimal fractions (such as 1053.35) was required. The ability to use adding machines and calculators was required at two job sites. Rated as desirable, but not required, were skills in computing with fractions other than decimals and measurement skill. Precision in mathematics was emphasized at all locations. Thus, while high level mathematics skills were not expected, careful, accurate work was very important.

Oral language used in both on-the-job and training settings ranged from informal conversation to formal and technical inter-

actions between co-workers and supervisory personnel. At the job sites, formal English was required in frequent business-related telephone conversations. In fact, the majority of on-the-job language recorded was telephone conversation.

Job site supervisors rated the following worker characteristics according to their contribution to job success: good attendance, cooperativeness, positive attitude toward work, good standard spoken English skills, neat personal appearance, and ability to follow directions. Each characteristic was rated at least as high as reading and mathematics skills. Although high level reading skills and accurate use of mathematics are important to job success, there are other qualities which contribute as much more to success on the job.

A brief summary of how the literacy requirements of a secretary compare to those of the other nine occupations studied is provided in Appendix C.

Organization of ABE Lessons

The recommendations which follow are meant to aid teachers and tutors in designing streamlined lessons which develop both literacy skills and job-related knowledge. Nearly all of the literacy information studied in connection with secretarial occupations and training programs was related to reading. Also, the reading requirements of the jobs and training programs were high. This section, therefore, presents a method of organizing lessons which emphasizes reading. The method is based on a directed reading activity (DRA) which includes vocabulary and concept development, sentence and organizational structure, silent reading, review, and skill development and practice.

The guiding principle of the DRA method of lesson organization is that words, concepts, and skills must be introduced and practiced in situations and materials that are true to life. For example,

words, sentences, tables, and diagrams should be taken from materials similar to those on the job. It may be possible to teach all of the words on the Key Technical Vocabulary List in isolation, but, better practice is to allow immediate practice in context. The best materials for such teaching and practice are manuals and books such as those found on the job or in the classroom. A possible problem here is the disparity between the readers' skills and difficulty of the reading materials. However, parallel materials can be developed by teachers and/or tutors if time permits.

The value of a DRA approach described below is that it allows reading lessons to develop reading skill and usable job knowledge.

Notes on Teaching Vocabulary

The nature of the specialized vocabularies used by secretaries are determined largely by the requirements of specific jobs. There are, however, many words which are used frequently in all secretarial work; application, memorandum, interoffice, and executive are examples of such words. Another group of words used by secretaries are used with high frequency in all English language communication.

Specialized, technical vocabulary words should be taught so that recognition of both the word and its meaning is automatic in reading tasks. One type of specialized word is unique to the specific job. For example, microswitch has a specific meaning in the electronics industry. In teaching words such as this to students who might work in the electronics field, a microswitch or picture of a microswitch should be used. In teaching other specialized words and concepts, similar concrete examples should be used.

A second type of vocabulary word which needs attention in ABE reading lessons, is one which has a common meaning in everyday communication but which also has a specialized technical meaning. Tree, for example, has a clear meaning to most English speakers. Its specialized meaning for secretaries refers to the image left on a carbon copy by a wrinkled piece of carbon paper. Multiple meanings such as these should be taught during reading lessons.

It is important for ABE students to be introduced to common high frequency words and the two types of specialized or technical words in contexts which are similar to those found on the job or in the training program. Both vocabulary and job knowledge development are fostered by this procedure.

Teaching suggestions for vocabulary development include the following:

1. Pair the word to be taught with the concept or object that it refers to whenever possible.
2. Introduce the word using an approach which focuses student attention on the word.
3. Be sure that the new word is read in context.
4. If in doubt, use the general rule that five new words per lesson is best for efficient learning and good retention, but be flexible.
5. Review words frequently.

Sources of job-related vocabulary and concepts are found in texts cited in the bibliography of this report. The style of writing in such books varies greatly. If possible teacher time could be planned for preparing written materials which parallel passages in the books.

Notes on Teaching About the Structure and Organization of Text

The above suggestions on teaching vocabulary words emphasize meaning; words have little use outside of a meaningful context. Even solitary words read from a filing chart have a meaningful context to the secretary doing a filing task.

In reading, it is important to be aware of special patterns of organization. Formal, technical reading materials are organized differently from the short stories and novels used in teaching reading to most Americans. The expository style of presenting information that is used in textbooks and other specialized or technical material is different at several levels from the narrative style.

At the sentence level, ABE students should be taught that expository or textbook style often relates cause and effect. Sometimes this relationship is clearly stated as in the sentence in Example XII A.

EXAMPLE XII

Stated and Unstated Cause and Effect Relationship

- A. The bank failed because of poor management.
- B. The bank was poorly managed. It failed.

Often, however, the relationship is not stated as in Example XII B. In such cases readers who are not looking for cause and effect connections may miss them.

At the paragraph level, writers of expository material often use a format which states the main idea in the first sentence.

The last sentence summarizes the paragraph and may tie it to the following paragraph.

The chapter level of organization in expository material contains many valuable aids to readers. Key words are used as headings to introduce important sections or concepts. Pictures, diagrams, tables and figures are used to illustrate important ideas. Introductions and chapter summaries are likewise available as aids to readers who are prepared to use them.

ABE students should learn about style features such as these and use them to improve comprehension. Efficient readers use their knowledge of expository style to organize their reading. Awareness of the use of cause and effect keeps them alert for such relationships. Knowledge of paragraph and chapter organization is used to develop a "mind set" which helps to organize important information. Questions based on paragraph lead sentences, headings, pictures and other graphic aids help readers organize, comprehend, and remember what is read. A directed reading activity, described in the next section, is a system which enables the ABE student to become efficient in using organizational factors as aids to comprehension and memory.

Directed Reading Activity

This system of preparing for efficient reading may be used with individual students or with groups. In groups, it requires very little class time to prepare students for reading assignments. For both individual and group use it has been demonstrated to increase reading efficiency and comprehension.

After a review of previously taught, related concepts and assignments, the below procedures should be followed:

I. Develop Readiness for Reading the Assignment.

Purpose: Motivate
Set purposes for reading
Develop vocabulary

Teacher role: Ask Questions -

How familiar is the subject matter and vocabulary to your student?

Teach New Vocabulary -

Be concrete; write out the words as you introduce them. Use examples such as objects or pictures, point out word relationships (i.e., cardiograph and cardiovascular relate to cardiac - heart). Have students write the words as they are taught.

Ask Questions to Stimulate Interest -

Focus on titles, pictures, graphs. Relate an anecdote from your own experience or one your students might have had.

II. Direct the Silent Reading of the Assignment.

Develop questions from sub-headings, graphs, pictures, and tables. Try to focus on relationships in the assignment. (In textbooks, useful questions are often provided by the authors).

Have pupils read silently from 5 to 20 minutes to find the answers (keeping questions in mind as they read).

Encourage students to ask for help when they are confused. Writing questions down in shorthand form is a good practice.

III. Discuss Student Answers to Questions

Do not restate the questions unless necessary. Students need to remember the questions, or they lose the purpose for reading.

Ask higher level questions to develop comprehension. Have student(s) interpret, draw conclusions, and make inferences as well as recall facts.

IV. Reread as Necessary

When answers demonstrate confusion, have the student reread the appropriate small section to determine the reason for the confusion.

V. Follow-up and Skill Development

Confusion or lack of comprehension may signal a need for extra work on vocabulary, concept building or word recognition skill.

In this phase of the lesson important mathematics and other skills can be related concretely to the reading assignment.

REMEMBER:

A DRA is a system, a routine, that you want your student(s) to learn to use independently. Remind your students of this - tell them why you use a DRA system. It will help them now and in their future study.

Reading to Accomplish Work

The term, reading to do, has been used in research and development projects done for the U.S. armed forces (Sticht, et al., 1977). Reading to do refers to the use of reading for the purpose of getting work done. It involves following written directions

and reading to find information which will be used immediately. Such information need not be learned or remembered. Looking up telephone numbers, finding information in a policy manual, or finding important data in a table, chart, or figure are examples of reading to do. Preparation of ABE students for reading-to-do tasks can be incorporated in a directed reading activity lesson.

When lesson materials contain occupationally relevant concepts, ABE students are given important background information which will make higher level training easier. Therefore, lessons should employ materials which are similar in structure and content to those found on the job or in the vocational training program. Paragraphs, tables, charts, and figures might be used verbatim from on-the-job or instructional materials. Alternatively such materials might be paraphrased and reduced in difficulty to match student abilities.

Given appropriate materials and a period of orientation to them, the structural and organizational features of the table, chart, figure, paragraph, or chapter should be pointed out to the student (see Notes on Teaching About Structure and Organization of Text). This is essentially the first step of the DRA described above. When the materials have been introduced, the student should be directed to find a particular fact in the material. (In subsequent lessons the difficulty of the information-finding task should be increased).

Skill in following written directions can be developed using the DRA system and materials similar to Example XIII.

EXAMPLE XIII

Written Directions

1. Listen to the directions on the Presentation Tape and execute those directions in Book I.
2. Do the Supplementary exercises for that lesson in Book II.
3. Complete the Self-Check for that lesson.
4. Take the dictation from the Dictation Tape for that lesson, reading back portions of it from your notes.

Initial lessons should probably contain no more than one or two steps to follow.

In information-finding lessons, the emphasis should be on understanding and careful identification of the required fact. Likewise, in lessons on following directions, understanding and careful execution of the required steps must be emphasized.

Reading to Learn Information

Skill in learning printed information for future use is very important in vocational training programs. The reading skills necessary for reading to learn (Sticht et al., 1977) are taught and systematically practiced in directed reading activity Lessons. That is, the use of previewing, attention to graphic and contextual information, and the organizational factors discussed in Notes on Teaching About the Structure and Organization of Text, above, should be practiced and learned during each DRA lesson. Questioning and rereading, also aspects of the DRA, reinforce important learning skills.

Materials used in reading-to-learn lessons, like those employed in reading-to-do lessons, should be occupationally oriented. (See Bibliography). ABE students who receive reading instruction through job-related reading materials develop not only reading skills but gain important job knowledge as well.

Counseling the ABE Student

The literacy demands of the secretarial jobs and training program studied were high. It is important, therefore, that teachers and counselors consider the facts presented in this report and the individual student's levels of motivation and literacy skill development before beginning to prepare the student to enter a secretarial job or vocational training program. Frequency and intensity of lessons, choice of instructional materials, and long term duration of the instructional program will vary according to the student's level of skill, especially in reading. This does not mean that students with low literacy skills should always be discouraged from preparing for secretarial work. It does suggest, however, that an early and realistic estimate be made of the time and effort required to reach the goal of employment or formal training.

Summary

The literacy demands of secretarial jobs and training programs were found to be high. It is probable that experience and familiarity with specialized information reduces the perceived demands of job and training tasks. However, the extent of such a reduction is not known.

It was observed that vocational training programs for secretarial occupations provided students with tasks that were very similar to on-the-job tasks. Also, vocational program reading materials were shown to present important training concepts through texts which were less difficult than those found on the job. Reading research supports the practice of reducing readability levels when difficult information is presented in written form.

Instructional recommendations in this report emphasized the development of reading skills. Other literacy and non-literacy requirements were recognized as important, but it was clear at all job and training program sites studied that strong reading skills were essential.

The recommended approach to ABE reading instruction was a directed reading activity (DRA) because it is systematic and provides for essential skill development and practice. Suggestions were presented on teaching vocabulary and the use of important structural and organizational factors which are related to comprehension.

Final recommendations sections focused on reading to accomplish work and reading to learn information. These two types of reading were discussed separately because they require different skills.

It was recommended that, in using the information and recommendations presented here, ABE teachers should be well acquainted with the occupational interests and motivation as well as the literacy skills of their students. The literacy requirements of secretarial

occupations are such that some students whose skills are well below those required may be unable to achieve sufficient skills in a reasonable period of time.

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APPENDIX A
TECHNICAL VOCABULARY LIST

This list is based on the total oral and written samples of the language of secretaries both on the job and in the training program. Words included in the most frequent 1000 words of the Kucera-Francis list (based on adult language) have been deleted. The list was also edited to remove numerals; labels; names of people, places, products, and companies; contractions and possessives; and colloquialisms resulting from the oral language samples.

Some words included in the list are relatively uncommon words that occurred in the total language sample and are not necessarily technical terms. Thus, the list should be treated as a source rather than a criterion. The 94 most common words have been marked with an asterisk.

Total Sample Words = 15,259

Different Words = 2,492

abbreviate	actively	agencies	anybody	artisans
abbreviation	adding	agency	apostrophe	aside
abilities	address*	agents	apparent	aspect
ability	addressed	agreed	appearing	aspects
abroad	addressee	agreement	appears	assembly
absence	addressing	aids	appendix	assessed
absences	addition	aims	applicable	assessment
absent*	adequate	aligned	applicants	assigned
academic	adjunct	alignment	application*	assignment
acceptable	adjusting	alleged	applies	assist
access	administer	allotted	apply	assistance
accession	administrate*	allowance	applying	assistant*
accidents	admire	allowed	appointment	assists
accommodate	admissions	allowing	appreciate	associate
accommodating	admit	allows	appropriate*	assume
accompany	admitted	alphabet	approval*	assumption
accomplish	adopt	alphabetic*	approved*	assurance
accordance	adopted	alternated	approves	assure
accountant	adult	amended	approving	assuring
accounting	adults	analyze	aptitude	atrocious
accounts	advance	angles	archival	attempt
accurate	advanced	animated	archives	attend
accustomed	advantages	announcement	arise	attendance*
achieve	adversely	annoyed	arrange	attends
acknowledge	advisors	answers	arranged	attorney
acquisition	affected	anticipate	arrangement*	attributes
active	afraid	anticipation	arrival	audio

audiovisual	bids	byproducts	catalog	circulation
audit	biweekly	calculated	cataloging	circumstance
auditing	blank	calling	catalogs	citation
augment	block	calls	centered	classes*
author	blower	campus	centers	classification
automatic	bonds	campuses	certificate	classified
avoid	bookkeeping	cancel	certified	classify
avoiding	books	cancelled	certify	classroom
award	borrowed	cancelling	changed	clearness
baccalaureate	boss	cans	changing	clerical*
baggage	bottom	capabilities	channels	clerk
balance	box	caption	chaperone	clever
band	brightly	carbon*	chaperones*	clients
base	brings	card*	chapter	clock
basically	broaden	cardboard	characteristic	clothes
bear	brother	cards	chargeable	clothing
bearing	buildings	career*	charged	code
becomes	bulge	carefully	charges	coded
begin	bulletin	caring	charts	cognizant
begins	bureau	carrier	check	collection
behavior	bursar	carriers	checked	colon
believed	bus	carries	checking	colored
belongs	businesses	carry	chemical	combined
benefit	buses	carton	chemist	combines
benefits	busy	cartons	chip	comma
betterment	buying	cash	chosen	commerce
biased	bye	cassette	chronological	commercial

commitment	conference*	continent	coverage	decrease
communicate*	confirmed	continually	covered	deemed
companies	conflict	continuing	created	defined
compared	confuse	continuous	creation	defines
compatible	confusion	contraction	credit*	definition
competence	connected	contracts	crib	delivery
competition	connecting	contractual	critical	demand
competitive	conscious	convenience	cross	demonstrate
complaints	consecutive	cooperation	crumpling	departure
completed	consent	cooperative	cultural	depend
completing	consequence	coordinator*	cultures	depending
completion	considerable	copies*	curled	depends
complex	considerate	coping	current	depicts
compliment	ccnsidering	copy*	curricular	description
component	consistent	copying	curriculum*	designate
components	construction	corners	custodians	designates
compound	construed	cord	customer	designer
comprehensive	consult	corporation	danger	designers
comprises	consulted	correct	dash	desired
computer	consulting	correctly	date*	desiring
computing	contact*	correspond	dated	desk
concept	container	counselor	dates	destroy
concerning	containers	counselors	dealt	destroyed
conclusion	containing	count	dear*	detailed
concrete	content	counted	decide	details
condition	contents	counter	decimal	detect
conduct	contests	courses*	declared	determiner

determines	discontinuous	ease	enlightened	examination
detract	discriminate	easily	enrich	examiners
detrimental	discuss	economical	enroll	examples
develop	discussed	edge*	enrolled	excellent
developing	dislike	edges	enrolling	exception
diagonal	displays	educational	enrollment	exceptions
dictate	disposal	educator	enrolls	excess
dictating	disposing	effectiveness	enterprise	excused*
dictation	distinctive	efficiency	entrusted	executive
dictionaries	distribute	efficiently	envelope	executives
dictionary	distribution	electronic	envelopes	exercised
differentiate	divide	eligibility	equipped	exhaust
differently	divisions	eligible	equivalency	exist
difficulty	double	emergencies	equivalent	expanded
dig	doubtful	emphasis	errors	expecting
diploma	downstairs	employed	establish	expects
directed	drawer	employee*	establishing	expense
directions	drew	employees*	etc.	expenses
director*	driven	employer	etiquette	expensive
directors	driver	employing	evaluated	explain
directory	drivers	employment	evaluation	explained
disadvantage	drum	encompass	evenings	exposure
disapproval	duplicate	encourage	event	extended*
disapproving	duplicating	encouraged	events	extends
disc	duration	ends	everyone	extension
discarded	duties	engaged	everytime	extra
discern	earns	enhance	exact	extras

extreme	film*	frequently	guidance	holds
facilities	filmstrip	fulltime	guide	homes
factor	filmstrips	fully	guided	hone
factors	financial	functions	guideline	hourly
factory	fingers	gained	guidelines	houses
faculty*	firmly	gallon	guides*	hub
failure	firms	games	guiding	humanities
fair	fixed	geographic	handing	hunts
familiar	flammability	gloves	handling	hurry
fastened	flammable	goal	handset	hurt
faults	flat	goals	handwriting	hyphen
feasible	flaws	goes	happen	hyphenated
features	flow	goodbye	harassment	hyphenation
February	fold	governed	harder	identical
federally	folded	governing	hazardous	identification
fee*	folder*	grade	heading	identified
feels	folders	graded	headquarters	identifies
fees*	follows	graduate	health	identify
fellow	followup	graduated	heath	identifying
fifteen	forget	grammatical	hello	illness
fifth	forgot	granted	helping	illustrate
file*	forwarded	graphics	hesitate	illustrating
filed	fourth	graphs	highly	illustrator
files	frame	guarantees	hired	implementation
filing*	frames	guardian	hiring	implies
fill*	framework	guardians	holder	imply
filled	frequent	guessed	holdings	improve

improved	initiated	investigate	king	listed
improvement	injury	invitation	knowing	listen
improving	inoculation	involves	knows	listings
inactive	insatiable	involving	label	lists
inadvisable	insert	isolated	labels	loan
inch	inserted	item	lacquer*	lobbed
included*	inspect	itemized	lacy	locally
includes	inspection	items	laundry	located
incorrectly	institutes	itinerary	lawyer	location
increases	instruction*	January	lawyers	locations
indefinite	instructor	jobs	leading	locked
independent	insurance	jog	learn*	lodging
index*	insured	join	learning	logical
indexing	integrated	joined	legal	locks
indicate	intended	joint	legitimate	lose
indicates	intense	jointly	letterhead	lots
indicating	intent	joy	levels	lunch
indication	intercom	July	libraries*	machine
indicator	interested	jurisdiction	library*	machinery
indirect	interfere	justification	lie	machines
inferior	interference	juvenile	listed	mail*
influences	interoffice	key	lifting	mailing
inform	interpretation	kids	lights	maintain
informal	interstate	kill	likelihood	maintained
inhalation	interview	ki led	limit	maintaining
initial	interviews	killing	limited	maintains
initials*	inventory	kinds	liquid	male

manage	metal	neatly	obtaining	organizer
management*	microfilm	necessarily	occasion	orientation
manager	microforms	necessity	occupation	orienting
manual	microrecord	neglect	occupies	origin
manually	mile	negligence	occupy	original
margin	mimeograph	nephew	occur	outcomes
mark	mine	newspaper	offer	outline
marked	minimum	nice	offered	outlined
marker	minumum	nondiscriminate	offerings	outs
marks	minute	nonresident	offers	overall
match	miscellaneous	normally	officer*	overhead
materials*	misfiled	notations	offices	overlook
maximum	misfiling	notes	official	overnight
meals	missed	noticeable	offset	overtime
measure	misspelled	notification	omit	paced
measurement	mistakes	notified	ongoing	packages
measures	misunderstood	notify	opening	parentheses
media	mixed	notifying	operated	parents*
meetings	Monday	noxious	operator	partial
memorandum*	motion	nudge	optional	participant
memorize	mouth	numbered	orange	participate*
memory	multiply	numeric	ordered	particles
mention	mutual	numerically	orderly	partners
mentioned	named	numerous	orders	pass
merchandise	names*	objectives*	ordinarily	passport
merit	narrow	obscured	ordinary	payable
message	neat	obtain	organized	payment

pen	placing	prepare	programmed	qualification
pencil	planned	prepared	project	qualified
percent	please*	prepares	projection	qualify
percentage	pleasure	presented	projects	quantities
perfection	plus	preservation	promotion	quarter
perform	pocket	president	pronounced	quick
performing	policies	pressboard	proof	quotation
periodic	portable	presuppose	proper*	quoted
periodical	portion	prevent	properly	radius
periods	positions	prevents	proposal*	rapidly
permanent	positive	primarily	proposals	rarely
permanently	post	primary	proposed*	rates
permission*	postal	principal*	protect	reaches
permitted	postdoctoral	principals	protection	reader
personally	posters	principles	prove	readers
personnel*	precise	print	provides	reality
pertaining	practical	printouts	providing	reasonable
petition	practically	prior	provisions	receipt
philosophy	practice	priorities	publication	receive
phone	precaution	privileges	punctuation	receiving
photograph	preceding	procedure*	pupil	recognize
phrase	predetermine	procedures*	pupils*	recommend
phrases	preface	processing	purchase	recommendation*
pictured	preferred	producers	purchasing	recommended
pictures	prefixes	product	purposes	recordings
pieces	preliminary	productivity	purposive	records*
placement	premises	profession*	puts	recreation

reduce	regular*	requesting	rival	secondary
reduced	regularly	requests	role	secretarial
reducing	regulated	require	rose	sectional
reduction	regulation	requirement	routes	sections
reel	regulator	requires	rubber	secure
refer	rehash	requisition	rule	secured
reference	reimbursement	resemblance	rules*	securing
references	rejection	reserve	safer	security
referencing	related	resident	safety	selection
referral	relating	resource	saint	self
referrals	relation	resources*	sake	sell
referred	relatively	respective	salary	sells
referring	relevant	response	salutation	semester*
refiled	relieve	responsible*	satisfaction	semesters
reform	remission*	restriction	satisfactory	semicolon
refrigerate	remodeling	retaining	satisfy	seminar
refund	remote	retention	Saturday	seminars
refundable	removal	retired	save	send
refunds	removed	retrieval	schedule	sender
regarding	removing	returning	scheduled	sending
region	rented	returns	schedules	sentence
regional	repair	review	scholar	sentences
register	reports	reviewed	sciences	separate
registered	representat'on	reviewing	script	separately
registers	represents	reward	sealed	sequence
registrar	request*	rich	searcher	serve*
registration	requested	ridding	seats	serves

session	sixth	specialize	stored	superintendent
sessions	sized	specialities	'storing	superior
sets	sizes	specificical	stress	supervise
setting	skilled	specified	stressed	supervised
sheet	skills	speed	stripes	supervision
sheets	skin	spell	strips	supervisor*
shelves	slash	spelled	studies	supplies
shop	slide	spelling	stuffed	supply*
shorter	slides	spending	styles	supporting
shorthand	slight	sponsored	subcontract	suppose
should	slip	sponsors	subdivided	suspects
showing	slippage	spouse	subdivision	suspicious
shows	slips	spouses	subjects	suspicious
sign	slow	staffed	submission	systematic
signal	smack	stamped	submitted	tab
signals	smaller	stamps	subscribe	tabbed
signature	smoking	standards	subsequent	tabs
signatures	smudges	standpoint	substitute	takes
signed*	smudging	stapler	substitution	talks
significant	societies	star	subsystem	tape
signify	solve	static	subsystems	taped
signing	someone	status	succeeding	target
silent	sought	stepchildren	success	tasks
sincere	spaces	stimulating	sufficient	teacher
sincerely	sparingly	stocks	suggested	teachers
sister	speaking	storage*	suggestion	telegram
situations	specialist	store	summertime	telephone

tells	tops	typewriter	utilized	walk
temporarily	torque	typewriting	vacation	wants
temporary	totally	typical	valuable	weight
tendency	touch*	typing*	valued	welding
tends	tour	ultimate	van	whenever
terminate	tours	unable	varies	whereabout
terminated	toxic	unacceptable	variety	widely
testing	toxicity	unbroken	vastly	wider
tests	trades	uncertain	vendor	width
text	transfer	uncertainty	verified	willful
textbook	transferred	undergraduate	verify	winning
textbooks	translucent	underlies	veterans	winter
texts	transmitted	underlining	viewer	wishes
thank	transparent	underneath	violation	wishing
thanks	transportation*	understood	violet	witch
thinner*	travel*	undertaking	visa	withdrawing
thirty	treasurer	unexcused	visible	wither
thoughtful	trees	unique	visiting	wonder
thoughts	trend	unit*	visitor	workable
till	trends	units	visual	workplace
tips	trip*	unjustifiable	visuals	workshop
title	trips*	unless	vocabulary	wrinkle
titles	truant	unusual	void	wrinkled
toe	truly	useful	volumes	wrinkling
together	trustees	useless	wage	write*
tool	tuition	uses	wages	writers
tools	typed	utilization	wake	writes

yellow

yesterday

yours

yourself

APPENDIX B
HIGHEST FREQUENCY WORD LIST

The 100 words on the following page represented 45% of the words used in all the language sampled. This list is based on the combined oral and written language samples from all occupations studied. It shows the words used most frequently by adults in the ten jobs studied and in the vocational training programs corresponding to those jobs.

Total Words	=	180,000
Total Different Words	=	9,000

the	will	your	see
of	one	was	more
to	not	get	these
and	an	has	into
a	there	must	just
is	can	any	them
in	when	he	down
it	out	got	time
for	we	know	about
that	which	then	been
you	what	don't	some
be	do	each	business
or	up	air	how
on	pressure	check	its
are	two	that's	back
I	so	but	over
this	they	system	work
with	here	through	would
as	other	valve	temperature
by	ok	going	same
if	right	well	also
have	no	use	where
all	used	than	now
at	may	it's	only
from	should	go	like

APPENDIX C

SUMMARY OF OCCUPATIONAL LITERACY REQUIREMENTS

This appendix presents a brief summary of the literacy requirements for all ten occupations studied.

SUMMARY OF OCCUPATIONAL LITERACY REQUIREMENTS

	<u>On The Job</u>		<u>Training Program</u>	
	Reading	Mathematics	Reading	Mathematics
Account Clerk	College to college graduate level	addition, subtraction, multiplication, division, decimals, fractions, business machines	11th grade to college graduate	addition, subtraction, multiplication, division, fractions, decimals, algebra
Automotive Mechanic	9th to college graduate level	basic processes, decimals, fractions, measurement	9th to college graduate level	basic processes, decimals, fractions, measurement
Draftsman	10th grade to college graduate	basic processes, through geometry, algebra, trigonometry	9th grade to college level	basic processes, through geometry, algebra, trigonometry
Electrician	college to college graduate level	basic processes, through geometry, algebra, trigonometry	10th grade to college graduate level	basic processes, through geometry, algebra, trigonometry
Hearing and Air conditioning Mechanic	10th grade to college graduate level	basic processes, decimals, fractions, measurement, algebra	11th grade to college graduate level	basic processes, fractions, decimals, measurement
Industrial Maintenance Mechanic	10th grade to college graduate level	basic processes through trigonometry	10th grade to college graduate level	basic processes, decimals, fractions, measurement
Licensed Practical Nurse	10th grade to college level	addition, and subtraction--more necessary to dispense medication	12th grade to college graduate level	addition and subtraction
Machine Tool Operator	9th to college graduate	basic processes, decimals, measurement	9th grade to college level	basic processes, decimals, measurement
Secretary	College to college graduate level	basic processes, decimals, fractions, business machines	10th grade to college level	basic processes, decimals, business machines
Welder	few materials--reading of single word information required	basic processes, fractions, decimals, measurement	8th grade to college graduate level	basic processes, fractions, decimals, measurement, algebra