Computer Applications and Concepts for Business Student Career Success

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INTRODUCTION

The rising popularity of computer applications in the work place requires business faculty to constantly evaluate what knowledge and skills are necessary for students to be successful in their careers [1,2,3,4,5,6,7]. Although knowledge of traditional business concepts is clearly important, it has become also essential for business students to be experienced with computer applications and concepts [4,8,9,10].

Studies investigating the need for knowledge of computer applications and concepts in business curricula have centered on identifying applications and concepts specific to disciplines such as accounting [11,12], marketing [1], production/operations management [5,13], statistics [14], and information systems [4]. Little direct attention has been placed on the computer skills, concepts, and applications that are generally needed by all business graduates.

Because job and career changes are occurring with increasing frequency, it is difficult to predict which jobs will be available for students upon graduation, regardless of their majors. It is also difficult to predict what computer-oriented knowledge is needed for successful long-term career efforts. But, by determining a core set of computer applications and concepts for all business graduates, a level of flexibility can be introduced to strengthen students' capabilities for facing an uncertain future. Toward this end, this paper investigates opinions from practicing managers, university faculty, and undergraduate business students regarding various computer applications and concepts relevant to management training.

OBJECTIVES OF STUDY

The American Association for Collegiate Schools of Business (AACSB) recently implemented new standards that no longer recommend a fixed curriculum nor specify a given set of "correct" faculty credentials. Assessing the quality of a school's processes now refers to determining which methods the school uses to strengthen its curriculum, professionally develop its faculty, improve its methods of instruction, and enhance the scholarly productivity of its faculty [3,15]. Helping to determine what training in which computer applications and concepts is perceived to benefit to a school's curriculum supports the accreditation process.

According to Trauth et al an 'expectation gap' [4, p. 293] exists between what Information Systems professionals desire from Management Information Systems (MIS) majors and what MIS faculty teach. In addition, Cardinali notes curricula and teaching methods vary from school to school so greatly that it is difficult to determine which computer knowledge an undergraduate has [16]. To the extent that differences in opinion can be directly brought to light, the potential for standardization in training can emerge.

When viewed from a total quality management perspective, students become customers of a business school. As customers they have certain expectations regarding their education. Presumably, they expect the completion of their degree to lead to employment or promotion. For business schools to provide a service or value to students/customers in today's technologically-driven world, computer applications and concepts must be integral to the curriculum [17].

Last, the continually changing and expanding use of computer technology constantly shifts the requirements organizations have for employees. Because these changes occur so rapidly, organizational expectations of computer application proficiency may not coincide with those of faculty or students. By determining the extent of perceptual discrepancy between faculty, students, and practitioners concerning relevant computer applications and concepts, better preparation methods can be implemented [2,4,8,18,19,20].

METHODOLOGY

A survey instrument was constructed to obtain information on how relevant popular computer applications and concepts are for preparing successful undergraduate business students. The survey items are based on information obtained from two focus groups

composed of business faculty, college administrators and practicing executives. Three versions of the survey (one for faculty, one for students, and one for business persons) were used to ensure the questions asked matched the respondent's frame of reference. The survey instrument was tested with a small sample from each of the three groups during the Fall of 1993 [21].

Specifically, the respondent was asked to rate how critical (on a scale of one to ten) he/she perceived a variety of computer applications and concepts to be for business school graduates to successfully perform at both the entry-level and five-year stages of their careers. The survey was distributed to 97 students enrolled in senior-level core undergraduate business classes at a large northeastern university. Faculty responses were obtained by placing the questionnaire in the mail boxes of 108 non-MIS business faculty at the same university. Because the MIS faculty at this university constructed the survey, the concepts and skills they deemed important were already being considered. Eighty practicing professional subjects were surveyed from the university's Master of Business Administration Students who had career positions.

Although not a random sample, these subjects provide valuable information to the curriculum development process for the following reasons. First, professionals such as managers, accountants, and financial planners (who have been working for over 5 years and are currently taking graduate classes) offer an excellent cross-reference for comparing the opinions of undergraduates (who have not yet started a career) and business faculty (who believe they are experts in the knowledge domain of business). Second, because the survey items can be generalized to topics and skills relevant to all business schools, noting the degree of consistency in opinion between the three groups surveyed offers a benchmark against which others can compare their own performance. Third, the process used is manageable and straightforward. While other approaches may provide answers to such issues as why the samples rated the topics as they did, this cursory comparison allows for faculty and administrators to develop a base from which to consider a whole array of additional core technological and non-technological curriculum concepts.

RESULTS

The sample includes 85 undergraduate business students (87.6% response rate), 29 business faculty (26.4% response rate) and, 69 practicing professionals (86.3% response rate). Figure 1 shows the break down of computer usage by the groups and Figure 2 shows the fields of students and faculty along with the career areas of business professionals.

Figure 1

Usage	Students	Faculty	Professionals
Low	58	11	3
Medium	13	0	24
High	7	10	31
None	0	1	0

It is important to note from Figure 1 that practicing business personnel use the computer more than the other groups. This indicates that professionals represent an acceptable sample for assessing relevant computer skills and abilities as they are readily using them at work. It is also interesting to note the bimodal nature of computer use by the faculty surveyed. Because all the disciplines in which the faculty claimed expertise (see Figure 2) offer numerous computer applications to support both knowledge acquisition and formal practice, it appears some faculty have yet to embrace the technology as openly as they might. This becomes troubling when one notes that student use is consistently low while most surveyed are majoring in quantitative disciplines such as accounting, finance, and marketing. One could surmise that the faculty who are not regularly using technology are not encouraging their students to do so, even when professional tasks relevant to their knowledge domains require heavy computer use.

Figure 2

Usage	Students	Faculty	Professionals
MKT	16	3	10
PROD	0	0	7
IS	0	0	3
ECON	1	5	1
MGT	12	4	15
FIN	20	3	16
ACC	31	10	8
QA	0	1	1

Perceptions of Computer Applications

Figure 3 shows the rating results of the software applications deemed necessary for entry- level positions. Ratings were averaged across groups to provide a basis for comparison. In general, perceptions did not appear to vary much between the samples with respect to the importance of the various applications for entry-level success. Spreadsheets and word processing are ranked at the top by all three groups while programming was ranked the lowest in importance by all. This agreement indicates that training students in these applications does provide them with the computer skills needed for entry-level success

Figure 3

Usage	Students	Faculty	Professionals
Spreadsheet	8.87	8.81	8.49
Word Processing	8.46	8.71	8.29
Programming	4.53	2.36	2.81
Data Base	6.78	5.92	5.67
Statistics	6.08	6.59	5.07
Production	6.26	4.5	4.72
Expert Systems	5.35	3.62	3.37

Figure 4 shows the ratings these applications received for supporting careers five years into the future.

Figure 4

Usage	Students	Faculty	Professionals
Spreadsheet	8.91	9.14	9.03
Word Processing	8.59	8.03	8.38
Programming	5.11	2.73	3.1
Data Base	7.31	6.93	6.58
Statistics	6.71	6.43	5.68
Production	6.71	4.67	5.29
Expert Systems	5.72	4.5	4.08

Only in one case did a rating not go up in importance from what was deemed necessary at entry level -- faculty lowered their rating of word processing from 8.71 to 8.03. Furthermore, the rank orderings generally stayed the same. Thus, the relative importance of applications appears to be consistent with those for the early part of a person's career.

An implication from this general increase in the importance of all applications over time is that the groups believe computer applications are more important for the future than for the present. Even though the survey allowed for respondents to write-in applications not mentioned, only a few specific examples of the application-types listed were written. No new categories of applications were mentioned for the present or future. While this indicates the authors included the "right" topics, it is disconcerting that respondents simply extrapolated today's application availability for tomorrow's potential. This may explain why most faculty surveyed are not heavy computer users. Perhaps they are "waiting" to perceive it important enough to integrate into their course work. In addition, the general increase for all applications contradicts current management thought which argues the need for human relations skills, not technical proficiency, increases as one moves through their career [22].

It is also important to note that students almost always rated the importance of computer applications higher than did faculty and business professionals. This may be grounds for student dissatisfaction as their computer use is relatively low (see Figure 2). In order to circumvent the potential for student dissatisfaction, faculty need to better address their reasons for including or not including computer application training within their courses. For example, they may argue that students have an over zealous view of the importance of computers since professionals, who use them heavily, do not see these applications with the same degree of importance.

Perceptions of Computer Concepts

Tables 1 and 2 reflect the groups' opinions of the value of basic computer concepts for success in an entry-level position and five years into the future.

Faculty and professionals have almost identical views of what they see as important concepts for beginning and future careers. They differ only in the ordering of their choices for the top three -- hardware/software, networking, and database -- indicating they favor concepts involving the technical considerations of linking organizational data for success.

Students, on the other hand, share the importance of technical considerations for the entry point of one's career but have a different view of the future. The results show they think that telecommunications concepts and knowledge of various types of information system support will become critical for career success. This indicates a more managerial, externally-focus view of the value of computer concepts.

Table 1

Respondent Ranking	Students	Faculty	Professionals
1	Hardware/Software	Hardware/Software	Networking
2	Networking	Database	Hardware/Software
3	Telecommunications	Networking	Database
4	Database	Telecommunications	Telecommunications
5	IS Types	Multimedia	Multimedia
6	Multimedia	Systems Theory	Systems Theory
7	Systems Theory	IS Types	IS Types

Table 2

Respondent Ranking	Students	Faculty	Professionals
1	Telcommunications	Database	Networking
2	IS Types	Networking	Database
3	Networking	Hardware/Software	Hardware/Software
4	Hardware/Software	Telecommunications	Telecommunications
5	Database	Multimedia	Multimedia
6	Multimedia	Systems Theory	Systems Theory
7	Systems Theory	IS Types	IS Types

Given the highly advertised importance of the Internet [23,24], it is interesting to note that faculty and professionals do not appear to see telecommunications as a very critical concept for future success. Follow-up conversations with five of the faculty surveyed provided a possible answer. These faculty are not eager to introduce the Internet in to the classroom because they are not sure of its business-education value. They perceive it as an information-retrieval service similar to that of a library and see no need to waste valuable business core-concept time preparing students to use it. In fact, two of the professors lobbied the systems staff at the university to prevent Internet-access capability in computer classrooms. They had grown tired of having to stop students from 'playing' on the Internet during classes aimed at teaching 'critical' business-skill computer applications. Moreover, they perceived telecommunications in general to be an Information Systems concept unessential to core-business skills training.

DISCUSSION

A number of interesting issues have been raised by this survey. First, it provides grounds for MIS faculty to openly consider the perceived significance of their role in business core-curriculum development through the eyes of other relevant disciplines. Frequently, faculty devoted to a given discipline tend to lose sight of, or overstate, the value of their knowledge domain. It is encouraging that non-MIS faculty see skills and concepts of the MIS domain critical

to business graduate success now and in the future. It is somewhat discouraging to see several skills and concepts which might be critical not receive high ratings. For example, none of the samples saw systems theory concepts as being very critical business career success. However, as globalization and technological complexity become basic to business, greater awareness of the fundamentals of interrelation and interdependence would seem necessary to improve management skills. Regardless, by identifying the perceptions of non-MIS faculty and business professionals, MIS faculty are in a better position to change or adapt to those impressions.

Another potentially helpful finding is the importance given to networking by both faculty and professionals. Typically, a core-MIS course covers networking within the chapter topics of telecommunications, database, and hardware configurations. To date, it has not be widely emphasized as a separate consideration within MIS textbooks. Perhaps a new approach where this topic is included as a separate course in the business-core would be more valuable. Or more emphasis might be placed on networking in the MIS chapters present in most core-discipline introductory courses (i. e. finance, accounting, marketing).

Second, the discrepancies noted between student perceptions and those of faculty and professionals introduce the potential for administrators to develop a means of identifying those skills and concepts important to a business school's stakeholders. One difficulty in assessing and marketing the value of a business education is the indirectness present in the links between the training offered, work place performance, and stakeholder satisfaction [25]. Typically, vague, general questions are asked of stakeholders such as "How satisfied were you with the subject matter covered in class?" or "How satisfied are you with our graduates' job performance?" when deciding curriculum issues. A more useful approach would be to would be to expressly list the skills and concepts being taught and ask students to indicate their knowledge level while professionals express their desirability for those skills and concepts.

Even though the study has offered helpful suggestions for curriculum concerns, it also has shortcomings. First, the present paper only provides information for computer skills and concepts. Other business-relevant skills would need to be identified to support a more comprehensive curriculum development. Second, the focus for workplace success was the corporate environment. It is possible the ratings would be different if the focus had been on a more entrepreneurial track. Third, only one university was considered. While the university is AACSB accredited and operating under standardized guidelines for business education, it is possible that students, faculty, and professionals from other institutions would have different views.

CONCLUSION

This research has shown that there are some discrepancies between professional, faculty and student opinions with respect to which skills and concepts are important for career success. It is hoped that by uncovering these discrepancies, the core-business curricula of all universities will be enhanced as open discussion can now be generated within and between all interested parties. Finally, the method used in this study offers an opportunity for gathering curriculum-relevant information quickly and relatively inexpensively.

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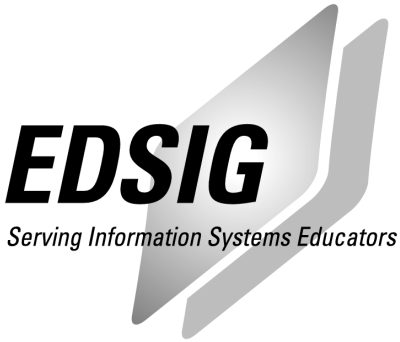

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