

Quests on Building IT-Relevant Accounting Curricula

C. Janie Chang* Nen-Chen Richard Hwang**

Abstract: Rapid developments in information technology have created opportunities and posed challenges to accounting educators. To provide additional insights on how information technologies are shaping accounting education in the e-era, we explore educators' intention on how to address the emerging information technology issues identified by the AICPA in their IT-related course(s). Topics include the Top Ten Technology Issues listed by the AICPA in years 2000 and 2001. Participants all have been involved in teaching IT-related courses at higher education institutions in the United States. Overall, there appears to be a consensus among participants on which of these emerging IT issues should be taught, and to what extent, in their courses. Results also indicated significant differences between educators' perceived importance and intended coverage of these topics. We also find that faculty's perceptions of issues' importance, their own IT-related training, and their consideration of whether accounting graduates need IT knowledge/skills drive faculty decisions on the design and delivery of IT-related topics. Implications of this study and future research directions also are discussed.

Key Words: Accounting Curricula, Information Technology, Emerging Issues, Curriculum Reengineering.

* Associate Professor of Accounting, Department of Accounting and Finance, San Jose State University, San Jose, CA

** Associate Professor of Accounting, School of Accountancy, Chinese University of Hong Kong, Shatin, New Territories, Hong Kong.

1. INTRODUCTION

Information technology (IT) poses critical challenges to academicians and practitioners as it moves forward rapidly. Over the years, many have expressed serious concerns about the relevancy of business education in preparing accounting graduates for the fast-changing, dynamic business world (e.g., AAA 1987, AICPA 1996, Albrecht and Sack 2000). On one hand, the IT explosion has made the contents of traditional accounting courses outdated, thus some have questioned the value of accounting education and doubt about its relevancy to the business world. On the other hand, limited resources for faculty development and upgrading teaching facilities have delayed accounting academicians in leveraging IT in their respective accounting curricula. To revitalize accounting education and build consensus among educators on how to design and deliver meaningful accounting programs in the e-era, this study is meant to initiate a dialogue among academicians about how include relevant, emerging IT issues into accounting curricula.

Given the sophisticated nature and broad scope of IT, there is room for debate on what emerging IT issues are that accounting professionals face. We have chosen to use the emerging IT issues identified by the AICPA Technology Committee for this study. Items included in our survey are those listed as the Top Ten Technology Issues in both years 2000 and 2001. Using the six topics that overlap for those two years, we design a research questionnaire to examine accounting educators' perceptions on the level of importance of these IT issues to accounting graduates and to what extent they would address these issues in their accounting course(s).

In many institutions, an Accounting Information Systems (AIS) course is still the main avenue for accounting majors to receive IT education/training.¹ Thus, we

¹ Some managerial accounting faculty do require students to work on systems/applications such as activity-based costing, value chain analysis, and budgeting. Other faculty also assign web-related cases for students to investigate companies' financial reports. However, most

target for participation in this study those faculty members currently involved in teaching AIS. To provide insights about our inquiries, this study first explores respondents' perceptions on the level of importance of IT topics, then investigates whether certain factors may drive respondents' decisions on which emerging IT topics should be taught in his/her accounting programs.

This study contributes to the accounting education literature in three ways. First, by examining the participants' perceptions on the level of importance and the extent of intended coverage on emerging IT topics, we would gain a better understanding on whether educators hold a view similar to that of accounting practitioners on the IT topics critical to accounting professionals. Second, knowing which topics participants are planning to teach, a set of core competencies can be built to serve as a benchmark in structuring (or re-structuring) accounting curricula and to make them IT-relevant. Finally, since little empirical evidence is available concerning factors that may affect faculty's decisions on whether to incorporate IT components into accounting curricula, the results of this study may yield additional insights upon which IT issues academicians and practitioners can jointly provide to accounting majors/professionals.

The remainder of this paper is organized as follows. The next section briefly reviews the background of this line of research. Then, research instrument, participants and data collection processes are presented in the research design section. After presenting the research findings, the final section summarizes and concludes the study.

2. BACKGROUND

2.1 Re-engineering Accounting Education

Accounting academicians and practitioners have made concerted efforts during the past two decades to re-engineer accounting education. In one such effort,

accounting faculty are not yet conducting such activities in their courses (Goldworthy, 1996).

the American Accounting Association organized several committees to reexamine accounting curricula. These committees included the Committee on the Future Structure, Content, and Scope of Accounting Education (AAA 1986) and the Accounting Education Change Commission (AECC 1990). Concerning information technology, the Committee on Contemporary Approaches to Teaching Accounting Information Systems (AAA 1987) issued a report that described what an AIS course should contain. In 1995, the International Federation of Accountants (IFAC) released an educational guidance on broad IT elements that all accountants are expected to comprehend. To be precise, the IFAC established a framework for organizing IT-oriented education and specified the core competencies. The IT knowledge/skills were organized around four key roles of accounting professionals—user, manager, designer and evaluator—with respect to the information technology in a business society. In conjunction with this guideline, the Education Committee of the IFAC issued a series of discussion papers focusing on how to implement this new guideline.

As the IFAC stated, competence in IT is imperative for all professional accountants, irrespective of their work domains or roles. All accountants must acquire the core IT knowledge and skills related to business systems. To provide proper guidance to professionals, the IFAC issued the *Information Technology in the Accounting Curriculum* in December 1995 to enhance the IT competence of its present and future members. In paragraph 40 of the document, the IFAC identified a broader scope in IT knowledge and skills required for professional accountants. Although the Federation stated that the weights of IT elements should be equivalent to two university-level courses, they also realized the difficulty of creating space for IT courses within existing accounting programs. Thus, the Federation encouraged educators *to integrate IT into various accounting courses throughout the entire program* (emphasis added). Referring to Table 1, we can find the major IT areas suggested by the IFAC including information technology concepts, internal control, development of IT standards and practices, management

of IT adoption, implementation, use, and evaluation of computer-based business systems.

Table 1 Top Five Core IT Knowledge Areas Identified by IFAC (1995)

1	Information technology concepts (general system concepts, management use of information, hardware, system software, application software, data organization and access methods, networks and electronic data transfer, transaction processing in typical business and accounting applications)
2	Internal controls in computer-based business system (control objectives, control environment, risk assessment, control activities, and monitoring of control compliance)
3	Development standards and practices for business systems (role of information in organization design and behavior, system design techniques, system acquisition and development life cycle phases, tasks and practices and maintaining control over system development processes)
4	Management of IT adoption, implementation, and use (strategic consideration of IT development, administrative issues, financial control over IT, operational issues, management of system acquisition, development and implementation, system maintenance and change, management of end-user computing)
5	Evaluation of computer-based business systems (legal, ethical, auditing, and information system control standards, evaluation of objectives, evaluation of methods and techniques, communicating results of evaluation, following up, specific types of evaluations, computer-assisted audit techniques)

In addition to the efforts made by academic and professional organizations, researchers have also provided some empirical evidence on how to make accounting curricula IT-relevant (e.g., Gujarathi and McQuade 1998; Bryant *et al.*, 1999). Recently, Chang and Hwang (2001) reported that staff auditors who recently graduated from colleges had received significantly more IT exposure in their coursework than had the senior auditors who had completed their degrees a few years earlier. This finding suggests that accounting educators have incorporated IT-relevant topics into accounting courses and also have intensified students' exposure to IT in existing accounting programs. Since the list of IT issues used in the Chang and Hwang study was drawn by the AICPA, their empirical results from auditors imply that accounting educators may hold a similar view to that of practitioners and may already have built some selected IT topics into their teaching. In their study, Chang and Hwang also indicated that

accounting faculty might have provided accounting graduates (i.e., auditors) with sufficient coverage on “Disaster recovery” and “Training / technology competency.” However, coverage on issues such as “E-business,” “Information security and controls,” “E-based financial reporting” and “Privacy issue” appear to be somewhat insufficient. In this study, we would like to confirm their findings with empirical results directly from educators.

In sum, it appears that educators and practitioners do share a common sense of urgency to build IT-relevant accounting curricula. However, teaching IT effectively would require a substantial level of financial support from institutions to develop faculty expertise and to provide much upgraded teaching facilities. Without sufficient support, faculty would have a hard time incorporating in their courses the IT topics suggested by researchers and professional organizations. Before such supports duly arrive, we expect faculty to decide, based on their own perceived levels of IT topics’ importance, what IT topics to teach. If this were the case, our respondents probably would give the IT topics higher ratings on importance than are reflected by the ratings they would give on the extent of coverage in courses.

2.2 Other Potential Determinants

There are several factors that may drive faculty’s decisions on whether to integrate IT components into their courses. Taking a holistic view, several factors besides the instructor’s perception of each topic’s importance are likely to influence his/her design and delivery of courses: his/her prior teaching experience, IT-related training, level of concerns on whether IT knowledge/skills are needed for graduates to succeed in professional career, and the number of credit hours available in his/her accounting programs. As IT becomes more and more sophisticated, at the same time, faculty members continue to be constrained by the structure of the existing accounting programs and may have little choice but to make a trade-off between depth and breath in delivering IT. Thus, by combining

all the aforementioned factors into regression models, we may be able to gain additional insights and draw inferences on how accounting educators determine the extent to which they will cover the listed IT topics.

3. RESEARCH DESIGN

3.1 The List of Technology Issues

Each year, the AICPA Technology Committees invites a group of CPAs and Professionals who are recognized as technology leaders to meet and discuss the emerging IT issues. The purpose of this gathering is to discuss, list and rank the technology topics that are most critical to the accounting profession. To facilitate the meeting, participants use group decision support system (GDSS) technology in a laboratory to interact and to vote on the rankings through networked computers. Each participant assigns two values that measure (1) the usefulness of each technology and (2) its maturity, on scales from one to four. According to the values assigned to individual IT areas, the list of Top Ten Technology Issues is derived (Tie 2000).

Given the sophisticated nature and broad scope of IT, it is difficult, if not impossible, to assemble a complete list of IT topics that is relevant to accounting education. In our judgment, the list of topics generated by the AICPA Technology Committee serves as a legitimate benchmark to study the perspectives of building IT-relevant accounting curricula. Because we want the topics to be of continuing importance to the accounting profession, we limited our study to the IT issues that are listed in both years 2000 and 2001. These topics are “E-business,” “Information security and controls,” “Training and technology competency,” “Disaster recovery,” “Electronically-based financial reporting,” and “Privacy issue.”

Table 2 Topics Listed in Years 2000 and 2001 Top Ten Technology Issues²

Technology Issue	Brief explanation	Ranking in year 2001	Ranking in year 2000
Information Security and Controls	The software applications, processes, procedures, and physical hardware in place to ensure information resources are available only to those people authorized to access it.	1	2
E-Business	Current and evolving technological business processes that allow the accessing, updating, and communicating of information in a purely digital format, which can be used more efficiently and effectively, thereby creating a competitive advantage.	2	1
Electronically-based financial reporting	The evolving processes and technologies that will allow financial information to be delivered in a digital format.	3	7
Privacy	As information and processes are being converted to a digital format, this information must be protected from unauthorized users and from unauthorized usage by those with access to the data.	4	10
Training and Technology Competency	The methodology and curriculum by which personnel effectively (and continuously) learn to understand and utilize technology.	5	3
Disaster Recovery	The development, monitoring, and updating of the process by which organizations plan for continuity of their business in the event of a loss of business information resources due to impairments such as theft, virus infestation, weather damage, accidents, or other malicious destruction.	6	4

3.2 Research Instrument

Using the aforementioned six topics, we designed a questionnaire that includes two parts. Part I comprises two questions for each IT topic: (1) the level of importance of the subject area, and (2) the extent that the faculty member plans to cover the topic in his/her AIS courses. Participants are asked to mark their perception of each question on an 11-point scale (1 = “not at all” and “none”, 11 = “very important” and “extensively”). Questions in Part II relate to respondents’

² Source: The American Institute of Certified Public Accountants website (<http://www.toptentechs>).

demographic information that consists of participant's gender, level and discipline of academic degree, primary and secondary teaching areas, and number of years of teaching experience in IT-related areas. In addition, we ask the participants to indicate the level of IT-related training he/she received while pursuing undergraduate and graduate studies and his/her perceptions on what level of IT competency accounting graduates should possess to function in the business world. Further, we ask participants to indicate (1) the number of AIS-related credit hours in his/her accounting program(s), and (2) the top three areas he/she will cover in the IT-related course(s). To obtain reasonable responses to our survey, we limited the questionnaire to four pages. According to the pilot study, the questionnaire is phased properly and can be completed in less than ten minutes.

3.3 Data Collection Processes

Participants were attendees at the Second Annual AIS Educators Conference at Denver, Colorado, in July 2000 or the AIS Research Symposium at Scottsdale, Arizona, in February 2001. A cover letter that explained the nature of the survey and a self-addressed, stamped return envelope were enclosed with each questionnaire. Participants were encouraged to return the completed questionnaire to the authors during the conference, or, if they preferred, they could fill the questionnaire out later and mail it back to the correspondent researcher using the return envelope enclosed. An email was sent one week after the conference, via the list-serve provided by the conference organizers, as a follow up to remind participants of the survey. Authors also asked the participants not to fill out more than one questionnaire.

A total of one hundred and ninety (190) questionnaires were distributed. Ninety-six (96) completed questionnaires were received, which yielded a response rate of 50.53 percent. Since the response rate is higher than a typical survey research and all the completed questionnaires were received within a reasonable

time period,³ we are not concerned about a potential non-response bias.⁴

4. RESULTS

4.1 Demographic Data

Of the 96 respondents, 39 (40.6 percent) are female and 57 (59.4 percent) are male. Among them, 86 (89.6 percent) have a doctoral degree and 10 (10.4 percent) have a master's degree. The majority of respondents had not majored in the systems area while pursuing his/her highest academic degree; only 13 (13.6 percent) of them had received an academic degree in Accounting Information Systems or Management Information Systems (MIS). Regarding teaching areas, 72 (75.0 percent) respondents stated that AIS/MIS is their primary teaching area, and the other 24 (25.0 percent) listed AIS/MIS as a secondary teaching subject. Results indicate that the respondents had an average of more than six years of IT-related exposures while pursuing academic degrees and 7.69 years teaching experience in IT-related areas. These statistics suggest that the participants do have sufficient IT knowledge and teaching experience to provide informative answers to our inquiries.

4.2 Major Topics in AIS Courses

To gain a better understanding of what topics need to be taught, we asked participants to indicate, "What are the top three areas you will cover in your IT-related course(s)?" For this question, we purposely did not provide a list of topics to the participants, so they were free to list any topic(s), according to their own wills, without being limited. Since five respondents did not provide answers to

³ The overall return rate of our study (50.53 percent) is much higher than the usual mail survey response rate of ten to 20 percent (Kanuk and Berenson 1975; Biner and Kidd 1994).

⁴ Whenever responses are obtained from only part of the sample, there is the potential for the respondents to be non-representative of the sample as a whole. Survey studies often assess the severity of this problem by comparing the answers in early versus late responses. We did not conduct such a comparison because all of the responses were received within a four-week

this question, our analyses were based on a total of 91 responses.

**Table 3 Top Three IT Areas to be Taught in Future AIS Courses
(For a total of 91 respondents)**

Topics	Number of respondents	Percentage (%)
Information security and internal controls	68	74.72
Database management and related issues	39	42.86
Business processes and documentation	31	34.07
Information system design and implementation	26	28.57
E-business	18	19.78

Referring to Table 3, we find that the topic of information security and internal controls has drawn a great deal of attention among all respondents (74.72 percent). Since internal controls have long been covered in AIS courses and information security issues have captured many headlines recently, it is not surprising that faculty would choose to emphasize information security and controls in their courses. Notably, respondents are also interested in teaching subjects such as “Database management and related issues,” “Business processes and documentation,” “Information systems design and implementation,” and “E-business.”

Further examining this list of topics, several interesting observations can be made. First, we find that participating faculty have gradually blended IT issues with traditional accounting topics, such as information security with internal controls or database management with business transactions. Second, participants’ interests appear to converge more on information systems design, business processes and documentation. This result symbolizes that integration of IT into various aspects of accounting curricula may have taken place gradually. Finally,

comparing the topics listed in Table 3 (topics to be taught) to those in Table 1 (topics identified by the IFAC), it appears that participants attempt to incorporate fundamental information system topics (i.e., internal controls, information system design and implementation, and business processes and documentation), as well as current IT issues (i.e., database management, information security, and E-business), into IT-related accounting courses. This result is encouraging, because it reflects that faculty may already be addressing concerns expressed by the IFAC and other professional organizations on building IT-relevant accounting curricula.

4.3 Ratings by the Topical Areas

In Table 4, we present the participants' ratings of the topics on the AICPA list by levels of importance (Panel A) and the extent of coverage (Panel B). Respondents were asked to mark on an eleven-point scale ranged from 1 to 11. Referring to Panel A of Table 4, the ratings of all six topics are above the mid-point 6.0. Among the specific topics, "Information security and controls" received the highest mean rating on perceived level of importance (mean, 9.776; standard deviation, 1.967). "E-business" is the first runner up (mean, 8.698; standard deviation, 2.022); and "Training and technology competency" follows (mean, 8.026; standard deviation, 1.711). When participants were asked to rate the extent of intended coverage of these topics (Panel B), three topics were rated lower than a mid-point. However, the top four topics in course coverage are consistent with the top technology areas as identified by the respondents' perceived levels of importance.

Table 4 Ranking on Top 10 Technology Issues

Panel A Educators' Perceived Levels of Importance

Technology issues	AICPA Ranking (2000)	AICPA Ranking (2001)	Accounting Educator's Raw Ranking	Mean (SD) rating of Importance	t-value	p-value	Ranking in Groups
Information security and controls	2	1	1	9.776 (1.967)	4.504	0.0001	1
E-business	1	2	2	8.698 (2.022)	2.785	0.006	2
Training and technology competency	3	5	3	8.026 (1.711)	1.494	0.139	3
Disaster recovery	4	6	4	7.667 (2.234)	1.870	0.065	3
Electronically-based financial reporting	7	3	5	7.218 (2.437)	1.389	0.168	4
Privacy	10	4	6	6.802 (2.471)			4

Panel B Educators' Intended Coverage

Technology issues	AICPA Ranking (2000)	AICPA Ranking (2001)	Accounting Educator's Raw Ranking	Mean (SD) rating of Intended Coverage	t-value	p-value	Ranking in Groups
Information security and controls	2	1	1	8.578 (1.853)	5.175	0.0001	1
Training and technology competency	3	5	2	7.188 (2.180)	1.609	0.111	2
E-business	1	2	3	6.719 (2.286)	2.745	0.007	2
Disaster recovery	4	6	4	5.917 (2.450)	4.883	0.0001	3
Privacy	10	4	5	4.740 (2.549)	0.222	0.825	4
Electronically-based financial reporting	7	3	6	4.713 (2.585)			4

To determine whether there are significant differences among the educators' rankings on the perceived level of importance on the six topics investigated in our study, we conduct paired t-tests to all the topics (Panel A of Table 4). A comparison between "Information security and controls" and "E-business" yield a

significant difference ($t = 4.504, p < 0.0001$). Given this result, “Information security and controls” stands out as the most important IT topic (Group 1). Follow the same statistical procedures, “E-business,” is identified as Group 2. “Training and technology competency” and “Disaster recovery” together are classified as Group 3. Group 4 included “Electronically-based financial reporting,” and “Privacy issue.” Similarly (using paired t-tests), we also find four groups according to ratings of the intended coverage (Panel B of Table 4).

One observation is worth noting. While “Electronically-based financial reporting (XBRL)” gained in rank on the AICPA list from year 2000 to year 2001 (from number 7 to number 3), the rating it received from respondents for both perceived level of importance and intended coverage appear to be low (number 5 and number 6, respectively). Since accounting graduates may not receive sufficient exposure to this topic while in college, it would be interesting to find out what practitioners would like to do to address this discrepancy. Since XBRL was first released in July 2000, many accounting faculty may not have had adequate training or preparations to teach this subject. Given this fact, practitioners may have to adjust their training programs to bridge this educational shortfall.

Additionally, we postulate that participants’ ratings on the level of importance would be higher than their ratings of the extent of intended coverage. To test this inquiry, we conduct paired t-tests between these two questions of each IT topic. The results confirm our conjecture. All t-statistics are significant at a one-percent level (see Table 5). Further, we find that the respondents’ ratings on the perceived level of importance and extent of course coverage are highly correlated.⁵

Table 5 Comparison of Educators’ Perceived Level of Importance and Intended Coverage

⁵ The correlation between the perceived level of importance and the intended coverage of each topic is significant at 1% level.

Technology issues	Mean (SD) rating of Importance	Mean (SD) rating of Coverage	t-value	p-value
Information security and controls	9.776 (1.967)	8.578 (1.853)	6.343	0.001
E-business	8.698 (2.022)	6.719 (2.286)	11.378	0.001
Training and technology competency	8.026 (1.711)	7.188 (2.180)	5.402	0.001
Disaster recovery	7.667 (2.234)	5.917 (2.450)	9.585	0.001
Electronically-based financial reporting	7.218 (2.437)	4.713 (2.585)	9.818	0.001
Privacy	6.802 (2.471)	4.740 (2.549)	9.207	0.001

4.4 Regression Analysis

To build a relevant accounting curriculum, it is imperative to find out what factors may affect faculty's decisions on delivering IT topics in accounting courses. To determine the effect of our six factors on the extent of coverage on IT Issues examined in this study, we conduct six regression analyses, one for each IT topic. The dependent variable of each regression model is the rating on the extent of coverage of the IT examined, namely "E-business," "Information security and controls," "Training and technology competency," "Disaster recovery," "Electronically-based financial reporting," and "Privacy issue." Independent variables include respondents' rating of perceived level of importance, total IT-related credit hours in his/her accounting program, years of the respondent's IT-related teaching experience, faculty IT-related training and his/her rating on the level of IT skills necessary for accounting graduates. To avoid noises from outliers, we exclude those respondents who did not provide answers to any of the five questions mentioned above. We further exclude those participants who indicated that there are more than nine or less than three IT-related credit hours in their accounting programs.⁶ To assure the participants had a reasonable level of

⁶ Since the IFAC suggested that accounting programs should have two IT-related courses and we assume most universities have at least one AIS course for fundamentals, those programs that had more than nine or less than three credit hours were determined to be outliers.

knowledge on IT-related course design and delivery, those without prior teaching experience in information technology are also excluded from analysis. This yields a total of 79 remaining subjects in our sample.

Table 6 reports the results of our regression models. All six models are significant at 1% level and adjusted R Squares fall between 0.298 (Information Security and Controls issue) and 0.499 (E-Business issue). As expected, the perceived level of importance of all six topics is one of the major factors respondents use to decide how extensively an IT topic should be taught ($t = 4.450, 5.909, 7.892, 7.601, 4.399, 5.930.$) Moreover, faculty's own IT-related training appears to be a major determinant to them in deciding whether/how much depth to cover on "E-business," "Disaster recovery," and "Privacy issue." This observation is not surprising, since these topics are well publicized and have received a great deal of attention among accounting professionals over the past few years. In addition, we found that faculty also emphasized coverage on two emerging IT issues: "Information security and controls," and "Electronically -based financial reporting" because these two topics are perceived to be critical skills to assure success of accounting graduates. On the other hand, the number of IT-related credit hours they have in accounting programs and their years of IT-related teaching experience do not appear to filter into educators' decisions as strongly as we had initially anticipated. Since our study is exploratory, more research on this issue is necessary before conclusions can be drawn.

Table 6 Statistics of Regressions

Regression	Information security and controls			E-business			Training and technology competency		
	β	t-value	p-value	β	t-value	p-value	β	t-value	p-value
Constant		1.118	.239		1.224	.225		.285	.777
Perceived level of importance	.438	4.450	.001	.575	5.909	.001	.701	7.892	.001
Years of AIS teaching experience	.016	.160	.873	.021	.256	.799	.020	.232	.817
# of IT hours	.035	.354	.724	.004	.043	.996	.074	.852	.397
Faculty IT training	.006	.062	.951	.175	2.012	.048	.028	.314	.755
Graduates level of IT skills needed	.319	3.180	.002	.146	1.574	.120	.013	.151	.880
Model	d. f.	F-value	p-value	d. f.	F-value	p-value	d. f.	F-value	p-value
Regression	5	7.621	.001	5	16.568	.001	5	14.012	.001
Residual	73			73			73		
Total	78			78			78		
Adjusted R ²		.298			.499			.455	

Regression	Disaster recovery			Electronically-based financial reporting			Privacy		
	β	t-value	p-value	β	t-value	p-value	β	t-value	p-value
Constant		1.072	.287		1.736	.087		1.551	.125
Perceived level of importance	.647	7.601	.001	.453	4.399	.001	.545	5.930	.001
Years of AIS teaching experience	.012	.148	.883	.035	.359	.720	.113	1.291	.201
# of IT hours	.032	.370	.713	.008	.085	.933	.006	.062	.951
Faculty IT training	.209	2.388	.020	.034	.328	.744	.265	2.898	.005
Graduates level of IT skills needed	.059	.671	.054	.255	2.465	.016	.107	1.167	.247
Model	d. f.	F-value	p-value	d. f.	F-value	p-value	d. f.	F-value	p-value
Regression	5	14.944	.001	5	7.645	.001	5	13.103	.001
Residual	73			73			73		
Total	78			78			78		
Adjusted R ²		.472			.301			.437	

5. SUMMARY AND CONCLUSIONS

The challenges posed by information technology innovations have profound impacts on accounting education. As Warren Allen, the Chair of the Education Committee, International Federation of Accountants, stated in his article (Allen 2000), “The world we inhabit is experiencing great changes as we enter a new millennium.” In addition, Albrecht and Sack (2000) stated, “Our [Accounting] curricula are too narrow and often outdated or irrelevant,” and “Our [Accounting] students are not exposed enough to the impacts of technology on business.” Thus, one of our missions as accounting educators is to find avenues to address the IT issues that are critical to accounting subjects, so that graduates – future professionals – can be successful in the e-era. To be successful, it is imperative for academicians to understand what needs to be focused on, so IT-relevant accounting curricula can be built as we enter a new millennium.

The overall results of this study suggest that respondents were in agreement with practitioners on the level of importance regarding the IT topics identified by the AICPA. Consistent with previous suggestions made by scholars and various committees/organizations, participants indicated that “Information security and internal control” is the most important topic to be taught in the IT-related courses, followed by “Database management and related issues,” “Business processes and documentation,” “Information systems design and implementation,” and “E-business.”

The study further explores potential factors that may affect accounting faculty in deciding the course coverage of IT topics. The results indicate that three factors could be important to accounting educators in determining the extent of coverage in the IT topics examined in the study: the perceived level of importance of the IT topics, faculty IT-related training, and the individual educator’s perception on whether IT skills are needed by accounting graduates.

Based on the results of this study, several issues deserve more attention in the future research. First, it could be worthwhile to analyze IT-related course contents

and compare them to the calls and initiatives made by the AAA, AICPA, and IFAC, particularly the recent study done by Albrecht and Sack (2000). Such an examination could shed light on whether educators have addressed the concerns raised by academic and professional organizations about reengineering accounting education. Second, given the difficulties and hurdles faced by educators in their attempts to integrate IT components into accounting courses, research in finding how to resolve this issue would be desirable. Third, curriculum innovations require faculty participation, university administration with vision and leadership, and support from practitioners. Research on the roles of these interested parties in revamping accounting curricula and how they may drive the success in the process could be interesting. Finally, it has been argued that the lack of textbooks, cases and other teaching materials may slow down the progress of accounting curricula innovations. Thus, could the recent collaborating efforts made by practitioners and academicians, such as the KPMG / University of Illinois Case Development and Research Program in developing IT case materials, expedite curriculum innovations?

As educators attempt to find solutions that will help the accounting profession last and prosper, a solid partnership between academicians and practitioners still holds the key in addressing the new educational challenges evoked by accelerating IT developments. Potentially fruitful activities could be practitioners inviting faculty to participate in their training programs and establishing channels for educators to communicate with practitioners and for practitioners to support educators in conducting IT-related research.

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