Information Technology Knowledge and Skills Accounting Graduates Need

Seedwell Tanaka

Muyako Sithole

School of Accounting
Economics and Finance
Faculty of Business
University of Wollongong,
Northfields Avenue
Wollongong NSW 2522
Australia

Abstract

Technological changes and their associated impacts on businesses have necessitated a discussion on the contents of the undergraduate accounting degree curriculums. As a result of these changes various studies have suggested a wide range of changes to align the curriculums with the needs of the employers. This research investigates accounting graduates IT skills and knowledge relevant to their roles in providing competent and professional services. Data was obtained from employers on 10 IT skills and knowledge areas applicable to accounting graduates. Results of the survey research suggest that students are better trained in word-processing and knowledge of communications software skills, yet employers expect entry level accounting graduates to possess accounting packages knowledge and spreadsheet competencies. The results provide useful information for academics and administrators that are making changes to their curricula.

Keywords: Accounting, employer expectations, graduate skills, information technological skills, accounting education

1. Introduction

Information Technology skills represent a significant element within the range of skills that are increasingly demanded by employers and highlighted within the overall higher education discussion. In accounting education, the Information Technology (IT) knowledge and skills possessed by accounting graduates entering the profession has been of concern by employers for a number of years (Cory & Pruske, 2012; Stoner, 2009). The rapidly changing business environment requires accountants to update their IT knowledge and skills (Tam, 2013). Accountants would need to provide competent and professional services to the organisations they serve and accounting education should meet the set of skill demands both at recruitment and in their advanced accounting careers (De Villiers, 2010; Kavanagh & Drennan, 2008). An understanding of the specific skills demanded by employers is therefore essential. The examination of abilities and skills that employers need in order to integrate them in the accounting curriculum is essential (Hodges & Burchell, 2003). Generally accountants have to grasp the fundamental principles of information systems (Chang & Hwang, 2003). What is not clear is the essential skills set required by employers of accounting graduates. The literature in accounting education has produced a varied set of skills (e.g., Awayiga, Onumah & Tsamenyi, 2010; Abayadeera & Watty, 2014; Burnett, 2003).

Technological advances now mean that businesses have become empowered with regards to their accounting requirements. Howieson (2003) suggests that the implications of technological changes are that future accountants would be transformed to knowledge employees. Even though a command of technology will be essential for accountants, the most important skills will be problem solving, analysis and communication. There is also considerable debate on whether the technological skills are being reflected in accounting education. Albrecht and Sack (2000) argued that the instruction of accounting has not changed substantially to respond to the requirements of employers.

For a long time employers have expressed concern that the accounting programs are not keeping pace with the accounting profession requirements (AECC 1990; Nelson 1991; Novin, Fetyko & Tucker, 1997; Albrecht & Sack, 2000). The remainder of the paper will be structured as follows. It will review the relevant literature, then discuss the research methodology followed by presentation and discussion of the data collected. The limitations and conclusions are presented in the final section.

2. Literature Review

Review of literature demonstrates the high level of importance academics have assigned to the acquisition of relevant skills and student success in the undergraduate accounting program. (Abayadeera & Watty, 2014; Albrecht & Sack, 2000; Bunney, Sharplin, & Howitt, 2015; Borges, Santos, & Leal, 2014; Fogarty, 2010).Over the past decades researchers have sought to understand the linkage between accounting education and graduate skills. Albrecht and Sack (2000) stated that the way accounting is structured and taught is outdated and does not meet the employer expectations. They suggested a major review of curriculums and the way accounting is taught. Burnett (2003) confirmed Albrecht and Sack's (2000) findings when he administered a similar version of the Albrecht and Sack's (2000) study questionnaire. The general findings from Burnett's (2003) two surveys were similar to those reported by Albrecht and Sack (2000). Numerous studies have also discussed graduate employability skills. Within this discussion, terms such as 'generic skills', 'core skills', 'personal competencies' and 'personal skills' have been used to refer to skills not related to a specific field of study (Tam, 2013). These skills are generic in nature and the suggestion that generic skills should be given prevalence over specific technical skills is not widely agreed (Nicolescu & Paun, 2009). Information Technology skills are generic skills that are increasingly becoming important in undergraduate accounting education (Stoner, 2009).

2.1 Accounting Students' IT knowledge and skills

Stoner (2009) reported on a set of IT skills that were most relevant to accounting students as use of spreadsheet and word processing application software, generic PC use (Windows), utilisation of e-mail for communication and the WWW for information retrieval, and, to a limited extent, the use of statistical and database management applications. There are a host of other IT-related skills such as data communications, presentation software skills, networking, security and control, systems analysis and design, and e-business applications that accountants are expected to know (IFAC, 2003; Stoner, 2009).

Wessels (2005) compiled a list of 34 critical IT skills required by accountants based on a literature review of major publications of the professional accounting bodies of Australia, Canada, England and South Africa and information from various studies (Coenenberg, Haller, & Marten 1999; Boyse, 2004; Greenstein & McKee, 2004; Hostrom & Hunton, 1998; Theuri & Gunn, 1998). Burnett (2003) identified ten top technology skills for accounting graduates as: 1) spreadsheet software, 2) Windows, 3) word processing software, 4) World Wide Web, 5) information systems planning and strategy, 6) database software, 7) communications software (e.g. Outlook), 8) project management, 9) presentation software and 10) technology security and control.

Chandra, Cheh, and Il-Woon (2006) suggest that substantive evidence exist relating to the disparity of IT skills supplied by higher education institutions and the IT skills demanded by employers. The scope of IT content in accounting was not at the level expected by employers. De Lange, Jackling and Gut (2006) found that despite the use of computer software in accounting courses, students still perceived they were not well prepared for the workplace. Boritz (1999) raised concerns that most higher education institutions are adding IT subjects while sacrificing some important aspects of the accounting degree program. Mohamed and Lashine (2003) contend that an accountant must possess knowledge of a spreadsheet package, a word processing package, an accounting package and a database package. Globally, employers face different environments across countries and will therefore vary their thinking of the importance of IT skills depending on their circumstances.

3. Research Methods

3.1 Purpose

The aim of this research was to establish IT skills employers of accounting graduates expect and the IT skills the accounting graduates' possess. The IT skills set was obtained from a review of the literature (Albrecht & Sack 2000; Awayigaet al., 2010; Jones, 2011; Cory & Pruske, 2012; Stoner, 2009; Lin et al 2005).

3.2 Context and Procedure

To identify IT skills accounting graduates need data was collected using survey research. Thirty-five accounting employers from a wide range of industry sectors: manufacturing, service, public sector and non-governmental organisations (NGOs) in Swaziland provided the data. The organisations were mainly private corporations and professional service firms (see Table 1). Contact was made with employers in Swaziland who employ accounting students on internships during May to August. The University of Swaziland, houses the department of accounting with more than 100 students majoring in accounting eligible for internship each year. Students are required to be attached to an organisation for at least a month and be assessed by the university on whether they have attained relevant skills and the acquisition of practical knowledge. Sixty representatives from organizations recruiting interns at the university constituted the population frame. Most of the firms are located in Mbabane and Manzini in Swaziland.

A manager within the accounting department or their nominated representative in the organisation responded to questions investigating the IT skills sought and possessed by accounting graduates. Personal contact was made during student assessment visits. A total of 18 firms were removed after this first communication as they were not taking accounting students on placement at that time. This reduced the participating organisations to 42. The organisations provided their responses during the on-site visits made by the researcher while assessing students. Awayiga et al. (2010) used the same strategy to improve the response rate. Thirty-five employers representing 83 percent of the sample were fully completed and collected. The survey presented the list of skills (ten technological related skills) and requested respondents to state whether they agree with the necessity for each skill. They were also required to rate whether accounting graduates joining the accounting profession possess the required skill. The rating of skills was on a five-point Likert scale. On the scale, 1 represented not important while 5 represented extremely important. The skills list was randomly organised and no categorisation existed. The list of skills was first trialled with one organisation. This organisation was not included in the main study. The trial was aimed at refining the research instrument and a few changes were made to refine the wording on the list of skills. There was no attempt to link any organisation involved in the study with the responses. The responses from the questionnaire were analysed using SPSS. Results of the study are presented next.

4. Results and Discussion

The participants were asked to rank the IT graduate skills importance using a five-point Likert scale with 1 representing not important and 5 extremely important. The rating was similar to the Albrecht and Sack (2000) instrument which required practitioners and faculty staff to rate the skills on a scale from one to five. The industry of the organisation's representatives and their work experience is shown in Table 1. Table 2 shows the results of the technological skills needed and possessed by accounting graduates. The respondent firms said that the five most important technological skills, in order of importance are; knowledge of accounting packages (mean, 4.829), spreadsheet packages (mean, 4.514), word processing packages (mean, 4.029), communications software (mean, 3.543), electronic commerce (mean, 3.429). Respondent firms also felt that the five most important technological skills possessed by entry level graduates were word processing packages (mean, 4.286), communications software (mean, 3.657), World Wide Web (mean, 3.457), windows (mean, 3.400), and electronic commerce (mean, 3.371). The ratings reveal that accounting package, spreadsheet package, word-processing package, and knowledge of communication software (for example outlook) are the five highly rated Information Technology skills needed by employers. On the other hand employers noted that accounting graduates possess word-processing skills, communication software (for example outlook) skills and World Wide Web skills. The analysis shows that word-processing and knowledge of Communication software are both needed and possessed by accounting graduates. Clearly the respondents indicated that accounting graduates lacked knowledge of accounting packages. These results indicate that the faculty has managed to develop the word processing, communications software, electronic commerce skills. However, the knowledge of accounting packages and spreadsheet packages need to be developed. The t-tests results investigating whether there were any differences between the most important skills needed and most important skill possessed showed that there was no statistical difference with regard to the professional accounting skills ($t = 0.659$ and $p = 0.5175$) and technological skills ($t = 1.642$ and $p = 0.135$). The significance level was set at $P < 0.05$ (Table 2). The findings show that employers in general continue to perceive no major differences, and a greater appreciation of the qualities of graduates from the university with regard to professional accounting skills and technological skills. This finding is consistent with other prior studies (Jackling & De Lange, 2009; Tempone et al., 2012).

There has not been a major change in the requirement for different skills from new accounting graduates. However, there exist gaps in the specific skills that need to be developed more. With regards to technology, the participants revealed that accounting graduates are equally prepared on both the most important skill needed and the most important skill possessed dimensions. This finding signals the fact that students are generally prepared technologically. The substantial changes that have been taking place in the accounting curricula with respect to technology has enhanced students' computer skills.

5. Limitations

This survey concentrated on employers who hire accounting graduates from one major university in Swaziland. There are a significant number of employers who hire graduates from other higher education institutions but were not included in this survey. It is unlikely that their views would be significantly different but this may not be the case. Another limitation is the skills list presented. The skills were drawn from a wide range of sources (Albrecht & Sack, 2000; Awayiga et al. 2010; Jones, 2011; Lin et al., 2005) and there is a possibility that other essential aspects were omitted.

6. Conclusion

This study investigated the IT skills employer's need and their level of satisfaction with new accounting graduates using survey research. The findings of this survey are likely to be broadly reflective of employers in other locations. Results indicate that employers were satisfied with the students training in word-processing, knowledge of communications software skills, although they were not satisfied with students' knowledge of accounting packages and spreadsheet. The conclusions from this survey provide empirical and relevant input for content review of the accounting programs in order to improve the essential skills and knowledge for accountants. Graduates entering the workforce should be trained more in accounting and spreadsheet packages. The way to address the IT skills deficiencies would require accounting instructors to look beyond the basic computer skills of word, excel, and Access. They need to incorporate advanced excel skills, the teaching of widely used accounting packages. Accounting students need to learn about telecommunications software, intranets and client/server management.

We also find no major difference between the IT skills needed and the IT skills possessed by accounting graduates. The graduating accountants are not significantly different from what employers expect of an accounting graduate. There has been disapproval over the years, of how accounting students are being taught. This finding suggests positive results from curriculum modifications over the years. The IT skills gap across the technological areas still needs to be addressed. The results of this survey also imply that academics have to put considerable attention to the development of skills in order to continue reducing the gap between the skills needed and skills possessed. However, whether the accounting graduate's skills needed by employers can be developed comprehensively by academics alone is a question for further study.

References

Abayadeera, N. & Watty, K. (2014). The expectation-performance gap in generic skills in accounting graduates. Asian Review of Accounting, 22(1), 56-72.

Accounting Education Change Commission (AECC). (1990). Objectives of education for accountants: Position statement number 1. Issues in Accounting Education, 5(2), 307-312.

Albrecht, W. S., &Sack, R. J. (2000). Accounting education: Charting the course through a perilous future. Accounting Education Series Vol. 16. Sarasota FL: American Accounting Association.

Awayiga, J.Y., Onumah, J.M., & M. Tsamenyi. (2010). Knowledge and skills development of accounting graduates: The perceptions of graduates and employers in Ghana. Accounting Education: An International Journal, 19 (1-2), 139-158.

Boyse, G. (2004). Critical accounting education: Teaching and learning outside the circle. Critical perspectives on Accounting, 15, 565-568.

Borges, L. F. M., Santos, C. K. S., & Leal, E. A. (2014). Quality in educational service: expectations versus performance in the accounting undergraduate course. European Scientific Journal, 10(1), 100-114.

Boritz, J. E. (1999). The accounting curriculum and IT. Working Paper. School of Accountancy University of Waterloo Waterloo Ontariol; Canada, M6C 1T1.

Bunney, D., Sharplin, E., & Howitt, C. (2015). Generic skills for graduate accountants: the bigger picture, a social and economic imperative in the new knowledge economy. Higher Education Research & Development, 34(2), 256-269.

Burnett, S. (2003). The future of accounting education: a regional perspective. Journal of Education for Business 78, 129–134.

Chandra, A., Cheh, J.J. & Il-Woon J.M.K. (2006). Do we teach enough it skills in management accounting courses? Management Accounting Quarterly 8(1), 49-54.

Chang, C. J., & Hwang 1, N. C. R. (2003). Accounting education, firm training and information technology: a research note. Accounting Education, 12(4), 441-450.

Coenenberg, A. G., Haller, A., & Marten, K. (1999). Accounting education for professionals in Germany - Current state and new challenges. Journal of Accounting Education, 17, 367-390.

Cory, S.N., & Pruske, K. A. (2012). A factor analysis of the skills necessary in accounting graduates. Journal of Business and Accounting 5(1),121-128.

De Lange, P., Jackling, B., & Gut, A. M. (2006). Accounting graduates' perceptions of skills emphasis in undergraduate courses: an investigation from two Victorian universities. Accounting & Finance, 46(3), 365-386.

De Villiers, R. (2010). The incorporation of soft skills into accounting curricula: preparing accounting graduates for their unpredictable futures. Meditari Accountancy Research, 18(2), 1-22.

Fogarty, T. J. (2010). Revitalizing accounting education: A highly applied liberal arts approach. Accounting Education: An International Journal, 19 (4), 403–419.

Greenstein, M., & McKee, T. E. (2004). Assurance practitioners' and educators' self perceived IT knowledge level: An empirical assessment. International Journal of Accounting Information Systems, 5, 213-243.

Hodges, D., & Burchell, N. (2003). Business graduate competencies: Employers' views on importance and performance. Asia-Pacific Journal of Cooperative Education, 4(2), 16-22.

Hostrom, G. L., & Hunton, J. E. (1998). New forms of assurance services for new forms of information: The global challenge for accounting educators. International Journal of Accounting, 33(3), 347-358.

Howieson, B. (2003). Accounting practice in the new millennium: Is accounting education ready to meet the challenge? British Accounting Review, 35(2), 60-104.

IFAC (2003). International Education Guideline 11: Information Technology for Professional Accountants (New York: IFAC Education Committee, International Federation of Accountants).

Jackling, B.,& De Lange, P.(2009). Do accounting graduates' skills meet the expectations of employers? A matter of convergence or divergence. Accounting Education: An International Journal, 18 (4/5), 369-85.

Jones, C. G. (2011). Written and computer-mediated accounting communication skills: Employer perspective. Business Communication Quarterly, 74, 247-271.

Kavanagh, M. H., & Drennan, L. (2008). What skills and attributes does an accounting graduate need? Evidence from student perceptions and employer expectations. Accounting & Finance, 48(2), 279-300.

Lin, Z. J. (2008). A factor analysis on knowledge and skill components of accounting education: Chinese case. Advances in Accounting 24(1), 110–118.

Lin, Z. J., Xiaoyan, X., &Min, L.(2005). Knowledge base and skill development in accounting education: Evidence from China. Journal of Accounting Education, 23(3), 149-169.

Mohamed, E. K. A., & Lashine, S. (2003). Accounting knowledge and skills and the challenges of a global business environment. Managerial Finance 29(7): 4–16.

Nelson, M. (1991).The 150-hour requirement. Outlook, 58(4), 8-14.

Nicolescu, L., & Paun, C. (2009). Relating higher education with the labour market: graduates' expectations and employers' requirements. Tertiary Education and Management, 15(1), 17-33

Novin, A. M., D.F. Fetyko, & J. M. Tucker.(1997). Perceptions of accounting educators and public accounting practitioners on the composition of 150-hour accounting programs: A comparison. Issues in Accounting Education, 12(2), 331-351.

Stoner, G. (2009).Accounting Students' IT Application Skills over a 10-year Period. Accounting Education, 18(1), 7-31.

Tam, T. (2013). What IT knowledge and skills do accounting graduates need? New Zealand Journal of Applied Business Research, 11(2), 23-42

Tempone, I., Kavanagh, M., Segal, N., Hancock, P. Howieson, B. & Kent, J.(2012). Desirable generic attributes for accounting graduates into the twenty-first century: The views of employers. Accounting research journal, 25(1), 41 – 55.

Theuri, P. M., & Gunn, R. (1998). Accounting information systems course structure and employer systems skills expectations. Journal of Accounting Education, 16(1), 101-121.

Wessels, P. L. (2005). Critical information and communication technology (ICT) skills for professional accountants. Meditari Accountancy Research, 13(1), 87-103.

Table 1: Background of Responding Employers (n=35)

Type of Industry	Number of Participants per industry	Work experience of respondents		
		Less than 5 years	5 -10 years	Greater than 10 years
Agriculture	4	0	0	4
Construction	5	0	1	4
Manufacturing	10	1	3	6
Retail	6	1	1	4
Service	7	2	0	5
Non-governmental organisations	3	0	2	1
Total	35	4	7	24

Table 2: Technology Ranking of Skills Needed and Possessed by Entry Level Accountants

Technology skill	Most important skill needed			Most important skill possessed			Mean difference	[b]t	Df	P (sig. 2-tail)	
	[a]Mean ($n = 35$)	[c]Rank	SD	Mean ($n=35$)	Rank	SD					
Acc. package - Pastel, Quickbooks	4.829	1	0.742	1.800	10	0.891	3.029	12.580	68	0.000	*
Spreadsheet package	4.514	2	0.502	3.029	6	0.507	1.486	8.455	68	0.000	*
Word-processing package	4.029	3	0.622	4.286	1	0.502	-0.257	-1.086	68	0.285	
Comm. software – outlook	3.543	4	0.867	3.657	2	0.857	-0.114	-0.849	68	0.402	
Electronic commerce	3.429	5	0.857	3.371	5	0.710	0.057	1.435	68	0.160	
Presentation software	3.286	6	0.453	2.429	8	1.302	0.857	6.000	68	0.000	*
World wide web	3.229	7	1.039	3.457	3	0.725	-0.229	-2.472	68	0.019	*
Windows	3.086	8	0.502	3.400	4	0.490	-0.314	-2.234	68	0.032	*
Techno. Management	2.886	9	0.877	1.971	9	0.852	0.914	3.861	68	0.001	*
Database package	2.571	10	0.612	2.486	7	0.881	0.086	1.785	68	0.083	
Overall values	3.540			2.989			0.551	1.642		0.135	

[a]The mean scores are obtained based on a 5-point scale, '1' represents 'Not Important' and '5' represents 'Extremely Important'

[b]t-tests performed between scores for needed and possessed on each skill. t-values and P-values are determined based on two-way ANOVA tests.

*The significance level is 0.05

[c]The ranking order is determined based on the mean scores