SOFTWARE: WHAT ARE BUSINESSES USING? IMPLICATIONS FOR COMPUTER EDUCATION

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INTRODUCTION

Computer software is changing so rapidly that it is impossible at times for educational institutions and businesses to change along with it. Many such changes facing educators and business people are the choices of Windows 95, Windows NT, OS/2, and the other operating systems on the market. Also, there are many different brands of software for word processing, database, spreadsheet, desktop publishing, and presentation or multimedia instruction. The software suites create more choices--Microsoft Office, Corel Suite, and Lotus Suite. There is considerable debate over which allows for more efficient learning and working.

RELATED RESEARCH

A survey of literature shows that business spending is increasing for computer software. The monthly Computer Reseller News magazine (The Gallup Organization Inc.) reports that their purchasing polls show personal computer spending by small- to mid-size businesses increased 47%. Software sales topped the list of priorities among smaller businesses. On average, 72% of the poll respondents said they were likely to spend more on software, 68% planned to increase expenditures on desktop computers, and 64% expected to increase spending for networking (5).

Goldstein (2) reports that while Windows 95 makes a nice array of features, switching to it makes little sense for many people. Apple's Macintosh operating system remains slightly friendlier than Windows 95, although it lacks some of its bells and whistles, and IBM's OS2 also has its fans. However, Windows 95 is fairly solid, and the outlook should only improve.

A study of Fortune 500 companies conducted in 1996 shows that respondents recommended that business students possess computer end-user skills in each of the following areas: computer hardware, operating systems, word processing, spreadsheet, desktop publishing, programming in word processing, spreadsheet, and database, telecommunications and groupware, and discipline-specific information systems related to student major (7). This finding is consistent with research on computer-competency requirements for business and computer technology occupations by the Ohio State University Center on Education and Training for Employment (4).

Respondents in the Fortune 500 study ranked the skills related to Microsoft Windows, Word, Excel, Access, and PowerPoint at the top in their respective software categories (7). A Forbes 100 study conducted in the Spring of 1997 shows

similar results (6). However, prior survey results of business school computer usage indicate that WordPerfect, Lotus 1-2-3, dBASE, and Harvard Graphics dominated most computer labs in business schools (3). This information shows that businesses and business schools are not in sync.

Bill Gates (1) emphasized that in a changing world, education is the best preparation for being able to adapt. As the economy shifts, people who are appropriately educated will tend to do best. Gates' advice is "to get a good formal education and then keep on learning." To provide such an education, educators need to determine business computer usage.

STATEMENT OF THE PROBLEM

In order to prepare students for working with computers in their personal and professional lives, business educators must know about computer software usage in their communities. In order for educators to meet the needs of students and their communities, they must answer the following questions:
1. What computer software programs are businesses using?
2. Are the current needs of businesses being met by their existing software?
3. What are their plans for the future?

METHODOLOGY

In order to determine what computer software area businesses are using, a survey was conducted in the Fall of 1996. The 22-item questionnaire included questions on software usage, current needs, as well as plans for future changes. The businesses surveyed were those chosen as the top 100 privately-held businesses in Acadiana as determined by **The Times**, a local newspaper based in Lafayette, Louisiana. The Acadiana region is in south Louisiana and is composed of eight parishes (counties). **The Times** ranked the top 100 companies based on revenues. These companies represented the following industries: manufacturing, distribution, transportation, oil, automobile dealership, medical, rice milling, raw sugar processor, supermarket, construction, radio and television, and lumber. The initial and follow-up mailings resulted in a 57% response. Data collected were analyzed to determine frequency and percentages.

ANALYSES OF DATA

Data collected from the survey of the 100 top Acadiana businesses answered questions regarding computer software

usage, needs of companies, and plans for the future. Frequency distributions and percentages were used to analyze data from the 57 respondents. All percentages in the following tables were calculated using a divisor of 57, the total response.

Windows 3.1x and DOS are the operating system software used most frequently (70%, respectively) followed by Windows 95 and UNIX (30%, respectively). The percentages in Table 1 indicate that some companies are using more than one type of operating system. When new operating systems are purchased, companies buy upgraded versions. They also continue to use older versions. The "Other" category brought the following responses: Novell, AIX, OS 400, DIS, and AS/400.

TABLE 1
Operating System Usage

	Number of Respondents	Percentage
Widows 3.1x	40	70
DOS	40	70
Unix	17	30
Windows 95	17	30
Windows NT	4	7
Mac	3	5
Other	6	11
No response	3	5

Multiple responses were possible

All 57 of the respondents use word processing software. Microsoft Word and WordPerfect are the programs used most often (Table 2). As percentages show, workers are using a variety of word processing software within companies. The "Other" category showed that some companies are using Professional Write, IBM Works, and PageMaker.

TABLE 2
Word Processing Software Usage

	Number of Respondents	Percentage
Microsoft Word	31	54
WordPerfect 6.1 for Windows	26	46
WordPerfect 6.0 for DOS	18	32
WordPerfect 5.1 for DOS	11	19
Ami Pro	3	5
Other	5	9

Multiple responses were possible

Sixty-five percent of the respondents use database software. The response of 65% usage shows that 35% of the businesses are using something else for their business records. Specialized programs designed for specific industries contain built-in databases. Perhaps use of these specialized programs accounts for the results shown here.

Database software usage is shown in Table 3. The program used most often is Access (37%). FoxPro, dBASE, and Paradox are used to a lesser extent. The "Other" category brought a variety of responses: Alpha 4, IBM Works, MS Works, Claris Works, dBASE III Plus, Lotus Approach, Q & A, Lotus 4 for Windows, Lotus 1.1 for Windows.

TABLE 3
Database Usage

	Number of Respondents	Percentage
Access	21	37
dBASE IV	8	14
FoxPro	8	14
Paradox	5	9
dBASE V for Windows	1	2
Other	10	18

Multiple responses were possible

Ninety-six percent of the respondents use spreadsheet software. The program most frequently used is Excel (Table 4). Lotus 5 for Windows follows with 35%; Lotus for DOS, 33%, and Quattro Pro for Windows, 9%. Other spreadsheet programs used are Lotus 4 for Windows and Lotus 1.1 for Windows.

TABLE 4
Spreadsheet Software Usage

	Number of Respondents	Percentage
Excel	36	63
Lotus 5 for Windows	20	35
Lotus for DOS	19	33
Quattro Pro for Windows	3	5
Other	5	9

Multiple responses were possible

Desktop publishing software is used by 32% of the respondents. Table 5 shows that the most frequently used program is PageMaker. "Other" software used are Microsoft Publisher and Frame Maker.

Approximately half of the respondents use presentation or multimedia software. As Table 6 shows, the most frequently used program is PowerPoint. Harvard Graphics, WordPerfect Presentations, and Lotus Freelance are used to a lesser extent.

Ninety percent of the respondents use accounting software. Businesses are using a wide variety of programs. Forty-two percent use special programs designed for their industries as depicted in Table 7. The "Other" category showed that a variety of software brands are used: MAS 90, Platinum, Real World, Progress Version 7, Ly7bra, MAS 90 Payroll, UCS Mac, Quicken, Compas (UNIX), Quick Books, DIS, Custom Unix Base, US Computer, Timberline, ACCPAC, Champion.

TABLE 5
Desktop Publishing Software Usage

	Number of Respondents	Percentage
PageMaker	11	19
Corel Ventura	3	5
Publish It	1	2
QuarkxPress	1	2
Other	4	7

Multiple responses were possible

TABLE 6
Presentations/Multimedia Software Usage

	Number of Respondents	Percentage
PowerPoint	24	42
Harvard Graphics	8	14
WordPerfect Presentations	4	7
Lotus Freelance	3	5

Multiple responses were possible

TABLE 7
Accounting Software Usage

	Number of Respondents	Percentage
Special Program for Industry	24	42
Peachtree	2	4
Other	27	47

Multiple responses were possible

Most of the respondents (61%) use integrated software. Microsoft Office is the integrated software used most often as Table 8 shows. Microsoft Works, Corel Suite, and Lotus Suite show considerably less usage.

TABLE 8
Integrated Software Usage

	Number of Respondents	Percentage
MS Office	29	51
MS Works	7	12
Corel Suite	4	7
Lotus Smart Suite	3	5

Multiple responses were possible

Respondents were asked to list other software they are using. The responses were as follows: ACAD 12 (engineering), UCS Auto Dealer Software, EDI, Trucking Software, AutoCAD, ABC Flowcharter, Telecations, Timeline Scheduling, PC Tools, PC Anywhere, Micrografix, and MS Project.

Almost 80% of the respondents indicate that their software is meeting the needs of their companies. However, 40% are planning to make software changes. The changes in software involve upgrading current software. Specifically, they plan to upgrade to Windows 95 or Windows NT, change to MS Office, change scheduling packages, and upgrade accounting software to 32 bit.

One respondent made the following comment: "It is important that business graduates be proficient in word processing and spreadsheet usage. Accounting graduates should be trained in the basics of hard disk management and network administration, as the controller generally assumes this role in small businesses."

CONCLUSIONS

Respondents to this survey seem to be in a state of transition as indicated by the variety of software used. Most businesses are using newer versions of software while still hanging on to older systems that are still functional. From this data it is recommended that educational institutions strive to keep up with technology while realizing the businesses in the community are probably doing the same thing. Although students will encounter a variety of software when entering the job market and should be prepared to adapt to any existing technology, schools should provide learning on the software that predominates in the community.

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