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ABSTRACT

          Research indicates that people tend to use only five
percent of the capabilities available in word processing software.
The major objective of this study was to determine to what extent
word processing was used by businesses, what competencies were
required by those businesses, and how those competencies were being
learned in Mid-South states. A questionnaire was mailed to selected
human resource managers in the metropolitan statistical areas of
Little Rock, Arkansas; Jackson, Mississippi; New Orleans, Louisiana;
Houston, Texas; and Oklahoma City, Oklahoma. Of the 81 usable
questionnaires returned, all 81 of the respondents were currently
using word processing software packages. WordPerfect was most
commonly used, by 62 businesses, followed by 28 using Microsoft Word,
and 15 using Q & A. Departments using word processing were: personnel
and human resources (33.3%); company-wide (42.0%); administrative
(33.3%); accounting (32.1%); and marketing and sales (18.5%). Primary
word processing applications used included: letters (96.3%); memos
(92.6%); reports (91.4%); envelopes and labels (81.5%); tables
(75.3%); newsletters (66.7%); columnar text (64.2%); and electronic
mail (45.7%). In responding to what employees who use word processing
need to know, 93.8% indicated that basic formatting was the most
needed skill, followed by: speller/thesaurus (85.2%); move/copy
(79.0%); file (75.3%); disk maintenance (72.8%); graphics (34.6%);
and macros (27.2%). Of the businesses using word processing, 50.6%
indicated that word processing knowledge was highly desirable in
prospective employees; 38.3% indicated that it was desirable. The
following 12 tables of data are provided: word processing software
used; word processing applications; built-in functions; word
processing knowledge areas; file management competencies; format
competencies; insert and delete competencies; key competencies;
miscellaneous competencies; table competencies; factors considered in
selecting software; and type of responding business. (Contains 19
references.) (MAS)

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WORD PROCESSING COMPETENCIES

Abstract

Research indicates that people tend to use only about 5 percent of the capabilities available in word processing software. Does this indicate that we are over-buying, under-using, or not exploring our software carefully enough after purchasing it? Perhaps the solution involves additional training or retraining to inform users of the features which are available on their word processing program (Yakal, 1991).

The major objective of this study was to determine to what extent word processing was used by businesses, what competencies were required by those businesses, and how those competencies were being learned in Mid-South states. Word processing competencies were identified by Otto (1991), but had not been verified by businesses using word processing. Competencies needed by business should be included in the business curriculum and courses.

Review of Literature and Problem Statement

Success in the business world of today requires the ability to function efficiently in a technical environment. According to a 1990-91 survey, 12 percent of strictly typing applications are done on an electronic typewriter, 7 percent are done on a dedicated word processor, and the remaining 81 percent are done on a word processing application running on a computer (Romei, 1992). Since most people will interact with computers at their place of employment, a knowledge of computers and business application software is becoming extremely important in both job performance and career development (Kroenke, 1984). Competent operation of word processing equipment is imperative in this environment which includes networking, electronic mail, spreadsheets, databases, graphics, CAD, and multimedia technology.

The impact of the computer has not yet peaked. Every year computers are becoming less expensive and yet more powerful. Thus, the use of computers is increasing as is the demand for knowledgeable people to operate them (Holley, 1982). Research indicates that expanded computer use, rapid office technology changes, the changing nature of office jobs, new systems and procedures, and new careers related to information processing have resulted in a need for additional basic skills and knowledge for employment in the automated office (Otto, 1991).

Like computers, software packages are developing at an amazing rate (Miles, 1992). Software users are demanding programs that allow the use of a variety of programs that operate together seamlessly. Thus, software houses are designing products around how people actually use them rather than how software engineers think they should use them. Gone are the "roadblocks" that caused inexperienced word processing users difficulty (Miles, 1992).

Word Processing. The word processing software of today is opening new awareness for more people to communicate. Word processing has changed from a single function, stand-alone application to an integral part of a department's information processing needs. Word processing became part of the "bigger plan" when it changed from a secretarial to a professional tool (Barr, 1989). People initially moved from the dedicated systems to personal computers that used word processing software as one application. Those same individuals are now shifting from character-based word processing software to packages incorporating graphical user interfaces (GUIs). The introduction of Windows 3.0 (a GUI) inspired a new breed of word processors having the ability to use the word processor to import and manipulate graphics along with the classical text handling functions available to the operator. However, this equipment came with a price--more powerful, more expensive computer systems (Yakal, 1991).

In the PC environment of today, people can produce things like newsletters with graphics and other multicolumn documents. Even internal reports, which are not usually eye appealing, are becoming so attractive that the data jumps out at you (Yakal, 1991). Word

processing software is now opening new avenues for more people to communicate (Yakal, 1991).

Word processing has affected all levels of productivity. On an individual basis, it has allowed for efficiency gains of individual workers. Work flow has changed as more professionals use the tool to initially develop a document and often send it to a secretary for final editing, formatting, and printing. Work group productivity has also been affected. Word processing was often the first form of groupware available on local area networks, thus allowing all users in a department or group to share documents whose management became a key concern as they were altered and stored in different forms (Barr, 1989).

Concern over document management escalated into the development of information management as word processing grew from the work group to the enterprise-wide environment. Document interchange and common formatting were required, and word processing software became standardized to reduce these problems (Barr, 1989).

A 1987 study revealed that word processing software was used by 75 percent of the internal auditors responding to the survey, while approximately 38 percent used spreadsheet applications. Word processing is used primarily for report generation (Kaplan, 1991). Ease of revision or editing of text has contributed to the expanded use of word processing (Baker and Pearch, 1987).

Whitmyer (1991) predicts that the major players in software development--Microsoft, Lotus, WordPerfect, and Borland--would expand their product lines to cover all major applications: spreadsheets, databases, word processing, and communications. In business, local area networks (LANs) will give all users access to the same software and data (Whitmyer, 1991). Continued growth is expected in the document and image processing fields, together with project management, databases, spreadsheets, and word processing (Miles, 1992). The addition of graphics and the increased layout versatility has expanded the use of desktop publishing software (Wormald, 1989).

The Windows word processing package has spawned a new division of word processing software, providing an opportunity for word processing specialists to increase their worth by mastering the new technology (Wormald, 1989). Yakal (1991) reported that the computer world was moving toward the Windows environment and some retraining would be needed. The built-in document conversion feature of the new Windows made "the switch" even simpler.

Competencies. Research indicates that people tend to use only about 5 percent of the capabilities available in word processing software. Does this indicate that we are over-buying, under-using, or not exploring our software carefully enough after purchasing it? Perhaps the solution involves additional training or retraining to inform users of the features which are available on their word processing program (Yakal, 1991).

Otto's (1991) survey rated the importance of 285 competencies to identify those necessary for an applications course. Results indicated eight competencies which were **essential** for inclusion in an applications course and seven competencies which were important for inclusion in a word processing course. The essential competencies included: keyboarding, entering text, editing, inserting and deleting characters, format, file management, printing, and miscellaneous (help menu). The **important** competencies include: keyboarding, editing, confirm, format, file management, printing, and miscellaneous (Otto, 1991). Table 1 and Table 2 in Appendix A provide detailed listings of the study's competencies.

Objectives

The major objective of this study was to determine to what extent word processing is used by businesses, what competencies were required by those businesses, and how these competencies were being learned in Mid-South states. Word processing competencies had been identified by Otto (1991), but had not been verified by businesses using word processing. Competencies needed by business should be included in the business curriculum and courses.

Methodology

The procedures for this research project included: 1) development of a questionnaire; 2) validation of the questionnaire; 3) appropriate revisions of questionnaire; 4) mailing of questionnaire to selected human resource managers in the Metropolitan Statistical Areas of Little Rock, Arkansas; Jackson, Mississippi; New Orleans, Louisiana; Houston, Texas; and Oklahoma City, Oklahoma; 5) one follow-up letter to the questionnaires; 6) processed received data using statistical analysis; 7) analyzed, interpreted, and compared processed data.

Findings

Of the 81 usable questionnaires returned (661 mailed), all 81 of the respondents were currently using word processing software packages. The number of employees using word processing ranged from 1 to 4,500 with an average of 212.

As shown in Table 1, 62 businesses (76.5 percent) commonly used WordPerfect. Microsoft Word and Q & A were the second and third most commonly used word processing software but by less than 30 percent.

TABLE 1 Word Processing Software Used		
Software	No.	Percent
WordPerfect	62	76.5
Microsoft Word	28	34.6
Q & A	15	17.9
Professional Write	9	10.7
Word Star	8	9.5
Ami Pro	6	7.1
Macintosh ASCII	4	4.8
Display Write	3	3.7
Word for Windows	2	2.4
Multi Mate	2	2.4

Word processing software was used company-wide by 34 (42.0 percent) of the respondents using word processing software. Twenty-seven (33.3 percent) of the businesses responding were using word processing software in their personnel and human resource management departments. Other identified departments using word processing software were: Administrative 27 (33.3 percent), Accounting 26 (32.1 percent), and Marketing and Sales 15 (18.5 percent).

The businesses had been using word processing software an average of eight years nine months with some businesses having used them as long as they have been available.

In response to questions regarding the uses of word processors by the businesses, the primary applications were letters (96.3 percent), memos (92.6 percent), and reports (91.4 percent). Other high uses included envelopes and labels, tables, newsletters, columnar text, and e-mail. Table 2 identifies the applications and the responses by businesses.

TABLE 2 Word Processing Applications		
Application	No.	Percent
Letter	78	96.3
Memos	75	92.6
Reports	74	91.4
Envelopes and Labels	66	81.5
Tables	61	75.3
Newsletters	54	66.7
Columnar Text	52	64.2
Electronic Mail	37	45.7

From the business responses to the use of built-in functions in word processors, spellcheck and centering functions were used the most by 77 (95.1 percent) each. The underline and bold functions were next with 76 (90.5 percent) each. The built-in function for tables of authorities/generations were used the least by only 14 (17.3 percent). Table 3 compares the uses of built-in functions by the businesses.

TABLE 3		
Built-In Functions		
Functions	No.	Percent
Spellcheck	77	95.1
Center	77	95.1
Underline	76	93.8
Bold	76	93.8
Tabs	75	92.6
Page Number	70	86.4
Move and Copy	70	86.4
Font Changes	68	84.0
Headers and Footers	64	79.0
Merge Documents	62	76.5
Date code	55	67.9
Line Draw	52	66.7
Search and Replace	52	66.7
Thesaurus	50	61.7
Tables	49	60.5
Select	48	59.3
Outline	46	56.8
Graphics	46	56.8
Macros	39	48.1
Styles	37	45.7
Index/List Generators	31	38.3
Table of Contents/Generations	29	35.8
Table of authorities/Generations	14	17.3

In responding to what employees who use word processing needed to know, 76 businesses (93.8 percent) indicated that basic formatting was the most needed skill. The least needed skill was macros by 22 (27.2 percent). Macros and graphics were the only skills that

were below 70 percent. Table 4 shows the skills employees need to have according to the businesses responding.

TABLE 4 Word Processing Knowledge Areas		
Need to Know	No.	Percent
Basic Formatting	76	93.8
Speller/Thesaurus	69	85.2
Move/Copy	64	79.0
File	61	75.3
Disk Maintenance	59	72.8
Graphics	28	34.6
Macros	22	27.2

The editing competencies had been identified by Otto as correcting by backspacing, deleting to the left, deleting to the right, keying over existing text, searching for words, searching and replacing text, and undeleting text. Correcting by backspacing was considered essential by 59.3 percent with only 2.5 percent considering it not important. Keying over existing text was considered essential by 40.7 percent with not important indicated by only 2.5 percent. Deleting to the right was considered important or better by 95.1 percent while deleting to the left was 92.6 percent. Only 27.2 percent considered undeleting text as essential but had a total of important or better of 90.1 percent. Searching and replacing text was considered important or better by 86.4 percent, and searching for words by 85.2 percent.

More than 50 percent of the respondents considered using return or enter, keying capital letters, and using the wrap around feature as essential. Using return or enter received no not important responses. Keying capitals and using wrap around received only 1 not important response each.

For the file management competencies, storing a document to disk and retrieving a document file from storage were rated essential by more than 50 percent of the respondents. Those file management competencies rated as important or better by more than 90 percent of the respondents were storing a document to disk, storing a document to disk and quitting, retrieving a document file from storage, storing a document to disk and resuming, copying a document file, deleting a document file from storage, loading or saving part of a document file, and renaming document files. Table 5 lists the file management competencies rated as important or better.

TABLE 5 File Management Competencies		
File Management	No.	Percent
Store to Disk	79	97.5
Store to Disk and Quit	78	96.3
Retrieving File from Storage	77	95.1
Store to Disk and Resume	77	95.1
Copying a File	77	95.1
Delete File from Storage	76	93.8
Load or Save Part of File	74	91.4
Display Files on Disk	74	91.4
Rename Files	74	91.4
Store to Disk and Switch to Another File	73	90.1
Consolidate Two Files	71	87.7
Store to Disk with Overwrite	69	85.2
Abandon a File	68	84.0
Lock or Protect File	67	82.7
Change Data Drive	66	81.5

Otto had identified 23 formatting competencies. Only adjusting margins and setting left and right margins were considered essential by 50 percent or more of the respondents. All 23 competencies were considered as important or better by 50 percent or more of the respondents. The formatting competencies rated as important or better by the respondents are shown in Table 6.

TABLE 6 Format Competencies		
Formatting	No.	Percent
Adjust Margins	80	98.8
Insert Blank Lines	80	98.8
Set Left and Right Margins	79	97.5
Insert Page Break	79	97.5
Indent Paragraph	79	97.5
Set Top and Bottom Margins	79	97.5
Center Headings	79	97.5
Indent Left and Right	78	96.3
Justify Margins	78	96.3
Double Space	78	96.3
Set Tabs	77	95.1
Adjust Line Spacing	77	95.1
Center Page	75	92.6
Adjust Word Wrap	74	91.4
Margin Release	74	91.4
Tab Align	73	90.1
Work with Indent Tabs	73	90.1
Set Decimal Tabs	72	88.9
Set Characters per Inch	70	86.4
Set Lines per Inch	70	86.4
Work with Decimal Tabs	66	81.5
Work with Line Draw	65	80.2
Super/Subscript	64	79.0

Of the inserting and deleting competencies, only inserting and deleting a sentence and moving a block were rated as essential by 50 percent or more of the respondents. All 10 of the identified inserting and deleting competencies were rated as important or better by more than 90 percent of the respondents. Table 7 identifies those business responses rated as important or better on the inserting and deleting competencies.

TABLE 7 Insert and Delete Competencies		
Insert and Delete	No.	Percent
Sentence	79	97.5
Move Block of Text	79	97.5
Copying Text	78	96.3
Copying Blocks	78	96.3
Reformat Text	78	96.3
Move Text	77	95.1
Delete Block of Text	76	93.8
Delete to End of Line	75	92.6
Insert and Delete Words	75	92.6
Delete to End of Page	75	92.6

Of the 12 keying competencies, three were identified as essential by 50 percent or more of the responding businesses. Those competencies were creating a document, cursor movement keys, and function keys. All of the competencies were rated as important or better by more than 75 percent of the respondents. Table 8 lists the keying competencies and the percentage of respondents rating them as important or better.

TABLE 8 Key Competencies		
Key	No.	Percent
Create Document	78	96.3
Cursor Movement Keys	78	96.3
Underline Text	77	95.1
Boldface	77	95.1
Center Headings	76	93.8
Function Keys	75	92.6
Center Lines	75	92.6
Create Forms	73	90.1
Lines: Status, ruler, and menu	72	88.9
Hard Spaces & Returns	70	86.4
Go To Command	65	80.2
Numbered Lists	63	77.8

None of the miscellaneous competencies were rated as essential by 50 percent or more of the business respondents. The spelling function and Help were rated as important or better by more than 90 percent of the businesses. Only boiler plating was not rated as important or better by 50 percent or more of those responding. Table 9 identifies the miscellaneous competencies and the percent of response by the businesses of important or better.

TABLE 9		
Miscellaneous Competencies		
Perform Spelling Function	77	95.1
Help Menu	74	91.4
Work with Text or Data Files	72	88.9
Perform Thesaurus Function	68	84.0
Work with Columns and Column Functions	68	84.0
Headers and Footers	66	81.5
Merging Two or More files	66	81.5
Perform Style Functions	66	81.5
Composing Text	65	80.2
Cancel Key	65	80.2
Upper/Lower Case Convert	65	80.2
Perform Grammar Functions	64	79.0
Work with Multiple Files on the Screen	64	79.0
Work with Hyphenation	63	77.8
Endnotes or Footnotes	63	77.8
Sort Function	62	76.5
Insert Text Variables	61	75.3
Work with Windows	60	74.1
Perform Math Functions	57	70.4
Perform Automatic Table of Contents	56	69.1
Defining Macros	54	66.7
Work with Orphans	52	64.2
Perform Automatic Indexing	42	51.9
Boilerplating	36	44.4

Printing a document was rated as essential by 69.0 percent of the respondents, while knowing the printer setup was essential for 50.0 percent. No other printing competencies were rated as essential by 50 percent or more of the respondents. Of these competencies, printing a

document, printing multiple copies, printing the current page, and printing part of a document were rated as important or better by more than 90 percent of the businesses. No printing competency was rated important or better by less than 50 percent of those responding. Table 10 shows the printing competencies and businesses ratings of important or better.

TABLE 10 Table Competencies		
Print	No.	Percent
Print a Document	77	95.1
Print Multiple Copies	75	92.6
Print Current Page	75	92.6
Print Part of a Document	73	90.1
Print Set-up	72	88.9
Print from Disk	71	87.7
Page Number Position Set-up	71	87.7
Print Screen	70	86.4
Print More than One Document	69	85.2
Print Envelopes	69	85.2
Print Different Sized Paper	68	84.0
Conditional End of Page	68	84.0
Print with Sheet Feeder	67	82.7
Work with Different Fonts and Enhancements	67	82.7
Work with Automatic Pagination	67	82.7
Work with Printer Commands	64	79.0
Print to Disk	63	77.8

Ease of learning and ease of using were the primary factors considered when selecting word processing software with 69.0 percent and 64.3 percent respectively. Ease of interfacing, price, and speed of retrieval were the other factors considered by 50 percent or more of the respondents in selecting a word processing software package. The factors considered in selecting software are listed in Table 11 with the ratings by the responding businesses.

TABLE 11		
Factors Considered in Selecting Software		
Factors	No.	Percent
Ease of Learning	58	71.6
Ease of Using	54	66.7
Ease of Interfacing	45	55.6
Speed of Retrieval	43	53.1
Price	43	53.1
Speed of Copying	39	48.1
Speed of Saving	39	48.1
Ease of Technical Support	37	45.7
Speed of Speller and Thesaurus	34	42.0
Speed of Moving	33	40.7
Ease of Documentation	32	39.5
Speed of Sorting	30	37.0
Other	14	17.3

Forty-one (50.6 percent) of the businesses using word processing indicated that word processing knowledge was highly desirable in prospective employees, and 31 businesses (38.3 percent) indicated it was desirable. Five (6.2 percent) of the businesses indicated it was not needed, but none of the respondents indicated it would negatively affect a prospective employee's opportunity for employment.

In promotion and granting merit raises, only 18 (22.2 percent) indicated that word processing knowledge would be highly desirable while 39 (48.1 percent) indicated it would be desirable. Seventeen (21.0 percent) indicated it was not needed, and 2 (2.5 percent) of the businesses felt it would negatively affect an employee's prospects.

When asked if word processing usage would increase in their businesses, 67 (82.7 percent) indicated it would. Training was the primary difficulty in word processing usage by 17 (21.0 percent) of the businesses. Other difficulties identified included: hardware insufficiency and incompatibility, lag time between installation and availability of training, and losing data.

On the job (79.0 percent) was where most employees received training on word processing software. The other principal means of learning word processing software reported were technical/community colleges by 14 (17.3 percent), vocational schools by 11 (13.6 percent), and four-year colleges or universities, with high schools, and adult learning centers by 8 each (9.9 percent).

Demographics

     Businesses indicating use of word processing software were 81 (100.0 percent). A breakdown of the types of businesses responding and of those using word processing is shown in Table 12.

TABLE 12 Type of Responding Businesses		
Type of Business	No.	Percent
Manufacturing	29	35.8
Hospital	14	17.8
Utility	8	9.9
Insurance	5	6.2
Retail-Wholesale	5	6.2
Construction	4	4.9
Distribution	2	2.5
Transportation	2	2.5
Finance	2	2.5
Communications	2	2.5
Business Service	2	2.5
Legal Service	1	1.2
Real Estate	1	1.2
Communications	1	1.2
Other	3	3.7

     The responding businesses indicated that 52 (61.9 percent) were located in metropolitan areas, and 51 (98.1 percent) used word processing software. Of the 21 (25.0 percent) suburban businesses, 20 (95.2 percent) used word processing software while 7 (87.5 percent) of the 8 (9.5 percent) rural businesses used them.

     The 81 responding businesses employed 81,281 employees with 14,187 (17.5 percent) of them using word processing software. This is an average of 212 employees using word processing per business. The businesses ranged in size from 14 to 18,000 employees with the average being 1,084. The mode was 1,000 employees with 6, and the midpoint of the range was 335.

Summary

Word processing was used by 100 percent (81) of the responding businesses with WordPerfect being used by 76.5 percent (62) of these businesses. Microsoft Word was used by 34.6 percent (28) responding businesses. Other software packages were used by 18 percent or less of the respondents.

Word processing was used company wide by 42 percent (34) of the responding businesses. Thirty-three percent (27) of the respondents used word processing software in their personnel and human resource departments.

The major difficulty reported in the use of word processing software was lack of training. Most employees have been trained on-the-job and often that was self-training. As word processing usage is expected to increase, the need for training will continue to grow. In selecting the company's current word processing software, ease of learning and ease of use were identified as the primary factors considered by 69 percent and 64.3 percent of the respondents respectively.

Primary applications of word processing by respondents were letters (96.3 percent), memos (92.6 percent), and reports (91.4 percent). Other high uses included envelopes and labels, tables, newsletters, columnar text, and e-mail.

The built-in functions that were used most by responding businesses were the spell check and centering functions which were each used by 95.1 percent of respondents. Other built-in functions used by 50 percent or more of businesses were underline, bold, tabs, page number, move and copy, font changes, headers and footers, merge documents, date code, line draw, search and replace, and thesaurus.

All of the competencies identified by Otto were rated by respondents as **important or better** by 45 percent or more of the responding businesses. Of those competencies, the businesses identified only 15 as **essential** by 50 percent or more of the word processing users. Those identified as **essential** competencies by respondents include: correcting by backspacing, using return or enter, keyboarding capital letters, using wraparound to enter text, storing document to disk, retrieving document file from storage, storing document to disk and quitting, adjusting margins, setting left and right margins, inserting and deleting sentences, moving a block of text, copying text, creating a document, cursor movement keys, and function keys.

Recommendations

1. The competencies rated as essential must be included in any word processing course, and the competencies rated as important or better should also be incorporated.

2. Word processing training should be made available to businesses, employees, and prospective employees by appropriate schools and individuals.

3. Because of the widespread use of word processing software and the desirability of its skills, word processing should be taught to all business students as a skill, and word processing applications should be used in appropriate subject areas as a tool.

4. Availability to word processing training should be developed to serve traditional and nontraditional students.

5. Word processing trainers/teachers should identify the needs, develop applicable course content, and offer word processing training to all levels of employees.

6. Word processing courses should be developed for and offered to adult learners with particular attention to the needs of businesses.

7.   This research should be replicated on a statewide and a national basis.

8.   This research should be replicated in three to five years to determine changes in the requirements and needs of businesses, as well as the status of word processing training.

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