

# What is the Fate of the Computer Literacy Course?

Gerald P. Marquis  
Department of Business Information Systems  
College of Business, Tennessee State University  
Nashville, TN 37203-3401 USA  
gmarquis@tnstate.edu

## ABSTRACT

It is generally agreed that graduates from a college of business curriculum should be proficient in the use three productivity tools: word-processing software, spreadsheet software, and database software. In a prior study the consensus among both faculty and students in all disciplines was that application knowledge of productivity packages was the most important topic to be included in the business school computer literacy course. Two curriculum models are reviewed as to their views on the need to have a full course in the business school curriculum that includes instruction in the productivity tools of word-processing, spreadsheet, and database. The results of two student surveys, separated by two years, taken at a major mid-south university's college of business are presented and discussed. It was found that a majority of students enrolled in the computer literacy course reported having prior experience with word-processing and spreadsheet software packages and more than one half has prior experience with a microcomputer database package. It is also evident that the high schools that prepare our students for college are offering courses in all three of these productivity software systems. This raises two questions that need to be addressed. First, should a computer literacy course covering these three software packages still be a part of a student's for-credit program for graduation? And if not, how does the university ensure that its graduates are competent in these skills that their future employers expect them to have? Finally four alternatives are presented and discussed.

Key words: CIS curriculum, computer literacy, word processing, spreadsheet

## 1. INTRODUCTION

It is generally agreed that graduates from a college of business curriculum should be proficient in the use three productivity tools: word-processing software, spreadsheet software, and database software. At many universities the schools of business teach these skills in a computer literacy course. At the same time a great number of high schools across the country are offering similar courses for their students. Consequently there are many students entering the university with prior experience with these skills. The question for schools and colleges of business is what should be done with their computer literacy courses?

Several options for resolving this question are available. The first option is to offer three one credit hour courses, one in each of the software packages. A second option

could be to offer three non-credit courses, one each in each of the software packages presented through an office of continuing education. Third, the computer literacy course could be relegated to a remedial course. A fourth option would be to require all business students to obtain a certification in the use of these packages prior to their junior year. Ultimately the choice of how to handle the computer literacy course at any particular institution will have to be decided by the resources and infrastructure available at each institution.

## 2. BACKGROUND

An early study was made by Kim and Keith to ascertain the answer to the question "What are the most important computer literacy topics within a school of business?" (Kim, 1994) Both business school faculty and students were included in the survey. The results of their survey

indicated that there was agreement on four topics that should be included a computer literacy course. The four were: hands-on exercises with spreadsheet packages, hands-on exercises with word-processing packages, hands-on exercises with operating systems commands, and hands-on exercises with database management packages. The consensus among both faculty and students in all disciplines was that application knowledge of productivity packages was the most important topic to be included in the business school computer literacy course. This mix of topics is still the mainstay of many computer literacy courses in many schools and colleges of business today.

The "IS'97 Model Curriculum and Guidelines for Undergraduate Degree Programs in Information Systems" published by the Association of Information Technology Professionals in 1997 defines the content of a "Knowledge Work Software Tool Kit" course. (Davis, 1997) This course is to include software tools that knowledge workers would find useful and includes word-processing, spreadsheet, and database elements. They suggest that this computer literacy course should be the prerequisite to the course "Fundamentals of Information Systems" that is a core course in most college of business curriculums. As a prerequisite to a core course, the computer literacy course would be required for all business students. This model clearly proposes that all business school students need to be proficient in these productivity tools.

The "Curriculum Model 2000 of the Information Resource Management Association and the Data Administration Managers Association" offers another set of guidelines for business students. (Cohen, 2002) This model emphasizes "teaching information concepts and theories from the perspective of business problems. (Cohen, 2002) It suggests a first course in Information Resources Management Principles followed by an Information Systems Technology course in which word-processing and spreadsheet methods are included. However, it is suggested that these two skills are to take up less than 15% of the course. The authors of this curriculum model apparently are of the opinion that these skills are not to be taught at the university level. Their assumption must be that students will have acquired these skills prior to embarking on their university education.

These two models take very divergent views on the need to have a full course in the business school curriculum that includes instruction in the productivity tools of word-processing, spreadsheet, and database. The AITP model would make the computer literacy course a prerequisite to the required core fundamentals of information systems course. The IRMA/DAMA model would make their principles course a prerequisite to the course that devotes less than 15% of the class time to instruction in these productivity tools.

### 3. THE SURVEY

Two surveys were administrated, the first in the spring 2000 semester and the second in the fall 2001 semester. The surveys were administrated to students enrolled in the College of Business's computer literacy course most commonly taken in the student's second year at the university. The spring 2000 survey yielded 158 usable survey results from a total of 162 and the fall 2001 survey had 63 valid survey results from a total of 68. The smaller sample size for the 2001 survey was due to the lack of participation by our adjunct faculty teaching the computer literacy course.

The surveys were taken at a major mid-south urban and residential university with a student body of about 8,500 representing at least 45 states and 85 foreign countries. The College of Business has an enrollment of about 1200 students. The computer literacy course is a required course in the set of common core courses taken by all students in the College of Business.

### 4. SURVEY RESULTS

The results of the two surveys are presented below. Separate sections for each skill type are presented in table format followed by a discussion of the results.

#### Word-processing Results:

<b>Word-processing questions</b>	<b>Spring 2000 count</b>	<b>Spring 2000 pct</b>	<b>Fall 2001 count</b>	<b>Fall 2001 pct</b>
Prior WP experience	144	91.1	59	93.7
MS Word	122	77.2	57	90.5
Word Perfect	100	63.3	45	71.4
Other	0	0	5	7.9
High School	103	65.2	50	79.4
OJT	41	25.9	15	23.8

#### Word-processing Discussion:

The percent of students reporting knowledge of or experience with a word-processing software package has increased from 91.1% to 93.7% in the two years between the two surveys for an overall increase of 2.9%. In the same time period those students reporting experience with MS Word increased 17.2% and those with Word Perfect experience increased 12.8%. Also notable is the number of students reporting that they received the word-processing training in high school, a 21.8% increase to almost 80%. Clearly the high schools are becoming more active in offering one of more courses in word-processing for their students and the college bound students are enrolling in these classes. Note also that the percent of students reporting experience via on the job training (OJT) decreased by about 2%.

**Spreadsheet Results:**

Spreadsheet Questions	Spring 2000 count	Spring 2000 pct	Fall 2001 count	Fall 2001 pct
Prior SS experience	86	54.4	52	82.5
MS Excel	74	46.8	49	77.8
Lotus	74	17.7	10	15.9
Other	0	0	1	1.6
High School	56	35.4	33	52.4
OJT	36	22.8	21	33.3

**Spreadsheet Discussion:**

Prior experience with a spreadsheet increased 51.7% to the most recent level of 82.5%. This represents a 1.52 fold increase in the number of students with spreadsheet experience. The percent of students reporting having gained spreadsheet experience in high school increased 48 % to a total of 52.4%. This represents a 1.48 fold increase from spring 2000 to fall 2001. Note that the increase in both the number of students with prior experience and those receiving that training in high school are nearly equal. This clearly indicates that more high schools are adding courses in the use of spreadsheets into their curriculums and correspondingly the students are taking those courses. Those students reporting gaining spreadsheet experience through on the job training increased by 46% thus accounting for some of the overall increase reported in prior spreadsheet experience.

**Database Results:**

Database Questions	Spring 2000 count	Spring 2000 pct	Fall 2001 count	Fall 2001 pct
Prior DB experience	32	20.3	35	55.6
MS Access	24	15.2	33	52.4
Dbase	7	4.4	2	3.2
Other	1	.6	2	3.2
High School	12	7.6	23	36.5
OJT	13	8.2	10	15.9

**Database Discussion:**

An even more significant increase is represented in the reporting of prior experience with database software. The fall 2001 survey indicated 55.6% of the students had prior experience compared to 20.3% two years earlier, a 173.9% increase. That is, in the fall of 2001, 2.74 times more students reported having prior experience with database software than in the spring of 2000. This increase can be largely attributed to the feeder high schools since there was a 380.3% increase in high school trained students. That is, the number of students reporting a high school course in database in the fall of 2001 was 4.8 times that of those reporting in

the spring of 2000. Those reporting on the job training in database software increased by 93.9%, which would account for some of the large increase in students' reported prior experience.

In summary, the vast majority of students enrolled in the computer literacy course have prior experience with word-processing and spreadsheet software packages and more than one half has prior experience with a microcomputer database package. It is also evident that the high schools that prepare our students for college are offering courses in all three of these productivity software systems. This raises some questions that need to be addressed. First, should a computer literacy course covering these three software packages still be a part of a student's for-credit program for graduation? And if not, how does the university ensure that its graduates are competent in these skills that their future employers expect them to have?

A caveat must, however, be noted. Anecdotal comments by instructors indicate that students do not "really" know how to use this software. They report that when assigning projects requiring the use of these various software tools the students do not know how to apply the tools to the assigned work. (Lasater, 2002)

**5. ALTERNATIVES**

One approach is to offer three one credit hour mini-courses, one for each software package. This would require some type of pre-testing to evaluate the competence level of the entering student. These tests could be administered to the entering student at the same time that they take the customary placement tests. The results of these assessment tests would be used to determine which of the courses the student would need to bring their competency level up to an acceptable level.

Another approach would be to have the continuing education/adult education department offer three non-credit continuing education courses. Each course would cover one of the software packages. Again, students would be required to take the course or courses that they were not proficient in as determined by an assessment test given upon entry to the university.

A third alternative would be to reassign the computer literacy course to a non-credit remedial course. This approach is similar to that taken when an entering student does not have sufficient high school credits in algebra or English. This would again require an assessment test to be administered to the entering student. The results of this test would determine if the student had sufficient skills to use the three software packages effectively in their course work. If the student did not demonstrate a sufficient level of expertise they would have to take the remedial computer literacy course.

The fourth alternative would be to have the student show evidence of obtaining a nationally recognized certification in these skills prior to their junior year. An example of this would be the Microsoft Office User Specialist (MOUS) certification as described on their Web Site. (Microsoft, 2002) The Microsoft site asserts that the "MOUS exams provide a valid and reliable measure of technical proficiency" in the various applications. (Microsoft, 2002) The MOUS certification program offers three levels, Master, Expert, and Core. Since the Core and Expert certifications only require the successful completion of one exam in one of the applications neither one would be sufficient to assure the level of knowledge necessary to adequately apply the three applications in subsequent course work. A minimal approach would be to require achieving three Core certifications, one each in Word, Excel, and Access. A more rigorous approach would be to require the student to gain the Master Certification level requiring passing exams in Word, Excel, PowerPoint, Access, and Outlook.

## 6. DISCUSSION

This study only surveyed student's prior experience with each of the three productivity programs. Another question that should be addressed is the level of competence the student has in these software tools. For such a study a consonance of required skills and knowledge would have to be reached among the business faculty. Then a skill test would have to be devised and administered. The results of this test could be studied as well as a follow-up study of whether the students passing this test were able to perform adequately in their other business courses.

## 7. CONCLUSION

Ultimately the choice of how to handle the computer literacy course at any particular institution will have to be decided by the resources and infrastructure available at each institution. All of the first three options would require the testing of all incoming students to determine their knowledge level in the three productivity applications. This would require the acquisition or development of a validated exam to test these skills in order to advise the student of their required course of action. The use of three one-credit hour courses would require approximately the same resources in instruction and computer classrooms with students taking only the individual course covering the material in which they are deficient. If the three non-credit courses were to be administered by a continuing education unit, then assurances would have to be made that this department had the resources to present the courses.

Reallocation of the computer literacy course to a remedial course has its own set of concerns. First, is whether the institution has a unit that routinely delivers

remedial courses? If it does, then does it have the resources to expand to include a computer literacy course, instructors and computer classrooms? And at some institutions another major concern is, how will this additional teaching load be funded?

The last option, requiring students to provide proof of passing multiple certification exams, has a whole new set of concerns. The first consideration is if the testing center on campus is authorized to administer the Microsoft exams. If not, is there a testing center near the campus that performs the testing? And does the student or the institution assume the costs of the testing or is it shared? An alternative would be to make the student responsible for passing the required exams similar to the taking the SAT or ACT exams.

## 8. REFERENCES

- Cohen, Eli (ed.) Curriculum Model 2000 of the Information Resource Management Association and the Data Administration Managers Association, accessed April 12, 2002 from <http://gise.org/IRMA-DAMA-2000.pdf>
- Davis, Gordon B., et al., IS'97 Model Curriculum and Guidelines for Undergraduate Degree Programs in Information Systems, Association of Information Technology Professionals, Park Ridge, IL, 1997
- Kim, Chung S. and Nancy K. Keith, "Computer Literacy Topics: A Comparison of Views within a Business School," *Journal of Information Systems Education*, Vol. 6, No. 2, Summer 1994, pp. 55-59.
- Lasater, K., Private conversation on, May 16, 2002.
- Microsoft, MOUS Certification Requirements, accessed March 17, 2002 from <http://www.microsoft.com/traincert/mcp/requirements.asp>