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ABSTRACT

Designed to provide guidance in selecting the appropriate microcomputer-based word processing program, this document discusses the key characteristics of word processing software, including formatting, editing, merging, and printing. Possible capabilities of word processing features are identified, i.e., indent, tab, center, creation of footnotes, insertion, deletion, text movement or copy, word search and/or replacement, spelling checkers, margin justification, headers and footers, sequential printing of multiple files, interruption and resumption of printing, and display of formatted text. Eleven uses of word processing programs are listed, and suggestions are made for selecting the appropriate software package: (1) describe projected uses of the program; (2) identify the features needed; (3) plan ahead for new needs; (4) consider restraints (e.g., price, hardware, printer features) and user preferences that could prove limiting; (5) prioritize desired features; (6) examine and compare products; and (7) consider availability of support--will there be someone to talk to if problems arise after the purchase is made? Lists of references and guidebooks in this series are appended. (JB)

EVALUATION GUIDES

Guide Number 3

MICROCOMPUTERS: WORD PROCESSING

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The use of microcomputer-based word processing programs is discussed, including:

- Key Characteristics of Word Processing Software
- Word Processing Programs
- Selection of the Right Software
- References

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KEY CHARACTERISTICS OF WORD PROCESSING SOFTWARE

Using words to communicate plans, progress, and results is a major activity in evaluation research. Word processing programs provide a convenient way to type text and, in addition, they offer many capabilities regarding formatting, editing, merging, and printing. Figure 1 summarizes these capabilities.

Formatting

The main concept behind word processing is the notion of a document, that is, a letter, book chapter, entire report, proposal boiler plate, or any discrete body of textual information. The creation of such a document starts with the use of a keyboard, more or less like a standard typewriter, to enter the text into the word processing system.

There are some features of word processors which help to arrange words on a page as a document is created. Formatting refers to the arrangements of the words themselves. Like a typewriter, a word processing program allows you to indent the first word of a paragraph or to tab the headings and subheadings of an outline. It is possible to automatically center headings. Whole blocks of text can be indented and single spaced. In fact, the spacing between lines can be altered by using the return key just like on a typewriter. In addition, some word processors allow automatic underline, subscripts, and superscripts. Special features include creating and editing multi-columns of text or tabular information and the creating of footnotes.

Pages can be formatted in terms of where they start and where they stop. That is, page breaks can be determined as a document is created.

Editing

Once text has been entered, extra letters, words, and so on, can be inserted or deleted without having to retype the surrounding text. It is also possible to simply type over existing text to change it. The word processing program automatically rearranges the text to accomodate these changes. In fact, words, phrases, sentences, and whole blocks of text may also be moved or copied from one part of the document to another if the order of things needs to be changed. Being able to move easily from one part of a document to another is very important.

Figure 1
Word Processing Features

Formatting

Indent
Tab
Center
Block indent
Multi-columns
Footnotes
Superscripts and subscripts
Underlining
Line spacing
Page breaks

Editing

Typeover
Insert, move, or copy characters, lines, or blocks of text
Delete or store in buffer characters, words, strings or blocks of characters, whole screens
Cursor control
Move by character, word, line, paragraph, page, beginning/end
Search and replace
Single or multiple occurrences of characters, words, phrases (upper/lower case)

Merging

Attaching one document to another
Integrating separator elements, such as names and addresses into a document

Printing

Margins: top, bottom, left, right
Right justification and line spacing
Type styles, character spacing, emphasize/bold
Sequential printig of multiple files
Single or multiple copies
Single or continuous sheets
Interrupt/resume printing
Display of formatted text

The more options a program has for doing this the better. This is called cursor control, since the flashing cursor lets you know where you are. Being able to move the cursor character by character, word by word, paragraph by paragraph, page by page and to the beginning or end of the document are some of the common features of word processing programs.

Another interesting feature of most word processing programs is the ability to search for a particular word, such as one that may have been consistently misspelled. With most word processors it is possible to automatically replace one word with another, such as the correct spelling of a misspelled word, wherever it occurs. Being able to ignore upper/lower case differences is important in order to find misspellings at the beginning of sentences.

There are even programs called spelling checkers which are electronic dictionaries. They "look at" each word in a document and check to see if it matches the words in the dictionary. If not, the word is presented for a decision about its correctness. Still more sophisticated are programs that check for diction, style, and clear wording such as the one being developed by Bell Laboratories.

Merging

Since word processed documents are stored electronically, it is usually possible to combine them in various ways. The simplest way is to attach one document to another. For example, the parts of a proposal that were created as separate documents can be linked with a standard institutional description and disclaimers without having to retype or cut and tape them into place. Whole letters may be built of smaller blocks selected from a variety of paragraphs that provide different options for reporting results to various audiences. Old text may also be merged with new text, as when a standard letter is customized by adding a unique beginning and ending, or by searching and replacing a symbol (such as "*") with the name of a particular person. In this way, names, addresses and text can be merged to produce personalized form letters.

Blank forms such as activity logs can also be created and stored. They may be retrieved and completed for individual events and then stored again. At the end of a project the logs may be printed to document the activities which took place.

Printing

Some of the formatting features described above may have already set the general layout of a page, but with many word processors, final choices are made at the time of printing as to where the text is to appear on the printed page.

The first concept here is margin, that is, the blank space at the top, bottom, left, and right of the words. In most word processing programs you set the margins at values which are used most commonly (for example, letters or manuscripts), and only make changes for special cases (for example, outlines). When printing a document one must also decide if the text is to be right justified, that is, whether the words are to line up on the right side of the page in a straight line as they do on the left side of the page.

By using print commands embedded in the text of a document, some word processing programs allow for a variety of type styles and compressed, expanded, or proportional spacing between letters. Directions can also be given to a printer to make letters bold by striking them twice or emphasized by offsetting the letters slightly during two passes.

Headers and footers which do not appear in the text may be added at the time of printing. Page numbers may also be added automatically at the top or bottom of the page by the program as the document is being printed.

Spacing between the lines of text is often chosen at the time of printing (i.e., single space, double space). It is also possible to adjust the number of lines of text on a page, or to put it another way, to decide where each page stops, so that there are no widows or orphans at the top or bottom of a page.

The production of printed copies often includes options for sequentially printing multiple files, as when several standard documents (e.g., institutional capabilities, disclaimers) are printed along with the chapters in a particular proposal. This is an alternative to merging the documents before printing. At printing, the number of copies of a document to be printed can be selected so that one or more "originals" are created. If the use of single sheets rather than continuous, fan-fold paper is desired. This option is generally available. Using single sheets and some other special tasks call for interrupting and then resuming printing. For example, one way to customize a document is to insert personal items such as names into the body of the text. This can be accomplished by merging a form letter

with a separate list of names and personal information or by having the program pause to allow the entry of text at the time of printing.

To gain the greatest control over printing, the final formatted text of the document should be displayed on the monitor screen by the program. This is more or less the case. As with these and other features it is important to try before you buy. In the section on potential problem, guidelines for making decisions about particular software are described.

In summary, word processing programs provide flexibility in the organization of text from its initial typing, to editing, to merging with other text, to printing. One would not use all or even most of these features with any one document, but throughout a study they would be useful as different kinds of documents are created (e.g., form letters, memos, instruments, progress reports, fact sheets, final reports).

USES OF WORD PROCESSING PROGRAMS

Word processing programs are useful throughout the evaluation process. Their special formatting, editing, merging, and printing capabilities mean they can facilitate such tasks as the following:

- editing multiple drafts of proposals,
- creating special formats for proposals for different agencies,
- merging standard sections such as disclaimers or vitas with proposal narrative,
- merging and printing personalized form letters to study participants,
- creating special formats for study instruments,
- setting up and editing tables and figures,
- merging standard sections of periodic reports with new information,
- inserting information into a standardized form,
- printing multiple "original" copies of any document,
- storing original electronically, thus alleviating the need for many printed copies.

SELECTING THE RIGHT SOFTWARE

In one sense, hardware requirements are the first characteristic of a program that should be considered and, in another sense, they are the last. From a realistic point of view, the first criteria for selecting a program is whether it will run on a machine you already have, or on a machine that you feel you can afford to buy for statistical and other purposes. However, within these general constraints, hardware becomes a secondary consideration, because there is a variety of good programs to choose from for most of the popular and widely used machines with operating systems. Examples include Apple DOS 3.3, IBM-PC DOS or MS-DOS, and CP/M. Within each group, programs vary in terms of their sophistication and cost and in terms of the specific hardware system characteristics that they require.

In summary, if a commitment has already been made to purchase a particular machine, or if there are special budget limitations, hardware- elated requirements are the first features of a program that should be considered. However, if there are no rigid constraints, it is best to ignore these requirements for the time being and move on to the other more substantive features of word processing programs such as those shown in Figure 1.

It is important to evaluate a program in terms of its versatility regarding those features you need most. Selection may come down to the program(s) with the best ratings on those features of greatest importance as opposed to those with the best over-all ratings. This notion of the highest ratings on the most important features is worth considering. Sometimes pricing, especially in regard to multiple copies, is the deciding factor among programs of generally equal ratings. In other cases it may be that speed, error handling, and versatility (i.e., program performance) is more important than either ease of use or support. Therefore, lower ratings in these areas would not disqualify a program if it was a strong performer.

Using the information provided in this guide will help you to judge the quality of individual programs. The procedures also provide a way to compare programs in a consistent manner.

Any combination of features is possible. Selection should be based, therefore, on a consideration of the combination of features most desired for the types of tasks to be performed using the program.

In order to make a sound choice:

1. Describe your use(s) - what will you use the program for?

2. Identify the features you need - what do you want to be able to do?

3. Plan ahead for new needs - what are you likely to want a year from now?

4. Consider constraints - what price range, hardware (e.g., machine type, printer features) and user preferences are you limited by?

5. Put features into a rough priority list - which are the most, somewhat, and least important features?

6. Try out and compare products - which ones have the features you need and want within your constraints?

7. Remember support - will there be someone you can talk to if there are problems after you buy the program?

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