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Recommended Citation

Jennings, Susan Evans and Wilson, S. Ann, "Are We Teaching the Computer Application Skills Employers Need?" (2006). *Faculty Publications*. Paper 41.
http://scholarworks.sfasu.edu/businesscom_facultypubs/41

Are We Teaching the Computer Application Skills Employers Need?

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Introduction

Among the skills that employers have desired of new employees over the years, computer literacy still ranks near the top. As anyone who uses technology can attest, hardware and software changes are rapid and continual. The question arises as to whether the need for basic computer skills: word processing, spreadsheets, and databases have been replaced or augmented by the need for webpage design, programming, and desktop publishing skills?

Purpose

The purpose of this study is to determine current employers' attitudes toward basic application software skills that employees need. Universities desire their curricula to be as pertinent as possible. Therefore, based on a survey of employers who recruit at a regional university in Texas, the research question addressed is: What computer skills should we be teaching students to prepare them best to meet employers' needs and expectations.

Review of Related Literature

Each year numerous companies send recruiters to university campuses looking to hire graduates. According to L. Baird, as cited in an article by Gunderson (2005), "college recruiting provides over 50 percent of the hires of professional, technical and managerial positions filled by organizations". Since the world continues to be transformed by technology, colleges and universities are beginning to recognize that graduates must develop and be able to demonstrate their competency in the use of technology. In fact, the Educational Testing Service has coined a new designation for technology as the fourth basic literacy (Landgraf, 2005).

A decade ago in the 1995-96 study by Michigan State University (Scheetz, 1996) on recruiting trends, the synopsis of needed skills for acquiring a job indicated that applicants not be "cyber-shy." The report showed that employers wanted to recruit those who had a command of popular office technology software. Today's employers are still looking for much the same thing. According to Hansen and Hansen with Quintessential Skills, "Almost all jobs now require some basic understanding of computer hardware and software, especially word processing, spreadsheets, and email." With the increased use of personal computers, most staff, even those at the top echelons, are producing their own correspondence, a task once performed primarily by secretarial personnel (Maitland, 2005). Challenger (2003) indicates that as our nation's use of and dependency on technology increases, even more jobs will require computer skills. According to the Des Moines Business Record Online (2005), "Knowledge of the Microsoft Office suite is the bare minimum expectation today."

The fact that almost every occupation requires some degree of computer or technical skills seems to be often overlooked. McCune (1999) felt that education was "too separatist." She indicated that for those pursuing a liberal arts degree, instruction in technical skills was not considered important. In "Expanding Workforce Greets New Grads" found in the April 16, 2005, USA Today paper, Challenger, Gray & Christmas Inc. from Chicago were quoted as saying, "Even if technology is not your chosen field, college graduates must have technical skills in today's job market. Technology is prevalent in almost every type of business. Those who do not embrace this fact will be left behind."

It appears today that many universities are informing students of the computer skills for

which employers are looking. The Clemson University career page, titled "Qualities Employers Desire in New College Graduates," lists the need for "established word processing, spreadsheet, database and presentation software skills" and "excellent computer literacy." Similarly, the Central Washington University career page, titled "Simply Having A Degree Is Not Enough To Get A Job In The Current Labor Market," lists the "ability to appropriately apply technology and effectively use office software and the web to accomplish job responsibilities" as a need for today's graduates.

In a 10-month study (January 2004 – October 2004) conducted by the Canadian government using the Toronto Star, The Globe, and the Toronto Sun, data was obtained on the technical skills required by employers advertising job positions. Results of their study showed how many ads specified a particular type of software proficiency such as: office suite, spreadsheet, word processing, database, and also software such as drafting, multimedia, presentation, and other specialized software. The results were then broken down further to show within a general software category whether or not a specific software package was indicated. Microsoft Office Suite was required by 99.5% of the 195 job openings advertised which specified an office suite. Regarding word processing software, Microsoft Word was required by 90.5% over Corel Word Perfect which constituted the other 9.5%. Other software that was most requested in employment advertisements in their respective categories were: Java, Microsoft PowerPoint, Microsoft Access, Microsoft Excel, and Microsoft Outlook. The full results of this extensive study can be found at the Canadian Government website provided in the reference section of this paper.

Methodology

The researchers sent questionnaires to 115 employers who had recruited on the university campus for all disciplines in the spring semester. The list of employers was obtained from the Office of Career Services. A follow-up request, along with an addressed, stamped envelope, was sent to all those who had not responded within three months. Surveys were tallied and results were graphed. The analysis of the data was based on the total response rate of 34%.

Participants were asked to rank on a Likert-type scale the software skills needed by the employees they were recruiting. The scale ranged from a 5, indicating knowledge of a listed software was required, to a 1, indicating that a particular software knowledge was not needed at all for employment. The software programs included on the survey were: Microsoft Word, Microsoft Excel, Microsoft Access, Microsoft PowerPoint, Microsoft Outlook, Microsoft Internet Explorer/Netscape Navigator, Corel WordPerfect, Microsoft FrontPage, Macromedia Dreamweaver, Macromedia Flash, Macromedia Fireworks, Instant Messenger/Virtual Team Environment, Adobe Photoshop, Java Programming, and Other.

Findings

In addressing the research question, "What computer skills should we be teaching students to prepare them best to meet employers' needs and expectations," it was clear from the responses that Microsoft Word is the most widely "required" software application for the employers who recruit on this university campus with 31.43% ranking it as "required" for employment (see Figure 1). When expanded to include "desirable" software knowledge, this number for Microsoft Word rises to 62.86% (see Figure 2). That percentage rose to 97.14% when the choice of "beneficial or useful" was added, and only 2.86% indicated that Word was "not needed or useful" at all for employment with their company (see Figure 3).

When looking at other software program knowledge "required" that ranked highly on the list (see Figure 1), Word was followed by Internet Explorer/Netscape Navigator with 28.57%, Microsoft Outlook with 27.78%, and Microsoft Excel with 25.71%. After the top four, the next highest "required" software knowledge drops to only 5.56% of employers

requiring PowerPoint, 3.24% requiring Java programming, and finally Microsoft Access and WordPerfect being required by only 2.86% each. In the "Other" category, there was only one response, and that was a proprietary software. Though there are new software programs that now are being required or desired of job applicants, word processing software skill continues to be the number one requirement. These survey results correspond closely to the recommendations found at a job search website on basic computer user skills. At this About.com site, information is provided that indicates, "many employers consider Microsoft Office skills to be among the basics."

As seen in Figure 2, when combining the "required" software knowledge with the software knowledge also considered "desirable" for employment, the rankings were the same order for the first two items; however, Microsoft Excel then moves from behind Microsoft Outlook by just over 2% to ahead of Microsoft Outlook by almost 13%. In addition, with the combined "required" and "desired" results, PowerPoint jumps to tie Outlook at 41.67%. Microsoft Access had the only other significant rise when combining "required" with "desirable" at 17.14% from the "required' 2.86%.

There were several software applications that were not considered "useful" or even needed at all by a large number of the companies included in this study. Microsoft FrontPage, Adobe Photoshop, and Corel WordPerfect were not needed by approximately one-half of the companies. Macromedia Flash, Macromedia Dreamweaver, and Instant Messenger/Virtual Team Software were not needed by approximately sixty percent of the companies, while Macromedia Fireworks and Java Programming were not needed by more than seventy percent of respondents (see Figure 3).

Implications and Recommendations for Additional Study

As recently as five years ago, both Microsoft Word and Corel WordPerfect were being taught in the junior-level word processing course at the university in this study. Software trends seemed to indicate that Microsoft Word was the program more often used in businesses in the area, which prompted removal of Corel WordPerfect from instruction. Other courses within the department of the researchers include software such as Microsoft Access, Microsoft PowerPoint, and Macromedia Dreamweaver. The information from this study will provide insight into possible needs for curricula modification to reflect current employer requirements regarding computer application skills.

The current study has prompted areas for further research. Additional investigation should be ongoing in order to maintain the pertinence of the computer applications included in the curricula. Similar studies could be replicated at other institutions to verify the findings and to determine if any regional variances exist.
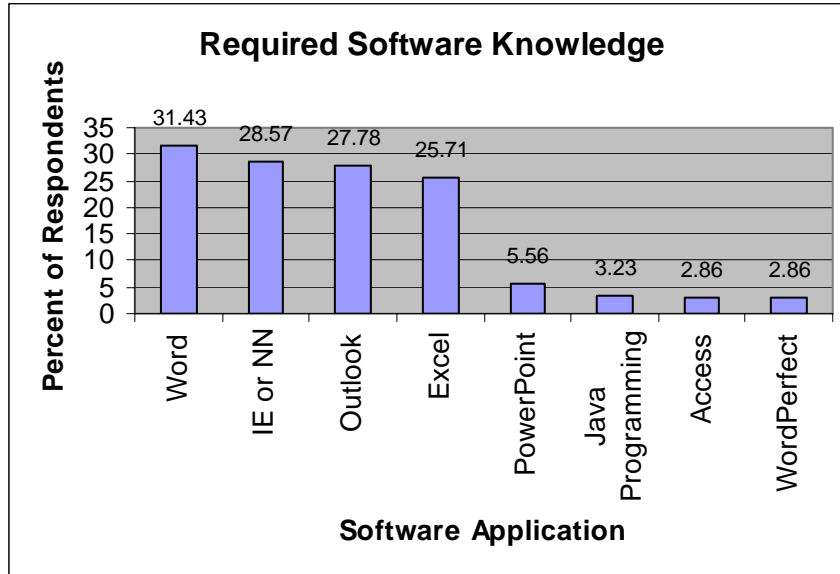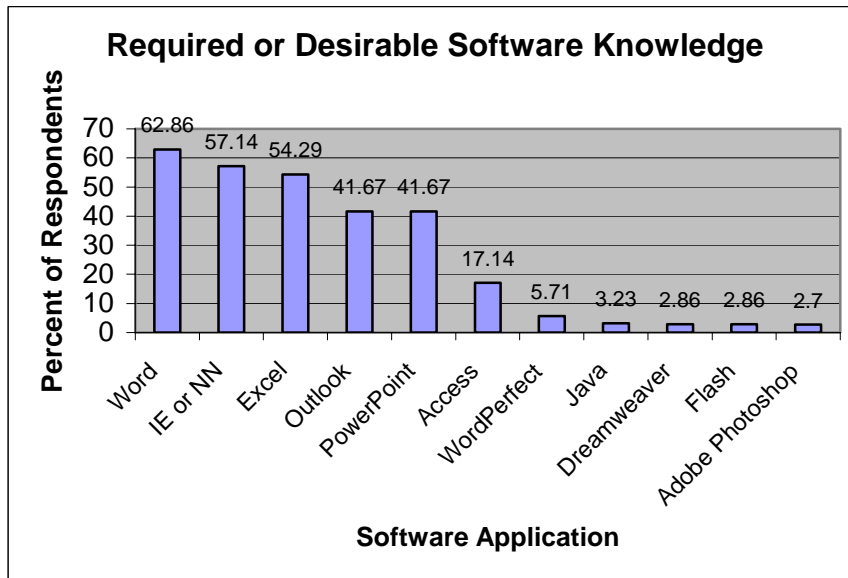
Figure 1: Required Software

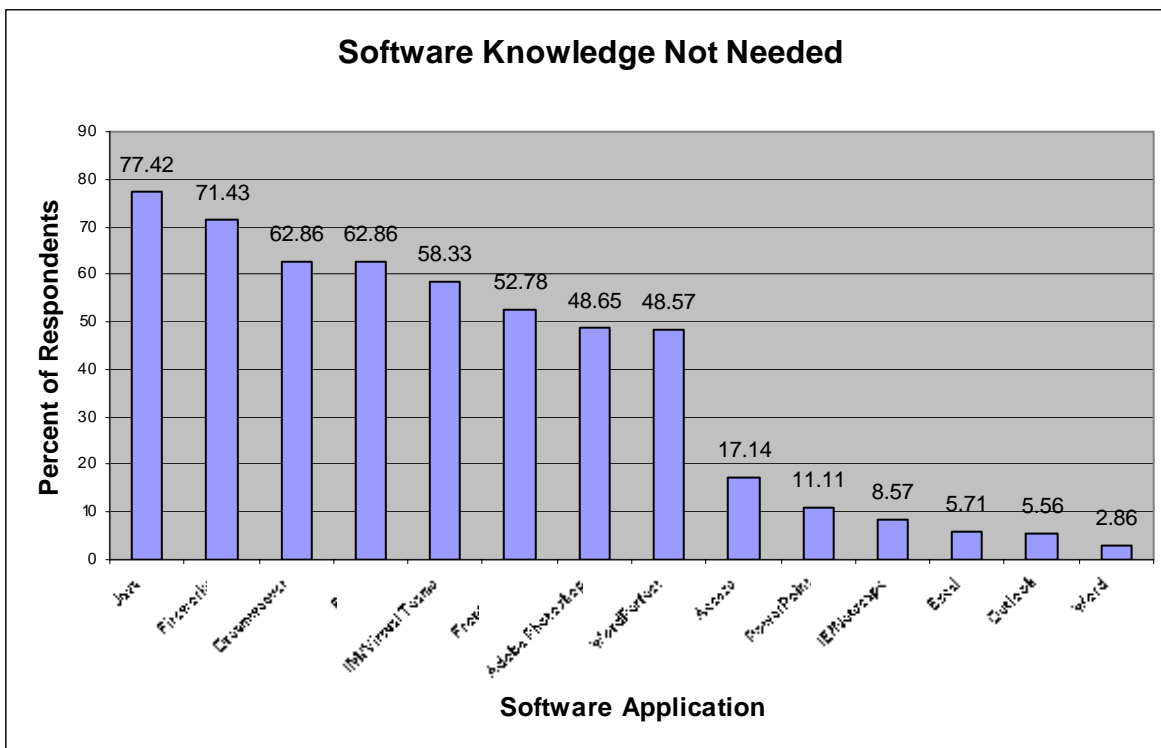Figure 2: Required or Desirable Software Knowledge

Software Knowledge Not Needed

Figure 3: Software Knowledge Not Needed

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