



Changes in the importance of topics in auditing education: 2000-2005

Importance of topics in auditing education

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Jack Armitage

*Department of Accounting, University of Nebraska at Omaha,
Omaha, Nebraska, USA*

Abstract

Purpose – The auditing educational process needs to be reevaluated in light of changing conditions so that it can adequately prepare students to function in the current environment. Utilizing two world-wide surveys of auditing professors, the purpose of this paper is to extend prior research by identifying how auditing professors rank the importance of 41 topics typically included in an auditing course and, in addition, identify the significant changes in the topics' importance between the survey conducted in 2000 and repeated in 2005. The paper also aims to examine the focus, emphasis, prerequisites, required status, and level of university auditing courses.

Design/methodology/approach – The study is based on the results of two questionnaires. The professors surveyed were identified from Hasselback's 2000-2001 and 2005-2006 *Accounting Faculty Directories*. The first questionnaire was mailed in November 2000 and the request to participate in the 2005 survey was e-mailed in July 2005.

Findings – The most important topics indicated from the 2005 survey are audit risk, understanding internal control structures, types and sources of evidence, standard audit reports, and financial statement assertions. The most important topics from the 2000 survey are types and sources of evidence, audit risk, standard audit report, materiality, and understanding internal control structures. Topics with the largest increases in importance between 2000 and 2005 are reports on internal control, fraud awareness, working papers, and auditing history. Topics with the largest decline in importance are assurance services, information systems auditing, computer auditing techniques, governmental/not-for-profit auditing standards, and legal liability of auditors. Other results show that the first auditing course is usually focused on external auditing only, is usually required, offered at the undergraduate level, and the most common prerequisite is intermediate financial accounting.

Research limitations/implications – Research limitations include the possibility of non-response bias, the type of survey instrument used between the two surveys, and the source used to draw the sample.

Practical implications – For auditing classes to remain relevant and to equip students with the knowledge and skills necessary to become tomorrow's successful auditing practitioners, auditing professors must continue to reevaluate their auditing courses in light of the changing business environment, requirements placed on auditors by society, changes in professional auditing standards, current research in auditing, and practitioners' needs.

Originality/value – The paper makes a contribution to the existing literature by adding comparability between two surveys at different points in time so that professors can identify the trends and importance of topics in auditing education.

Keywords Auditing, Accounting curricula, Academic staff education

Paper type Research paper



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Introduction

The twenty-first century has brought many changes to the auditing profession. The increasing importance of global markets, the highly publicized audit failures in the USA and elsewhere, and the passage of Sarbanes-Oxley legislation in the USA have presented new challenges and problems for the profession. This is one of the most dynamic and turbulent periods in the history of auditing. After Enron's failure and the implosion of Arthur Andersen, the passage of the Sarbanes-Oxley legislation and the creation of the PCAOB created many new responsibilities for auditors. These changes also have an impact on auditing education. Just as the professional practice of auditing evolves to meet the changing needs of society, the accounting educational process needs to be continuously reevaluated so it can adequately prepare future practitioners for successful careers.

Many universities are taking up this challenge and changing their course offerings and content to better equip students to meet the new issues facing the profession (Titard *et al.*, 2004). Mark Allison, Director of Education at the Institute of Chartered Accountants of Scotland, indicated the first step needed is for a harmonization of accounting and auditing education (*Financial Times*, 2004). A World Bank team making an assessment of accounting and auditing in Pakistan emphasized the importance of enhanced education of students in auditing standards (*Financial Times Information Global News Wire*, 2004). The UAE Accountants and Auditors Association signed an agreement with a consulting firm to help develop the UAE's accountancy and auditing profession through enhanced education so individuals will be qualified to receive certification from the USA (*Emirates News Agency*, 2004).

Universities, employer training, professional bodies, and continuing professional development all play a role in preparing professional accountants and auditors to function effectively in their job (Wilson, 2006). International Education Standard 8 (International Federation of Accountants – IFAC, 2006) states that the education and development to become an audit professional can be obtained at different points along the education cycle. The standard indicates that education pursued at academic institutions, on-the-job training, employer or professional organization training, and continuing professional development are all vital to becoming an audit professional. Although all of these types of education and training are vitally important to prepare professional auditors, this paper only examines educational activities at academic institutions.

Utilizing two world-wide surveys of auditing professors, the purpose of this paper is to extend prior research by identifying how auditing professors rank the importance of 41 topics typically included in an auditing course, and in addition, identify the significant changes in the topics' importance between the survey conducted in 2000 and repeated in 2005. This paper also examines the focus, emphasis, prerequisites, required status, and level of university auditing courses.

This study makes a contribution to the existing literature by adding comparability between two surveys at different points in time so professors can identify the importance of topics and trends in auditing education. Not only does this study allow auditing professors to compare their course to the views of hundreds of other auditing professors around the world, it also shows how the importance of topics in the first auditing class has changed during the period 2000-2005.

Literature review

Much has been written regarding accounting education and how it should change to meet the needs of the profession, as was well chronicled by Albrecht and Sack (2000). However, there is a more limited body of literature specifically examining the auditing course in college and university curricula, and relatively few studies that have examined the importance professors place on specific topics in auditing courses.

One of the earliest papers to examine auditing courses was van Voorhis (1954). He reported the results of a survey of internal auditing courses, which was an emerging area at the time. That survey was followed up by the report of the American Accounting Association's (1954) Committee on Internal Auditing Education. This report contained the results of another survey on internal auditing courses. It found that 21 courses were being offered in the USA with another 18 schools seriously considering setting up a course in the future.

Carmichael and Willingham (1969) argue strongly that the first auditing course should follow a conceptual basis. They urged textbook authors to emphasize the conceptual approach to auditing while reducing the coverage of procedural verification. They also recommend that the auditing course not be used to review accounting principles where students might need remediation nor as a course where students first learn internal control concepts, as those should be included in an accounting systems course. This argument was followed as is evidenced over the next 20 years by textbooks abandoning the very procedural approach and adopting a more conceptual approach to auditing education.

Frakes (1987) surveyed universities to assess the status of auditing courses. Major problems were identified in the areas of curriculum design, development of relevant teaching materials, dissemination of technology, and continuing education for faculty.

As auditing education evolved and expanded, some schools began to add a second auditing course. Groomer and Heintz (1994) surveyed advanced auditing courses in the USA and Canada and classified the courses according to their nature, level, and subject matter. They found that advanced auditing courses are more likely to be offered at large, accredited schools with relatively large faculties, are independent courses rather than extensions of the first course, and the topics most covered were statistical sampling, EDP auditing, internal controls, and the role and environment of auditing.

While most of the research into auditing education focused on external auditing, some studies began to look at internal auditing courses as well. Foster and Brady-Greenawalt (1995) compared internal auditing education across countries. This paper was a review of existing literature and described internal auditing education in the USA, England, Australia, New Zealand, and France. The author concluded that the trend of increased emphasis on internal auditing would continue.

Gramling *et al.* (1996) used a survey questionnaire to study the role of undergraduate auditing courses in USA universities in reducing the expectations gap that was first identified by the Cohen Commission Report (Commission on Auditors' Responsibility – CAR, 1978). Many significant differences between views of students and practicing auditors were found including the auditor's responsibility to detect fraud, prohibitions and regulations on audit firms, groups to whom auditors should be responsible, and the auditor's role with respect to audited financial statements. Novin (1997) examined the similarities and dissimilarities of academic subjects needed for careers in management accounting, auditing, and tax.

The paper was based on a survey of practitioners and reported that the study of taxation, statistical sampling, business law, and not-for-profit accounting are more important for auditors than for managerial accountants. However, this paper did not examine the individual topics within courses. Vinten (2004) discussed the future of internal auditing education in the UK. His study found that internal audit education is limited to just a few institutions, has decreased from the 1980s, and is in danger of disappearing from universities' curricula. Clearly, Vinten's results did not support the prediction of Foster and Brady-Greenawalt (1995). McCartney *et al.* (2002) investigated whether a gap exists between academic content and practitioner needs for internal auditing in the USA. A questionnaire survey was used to gather data from auditing faculty and practitioners to determine the importance of 25 different internal auditing topics. There was agreement in some areas, but educators placed more importance on engagement planning, preliminary surveys, audit programs, risk management, and fraud. Practitioners placed more importance on qualities desired in staff internal auditors, Certified Internal Auditor examination preparation, and computer auditing.

The following four studies are most closely related to the purpose of this paper. Engle and Elam (1985) examined the extent of coverage of 36 topics in auditing courses by obtaining information on the class time allocated to each topic by using a survey questionnaire. Their study found the five most important topics to be internal control structure, standard audit report, designing and performing substantive tests, types and competence of evidence, and auditors' professional responsibility and legal liability. Dunn and Walters (1992) examined the way in which auditing was taught in the UK. They used a survey and review of syllabi, reading lists, and examination papers to examine the courses. From the survey, they found in the area of course content that professors spent 26 percent of teaching time on the topic of collection of evidence, 19 percent on theory of auditing, 11 percent each on ethics and reporting, and 9 percent on computer auditing. Bryan and Smith (1997) surveyed auditing professors to ascertain their perceptions of the importance of 31 auditing topics. The results found that there was widespread agreement, across academic ranks and school's accreditation status, on many topics. The five most important topics were generally accepted auditing standards, audit risk and materiality, internal control structure, type and competence of evidence, and the standard audit report. The Auditing Section Education Committee of the American Accounting Association (Johnson *et al.*, 2003) reported the results of a survey of auditing curricula. Their findings found the most important topics in the first auditing course to be the audit role and environment, auditing risk, internal controls, audit evidence, and the audit process.

Comparing these four studies, it is clear that audit risk, internal control, and evidence are viewed as an important component of an auditing class. However, other topics are ranked in the top five in some surveys but not in others such as generally accepted auditing standards, auditors' professional responsibility and legal liability, and the audit process. However, one deficiency in previous research into the importance of topics in auditing classes is that different terms were used for identifying auditing topics. Without using the same terms to describe the topics, it is difficult to compare the previous studies to identify changes and trends in auditing education. For example, some might believe that designing and performing substantive tests and the audit process are the same topic while other may not. Or the theory of auditing and generally accepted auditing standards may be confused.

Also, combining audit risk and materiality makes comparison less useful when other surveys treat them as two separate topics. This problem creates a lack of comparability over time. The study reported in this paper overcomes that problem by using the same terms to identify the topics used in the two studies. Therefore, this study makes a contribution to the existing literature by adding comparability between two surveys at different points in time so professors can identify the trends and importance of topics in auditing education.

Research design

This study is based on the results of two surveys. The first questionnaire was mailed to a sample of professors with an interest in auditing as identified by the Hasselback's (2000-2001) *Accounting Faculty Directory*. The sample frame consisted of all colleges and universities listed in the Hasselback Directory and included individuals with auditing shown as an area of interest. If more than one individual indicated auditing as an area of interest, only one individual was randomly selected for the sample. Not all universities offering accounting programs are included in the Hasselback Directory, and of the universities listed, the directory is very heavily weighted with universities located in the USA and Canada. This characteristic of the directory is reflected in the larger number of responses from the USA and Canada and much lower representation by countries outside North America.

The first questionnaire, along with a cover letter introducing the study and a postage paid return envelope, was mailed in November 2000. A few weeks later, follow-up second requests were mailed to all nonrespondents to the first mailing. A second web-based questionnaire was utilized in July 2005. The request to participate in the 2005 survey, which explained the study and provided the link to the online survey, was emailed to all faculty (world-wide) indicating an interest in auditing as evidenced by Hasselback's (2005-2006) *Accounting Faculty Directory*. Select Survey ASP software was used this survey and only a single response was allowed from a respondent. This sample included all individuals indicating auditing as an area of interest, rather than just one individual per institution as was done in the first survey. This was done to try to increase the number of respondents to the survey. Not all faculty reporting an interest in auditing in Hasselback's *Accounting Faculty Directory* actually teach auditing, but only indicate an interest for research purposes. Thus, expanding the sample to all faculty indicating an interest in auditing will better assure that the request to participate in the survey goes to a faculty member that has actually taught auditing. This in fact was the result as only 1.9 percent of respondents indicated they have zero years experience teaching auditing. Again, a follow-up second request was emailed a few weeks later.

Table I reports response rates for the survey. A total of 217 (195 first mailing and 22 second mailing) usable responses were received to the 2000 survey out of a sample size of 1,002 and 311 (235 from the first request and 77 from the second request) to the 2005 survey out of a sample size of 2,554, resulting in response rates of 21.7 and 20.0 percent, respectively. These response rates are comparable with response rates reported in other similar studies. Responses were received from 25 countries as reported in Table II. Data will be reported separately for Australia, Canada, New Zealand, UK, and USA. The other countries will be reported in combined form because of a low number of responses.

A test for nonresponse bias was conducted comparing the responses of those who responded to the first request to the survey to those who responded to the second

request (Oppenheim, 1966, pp. 34-5). At the 0.05 level of significance, there was only a significant difference for four of the 41 topics tested. For the demographic variables, only certification status was significant. These results show the effects of nonresponse bias are minimal in this study.

Both surveys used identical questions and asked the recipients to indicate the importance of the same 41 auditing topics. The questionnaire surveyed topics covered

	2000 survey	2005 survey	Total
Total sample	1,033	1,718	2,751
Less: undeliverable addresses	< 31 >	< 166 >	< 197 >
Adjusted sample size	1,002	1,552	2,554
Responses – 1st request	195	235	429
Responses – 2nd request	22	77	100
Total responses	217	311	528
Response rate (percent)	21.7	20.0	20.7

Table I.
Response rates

Countries	Number of responses	
<i>Reported separately</i>		
Australia		40
Canada		33
New Zealand		10
UK		22
USA		377
<i>Combined reporting</i>		
Asia		
Guam	1	
Hong Kong	4	
Japan	2	
Korea	3	
Oman	1	
Saudi Arabia	2	
Singapore	4	
Taiwan	2	
Thailand	5	24
Caribbean		
Barbados	2	
Puerto Rico	1	3
<i>Europe – other</i>		
Cyprus	1	
Finland	4	
France	2	
Germany	1	
Greece	1	
Ireland	1	
Netherlands	4	
Norway	2	
Sweden	3	
Total		19
		528

Table II.
Countries represented
in survey

in leading auditing textbooks in 2000 (Arens and Loebbecke, 1999; Boynton and Kell, 1996; Gray and Manson, 1999; Robertson and Louwers, 1998). The topics surveyed are also the primary topics covered in current auditing textbooks (Arens *et al.*, 2006; Gray and Manson, 2005; Louwers *et al.*, 2005; Messier *et al.*, 2006).

The survey asked respondents to rate the importance of 41 auditing topics on a Likert scale from 1 (not important) to 5 (very important). The advantages of using a Likert scale are its ease of use and, even though the data are ordinal, the ability to calculate mean responses. The rankings of the importance of the topics were determined from the mean responses to each question. The survey also asked respondents to indicate the focus their school's first auditing class (internal auditing, external auditing, or both), the emphasis of the course (theory, practice, or both), their school's prerequisites for the first auditing class, whether the class is mandatory or elective, and whether it is at the undergraduate or graduate level. If the recipient's school offered additional auditing classes, the respondent was also asked to indicate the mandatory/elective status and level of the additional course(s).

Table III presents the demographics of the respondents. Panel A shows respondents to both surveys had significant experience in both teaching auditing as well as practical work experience. The mean years respondents taught auditing is 14.3 and 12.0, respectively, for the 2000 and 2005 studies. Although there is a significant difference between the years, respondents have taught auditing between the two surveys ($t = 3.091, p = 0.002$), both groups show the respondents have taught auditing long enough to be well experienced auditing educators. The respondents have less practical work experience compared to the time they have taught auditing, but still reported sufficient practical work experience to understand the practice of auditing. The mean years of practical work experience is 7.5 and 6.5, respectively, for the 2000 and 2005 studies. There is no significant difference between the respondents' years of practical work experience between the two surveys ($t = 1.267, p = 0.206$). Another indication that respondents are knowledgeable about auditing practice is that a very large portion of the respondents hold some type of professional certification. About 93 percent of the respondents to the 2000 survey were certified and 86 percent for the 2005 survey. There is no significant difference between these results ($\chi^2 = 1.865, p = 0.172$).

Table III, Panel B, reports the highest degree held by the respondents to the surveys. The respondents to the 2005 survey are more likely to hold a doctorate than for the 2000 survey, although over half of the 2000 respondents held a doctorate. While this difference is significant ($\chi^2 = 15.537, p = 0.000$), it should have no effect on the results because the professors represented in the survey are well experienced in teaching auditing.

Results and discussion

Course topics

Table IV reports the mean response and rank for the 41 topics for both surveys. Statistical differences are determined by two-sided *t*-tests. Table V presents the data separated by country of the respondent. The five most important topics from the 2005 survey are audit risk, understanding internal control structures, types and sources of evidence, standard audit report, and financial statement assertions. The five most important topics from the 2000 survey are types and sources of evidence, audit risk,

	2000 survey		2005 survey	
	Mean	SD	Mean	SD
<i>Panel A</i>				
Years taught auditing				
All respondents	14.3	7.8	12.0	8.4
By country				
Asia – combined	9.0	4.8	3.4	2.4
Australia	14.3	6.2	13.8	7.1
Canada	11.4	6.6	14.7	8.7
Europe – other combined	17.6	7.5	8.3	5.7
New Zealand	8.2	3.7	9.0	7.3
UK	14.2	7.1	9.5	5.4
USA	15.3	8.4	12.1	8.4
Years practical work experience				
All respondents	7.5	8.1	6.5	7.9
By country				
Asia – Combined	3.9	2.9	7.4	8.1
Australia	7.9	7.5	6.3	5.4
Canada	6.9	7.0	8.7	9.2
Europe – other combined	13.9	10.3	11.7	15.4
New Zealand	5.2	4.3	23.3	18.7
UK	9.9	9.4	5.0	0.8
USA	6.9	8.1	6.0	7.3
	<i>Number</i>	<i>Percent</i>	<i>Number</i>	<i>Percent</i>
Respondents holding certification				
All respondents	201	93	269	86
By country				
Asia – combined	14	93	7	78
Australia	19	79	11	69
Canada	16	94	15	94
Europe – other combined	11	85	1	17
New Zealand	6	100	4	100
UK	15	83	2	50
USA	118	97	229	90
<i>Panel B</i>				
Respondents' highest degree held				
All respondents				
Bachelors	10	5	4	1
Masters	77	36	71	24
Doctorate	124	59	217	75
Missing	6		19	
Total	217	100	311	100
By country				
Asia – combined				
Bachelors	0	0	0	0
Masters	5	33	2	29
Doctorate	10	67	5	71
Australia				
Bachelors	1	4	1	7
Masters	13	54	5	33
Doctorate	10	42	9	60

Table III.
Respondent
demographics

(continued)

	2000 survey		2005 survey		Importance of topics in auditing education
Canada					
Bachelors	2	12	1	7	
Masters	1	6	3	21	
Doctorate	14	82	10	72	
Europe – other					
Bachelors	2	17	0	0	
Masters	6	50	2	33	
Doctorate	4	33	4	67	
New Zealand					
Bachelors	1	67	2	50	
Masters	3	50	1	25	
Doctorate	2	33	1	25	
UK					
Bachelors	3	19	0	0	
Masters	7	44	1	25	
Doctorate	6	37	3	75	
USA					
Bachelors	1	1	0	0	
Masters	40	34	57	24	
Doctorate	78	65	185	76	

Table III.

standard audit report, materiality, and understanding IC structures. Using the rankings from Table IV, a significant difference between the two sets of rankings was tested for using Spearman's ρ rank order coefficients. The rankings between the two surveys are significantly different ($r_s = 0.944, p = 0.000$).

Table VI groups the topics into similar categories as the following discussion in this section is presented by topic groups. The groups given the most importance by the respondents are audit report topics, topics related to planning the audit, auditing standards (excluding governmental and NGO standards), internal control structure topics, and fraud topics. Fraud topics showed the largest increase in importance between 2000 and 2005 and IT auditing topics showed the greatest decrease in importance between 2000 and 2005.

The auditing standards group of topics, which consists of the topics of domestic standards, international standards, and governmental/NGO standards showed a 3 percent decrease in the group means between the two surveys. The group mean for this category decreased from 3.57 in 2000 to 3.47 in 2005 and was primarily because of the perceived decrease in the importance of the governmental/NGO standards topic. The decrease in the governmental/NGO topic was significant ($p = 0.003$). There was no significant change for domestic or international standards with the change in both topics increasing only very slightly. Based on these results, accounting faculty believe the study of domestic standards is very important, international standards of less importance, and governmental/NGO standards of much less importance. The decline in the importance of governmental/NGO standards in the first auditing class is probably due to the increasing importance of governmental/NGO accounting. Miller and van Daniker (1999) reported that there is an increase in the number of schools offering governmental accounting classes and governmental auditing issues are included in the class. So, as this area of accounting becomes more important, and more accounting programs are adding

Topic	2000 survey		2005 survey		Two-tailed <i>t</i> -test	
	Rank	Mean	Rank	Mean	<i>T</i>	<i>p</i>
Audit risk*	1t	4.80	1	4.87	-1.786	0.075
Types and sources of evidence	1t	4.80	3	4.80	-0.130	0.897
Standard audit report	3	4.74	4	4.72	0.488	0.626
Materiality	4	4.72	7	4.69	0.630	0.529
Understanding IC structures***	5	4.71	2	4.85	-2.961	0.003
Financial statement assertions	6	4.70	5t	4.71	-0.147	0.883
Domestic auditing standards	7	4.65	9	4.66	-0.276	0.783
Professional ethics	8	4.63	10	4.64	-0.189	0.850
Analytical procedures	9	4.62	11	4.62	-0.038	0.969
Assessing control risk	10	4.61	8	4.68	-1.353	0.177
Modifications from standard audit report	11	4.58	12	4.57	0.193	0.847
Fraud awareness***	12	4.38	5t	4.71	-5.616	0.000
Planning and administration of audit	13t	4.35	14	4.28	0.959	0.338
Legal liability of auditors***	13t	4.35	19	4.05	4.003	0.000
Subsequent events	15	4.28	16	4.18	1.337	0.182
Substantive tests: revenue cycle**	16	4.14	13	4.31	-2.162	0.031
Computer auditing techniques***	17	4.13	23	3.79	4.108	0.000
Information systems auditing***	18	4.10	24t	3.73	4.362	0.000
Tests of controls: revenue cycle**	19	4.02	15	4.21	-2.433	0.015
Substantive tests: acquisition cycle	20	3.95	20	3.98	-0.277	0.782
Tests of controls: acquisition cycle	21	3.85	22	3.89	-0.395	0.693
Working papers***	22	3.82	18	4.09	-2.979	0.003
Fraud techniques**	23	3.74	21	3.96	-2.431	0.015
Attribute sampling methods	24t	3.73	24t	3.73	0.013	0.990
Substantive tests: production cycle**	24t	3.73	26	3.53	2.101	0.036
Assurance services***	26	3.70	36t	3.28	4.343	0.000
Tests of controls: production cycle	27t	3.65	27t	3.52	1.354	0.177
Non-statistical sampling**	27t	3.65	30	3.43	2.577	0.010
Reports on internal control****	29	3.61	17	4.12	-6.093	0.000
Substantive tests: payroll cycle**	30	3.59	32	3.38	2.018	0.044
PPS sampling**	31	3.58	33t	3.36	2.219	0.027
Substantive tests: fin&investment cycle**	32	3.57	33t	3.36	2.068	0.039
Tests of controls: payroll cycle	33t	3.50	31	3.41	0.881	0.379
Tests of controls: fin&investment cycle*	33t	3.50	35	3.30	1.919	0.056
Organization of auditing profession	35	3.42	29	3.45	-0.357	0.721
Certification requirements**	36	3.31	27t	3.52	-2.134	0.033
Classical variables sampling methods*	37	3.28	39	3.10	1.755	0.080
International auditing standards	38	3.20	38	3.21	-0.127	0.899
Internal Auditing	39	3.14	36t	3.28	-1.486	0.138
Gov't/not-for-profit auditing stds***	40	2.83	41	2.53	3.007	0.003
Auditing history***	41	2.43	40	2.68	-2.825	0.005

Table IV.

Importance of topics: all respondents

Notes: Anchor points: 1 – not important; 5 – very important; significance levels at: *0.10; **0.05; and ***0.01, respectively

separate governmental/NGO courses, the study of governmental/NGO auditing standards is moving to that course and out of the first auditing class.

Topics related to planning the audit were considered very important in both 2000 and 2005 and showed a slight increase in the group means between the two surveys.

Que	Topic	Asia-combined		Australia		Canada		Europe-other		New Zealand		UK		USA	
		2000	2005	2000	2005	2000	2005	2000	2005	2000	2005	2000	2005	2000	2005
1.	Professional ethics	4.53	4.71	4.54	4.21	4.71	4.73	4.54	3.83	4.00	4.00	4.50	4.75	4.70	4.69
2.	Organization of auditing profession	3.47	3.71	3.63	2.79	2.88	3.40	2.85	3.33	3.83	3.50	3.72	3.75	3.44	3.48
3.	Legal liability of auditors	4.33	4.00	4.71	4.50	4.12	4.07	4.23	4.00	4.50	3.50	4.44	4.50	4.31	4.03
4.	Auditing history	2.67	2.43	2.46	2.43	2.12	2.87	2.08	2.50	2.00	2.25	3.06	2.50	2.41	2.70
5.	Domestic auditing standards	4.73	4.43	4.75	4.79	4.35	4.38	4.38	4.33	4.50	4.25	4.11	3.50	4.76	4.71
6.	International auditing standards	3.93	3.86	3.42	4.36	3.18	3.47	3.46	4.50	3.17	4.00	3.61	4.00	2.97	3.05
7.	Certification requirements	3.73	4.14	3.08	2.93	2.41	2.87	3.46	3.67	2.83	2.50	3.06	2.75	3.47	3.61
8.	Internal auditing	3.40	3.71	3.54	3.71	3.06	3.00	3.15	2.83	3.17	3.00	3.00	2.50	3.03	3.29
9.	Gov't/not-for-profit auditing stds	3.00	2.00	3.04	2.50	2.41	2.13	2.33	2.17	2.50	3.50	2.89	1.50	2.89	2.58
10.	Planning and administration of audit	4.00	4.14	4.58	4.43	4.59	4.13	3.85	4.00	3.83	3.25	3.89	3.25	4.45	4.33
11.	Financial statement assertions	4.40	4.57	4.92	4.57	4.88	4.60	4.54	3.67	4.50	5.00	4.13	3.75	4.77	4.77
12.	Types and sources of evidence	4.67	4.71	4.92	4.79	4.94	4.67	4.46	4.17	5.00	4.75	4.50	4.00	4.84	4.85
13.	Working papers	4.20	3.86	3.63	3.57	3.29	3.64	3.69	3.50	3.67	3.75	3.39	2.75	3.98	4.20
14.	Audit risk	4.93	4.71	4.92	4.86	5.00	4.80	4.69	4.00	5.00	5.00	4.61	5.00	4.76	4.89
15.	Materiality	4.80	4.29	4.75	4.29	5.00	4.67	4.62	4.17	4.67	5.00	4.50	4.75	4.71	4.73
16.	Analytical procedures	4.87	4.57	4.83	4.64	4.76	4.60	4.31	3.83	4.50	4.75	4.11	4.00	4.64	4.65
17.	Understanding IC structures	4.80	4.86	4.96	4.57	4.88	4.87	4.31	4.17	4.83	4.75	4.11	4.25	4.75	4.90
18.	Assessing control risk	4.73	4.71	4.88	4.62	4.81	4.80	4.23	4.00	4.83	4.50	4.17	3.75	4.61	4.71
19.	Tests of controls: revenue cycle	4.20	4.57	3.91	3.64	3.71	4.40	3.85	3.50	3.83	3.50	3.17	3.25	4.21	4.27
20.	Tests of controls: acquisition cycle	4.13	4.43	3.73	3.50	3.35	3.73	3.69	3.50	3.83	3.25	3.17	2.50	4.03	3.95
21.	Tests of controls: production cycle	4.00	4.43	3.43	3.21	3.29	3.43	3.62	3.33	3.50	3.00	3.17	2.50	3.77	3.55
22.	Tests of controls: payroll cycle	4.00	4.00	3.41	3.43	3.18	3.47	3.46	3.00	3.67	3.25	3.11	2.50	3.54	3.42
23.	Tests of controls: fin & invest cycle	4.07	4.14	3.23	3.14	3.24	3.13	3.85	3.17	3.33	3.00	3.11	2.50	3.53	3.32
24.	Attribute sampling methods	4.07	4.14	3.63	3.21	3.59	3.53	3.54	3.00	3.50	3.50	3.11	2.50	3.84	3.80
25.	Classical variables sampling methods	4.00	3.43	3.42	2.57	3.00	2.80	3.08	2.50	3.00	2.50	2.78	2.00	3.31	3.19

(continued)

Table V.
Importance of topics:
topics in order on survey
– by country

Table V.

Que	Topic	Asia-combined		Australia		Canada		Europe-other		New Zealand		UK		USA	
		2000	2005	2000	2005	2000	2005	2000	2005	2000	2005	2000	2005	2000	2005
26.	PPS sampling	4.07	3.71	3.50	2.86	3.35	3.00	3.15	2.50	3.67	3.00	3.00	2.00	3.70	3.45
27.	Non-statistical sampling	3.93	3.29	3.71	3.14	3.59	3.07	3.62	2.33	2.83	3.75	2.89	2.00	3.77	3.51
28.	Fraud awareness	4.47	4.43	4.17	4.50	4.12	4.67	4.08	3.67	4.67	4.50	4.06	4.00	4.50	4.77
29.	Fraud techniques	4.33	4.29	3.63	4.00	3.41	3.57	3.23	2.83	3.67	3.75	3.44	1.67	3.83	4.03
30.	Information systems auditing	4.40	4.14	4.58	4.21	4.06	3.93	3.92	3.50	4.83	3.50	3.78	3.33	4.02	3.68
31.	Substantive tests: revenue cycle	4.33	4.57	3.87	3.64	3.88	4.53	4.08	3.33	4.00	3.50	3.22	3.33	4.36	4.39
32.	Substantive tests: acquisition cycle	4.27	4.43	3.75	3.71	3.50	3.93	3.77	3.33	3.83	3.25	3.22	2.33	4.14	4.03
33.	Substantive tests: production cycle	4.13	4.29	3.39	3.21	3.50	3.47	3.69	3.17	3.33	3.00	3.11	2.00	3.88	3.56
34.	Substantive tests: payroll cycle	4.13	3.57	3.43	3.29	3.38	3.67	3.62	3.00	3.50	3.25	3.06	2.00	3.65	3.39
35.	Substantive tests: fin & invest cycle	4.20	4.00	3.35	3.21	3.44	3.40	3.62	3.17	3.17	2.75	3.11	2.00	3.63	3.38
36.	Subsequent events	4.47	4.57	4.46	4.36	4.12	4.33	3.85	3.17	4.17	3.75	3.67	2.33	4.39	4.21
37.	Computer auditing techniques	4.40	4.14	4.58	4.00	3.82	3.71	4.00	4.00	4.33	3.50	3.67	4.00	4.12	3.77
38.	Assurance services	4.33	3.71	3.75	3.43	4.00	3.53	3.31	2.83	3.33	3.25	3.29	1.67	3.69	3.28
39.	Standard audit report	4.53	4.86	4.71	4.64	4.76	4.80	4.77	4.17	4.50	5.00	4.50	4.33	4.81	4.73
40.	Modifications from std audit report	4.33	5.00	4.50	4.64	4.59	4.47	4.54	4.67	4.83	5.00	4.17	4.67	4.68	4.55
41.	Reports on internal control	4.20	4.29	3.67	3.36	3.76	3.80	3.69	4.00	3.17	3.50	3.56	1.67	3.52	4.22

Notes: Anchor points: 1 – not important; 5 – very important

Que. No.	Topic	Mean response		Two-tailed <i>t</i> -test	
		2000 survey	2005 survey	<i>t</i>	<i>p</i>
<i>Auditing standards</i>					
5.	Domestic auditing standards	4.65	4.66	-0.276	0.783
6.	International auditing standards	3.20	3.21	-0.127	0.899
9.	Gov't/not-for-profit auditing stds	2.83	2.53	3.007	0.003
<i>Planning the audit</i>					
10.	Planning and administration of audit	4.35	4.28	0.959	0.338
11.	Financial statement assertions	4.70	4.71	-0.147	0.883
12.	Types and sources of evidence	4.80	4.80	-0.130	0.897
13.	Working papers	3.82	4.09	-2.979	0.003
14.	Audit risk	4.80	4.87	-1.786	0.075
15.	Materiality	4.72	4.69	0.630	0.529
16.	Analytical procedures	4.62	4.62	-0.038	0.969
<i>Internal control structure</i>					
17.	Understanding IC structures	4.71	4.85	-2.961	0.003
18.	Assessing control risk	4.61	4.68	-1.353	0.177
41.	Reports on internal control	3.61	4.12	-6.093	0.000
<i>Tests of controls</i>					
19.	Tests of controls: revenue cycle	4.02	4.21	-2.433	0.015
20.	Tests of controls: acquisition cycle	3.85	3.89	-0.395	0.693
21.	Tests of controls: production cycle	3.65	3.52	1.354	0.177
22.	Tests of controls: payroll cycle	3.50	3.41	0.881	0.379
23.	Tests of controls: fin&investment cycle	3.50	3.30	1.919	0.056
<i>Substantive tests</i>					
31.	Substantive tests: revenue cycle	4.14	4.31	-2.162	0.031
32.	Substantive tests: acquisition cycle	3.95	3.98	-0.277	0.782
33.	Substantive tests: production cycle	3.73	3.53	2.101	0.036
34.	Substantive tests: payroll cycle	3.59	3.38	2.018	0.044
35.	Substantive tests: fin&investment cycle	3.57	3.36	2.068	0.039
<i>Audit reports</i>					
39.	Standard audit report	4.74	4.72	0.488	0.626
40.	Modifications from standard audit report	4.58	4.57	0.193	0.847
<i>Audit sampling</i>					
24.	Attribute sampling methods	3.73	3.73	0.013	0.990
25.	Classical variables sampling methods	3.28	3.10	1.755	0.080
26.	PPS sampling	3.58	3.36	2.219	0.027
27.	Non-statistical sampling	3.65	3.43	2.577	0.010
<i>Fraud</i>					
28.	Fraud awareness	4.38	4.71	-5.616	0.000
29.	Fraud techniques	3.74	3.96	-2.431	0.015
<i>IT auditing</i>					
30.	Information systems auditing	4.10	3.73	4.362	0.000
37.	Computer auditing techniques	4.13	3.79	4.108	0.000
<i>Other topics</i>					
1.	Professional ethics	4.63	4.64	-0.189	0.850
2.	Organization of auditing profession	3.42	3.45	-0.357	0.721
3.	Legal liability of auditors	4.35	4.05	4.003	0.000
4.	Auditing history	2.43	2.68	-2.825	0.005
7.	Certification requirements	3.31	3.52	-2.134	0.033
8.	Internal auditing	3.14	3.28	-1.486	0.138
38.	Assurance services	3.70	3.28	4.343	0.000

Notes: Anchor points: 1 – not important; 5 – very important; significance levels at: *0.10; **0.05; and ***0.01, respectively

Table VI.
Importance of topics by
category – all
respondents

For both surveys, this group of topics was the second ranked group next to audit reports in both cases. Planning topics are rated as some of the most important topics in the first auditing class, and the study of audit risk is ranked as the most important topic in an auditing course in the 2005 survey and is tied for most important in the 2000 survey with the study of evidence. Understanding the audit risk concept is vitally important to students understanding auditing because audits are planned on an audit risk basis and auditing standards are written from an audit risk perspective. Audit evidence, financial statement assertions, and materiality are also highly ranked in both surveys. They are ranked among the six most important topics in both surveys. The remaining topics in this category are also considered very important. Analytical procedures, planning and administration of the audit, and working papers received a mean response of 4.0 or greater for both 2000 and 2005 (except for working papers in 2000 with a 3.82). The topic working papers reported a significant increase ($p = 0.003$). Given the fact that a significant amount of total audit hours are devoted to planning issues, it is not a surprise that these topics were considered very important.

Topics related to internal control structure are ranked as the third most important group of topics in both surveys. The topic is also becoming more important as the results show a 6 percent increase in group means between the two surveys. This group consists of understanding internal control structures, assessing control risk, and issuing reports on internal control. The group mean changed from 4.31 in 2000 to 4.55 in 2005. Understanding internal control and assessing control risk are considered important topics in both surveys with mean responses above 4.6 in both surveys, and understanding internal control reported a significant increase ($p = 0.003$). Reports on internal control had the largest significant increase of any topic ($p = 0.000$). These changes are clearly a response to the role weak controls played in the massive fraud cases of recent years, and in the USA, the requirements of the Sarbanes-Oxley Act of 2002 that now requires a separate report on internal control for public companies.

The study of tests of controls topics are considered among the least important topics to be covered in a first auditing class and the importance of the topics decreased from the 2000 survey to the 2005 survey. The group means are 3.70 for the 2000 survey and 3.67 for 2005. Tests of controls for the revenue cycle is the only topic that had a mean response greater than 4.0 for either year and only one of two topics showing an increase in importance along with tests of controls for the acquisition cycle, although that was a very small increase. Tests of controls of the revenue cycle showed a statistically significant increase ($p = 0.015$). Tests of controls for the production cycle, payroll cycle, and finance and investment cycle all reported decreases in importance. The decline in the importance of the study of tests of controls may be attributed to professors placing increasing importance on other topics that must be covered in an auditing class, but this result does not follow current practice in auditing. Bierstaker and Wright (2004) report that auditors indicate the frequency of testing of controls has significantly increased as a result of the enhanced audit focus on business processes. Testing of controls seems to be a topic where the auditing classroom has not kept pace with the practice of auditing.

The study of substantive testing topics received a two percent decrease in importance in the group means for the two surveys and rank among the least important topics in both surveys. The group mean for the five topics is 3.80 and 3.71,

respectively, for the 2000 survey and the 2005 survey. As with tests of controls, only the revenue cycle received mean responses greater than 4.0 for both surveys, and reported a significant ($p = 0.031$) increase in importance. Substantive tests of the acquisition cycle showed a small increase in importance while substantive tests of the production cycle, payroll cycle, and finance and investment cycle all reported significantly ($p = 0.036$, $p = 0.044$, and $p = 0.039$, respectively) lower importance in 2005 than in 2000. Again, the declining importance of substantive tests topics may be a result of other more important topics that must be covered in the limited class time. Also, this topic cannot be covered until the audit planning topics are first covered which puts it in the latter part of the course when class time is even more critical.

The group of topics labeled “audit reports” are considered the most important group of topics in both 2000 and 2005. Although there was a very slight decline in the importance in the study of the standard report and modifications of the standard report between 2000 and 2005, both topics rate among the most important topics in the first auditing course with mean responses greater than 4.5 for both topics for both years. The standard audit report ranked 3rd and 4th in 2000 and 2005, respectively, and modifications to the standard report ranked 11th and 12th, respectively. Besides the fact that the audit report is important because it is the output of an audit, it is likely that many professors rank it high because they choose to cover the topic early in the auditing course so the topic of audit reports can be integrated into the remaining topics in the course.

The group means showed a four percent decrease in importance for audit sampling topics between 2000 and 2005. Group means for the four topics in this category are 3.56 and 3.41 for 2000 and 2005. Besides decreasing in importance, all the sampling topics for both years were ranked in the lower half of all topics. Non-statistical sampling and PPS sampling both reported significant decreases in importance ($p = 0.010$ and $p = 0.027$, respectively). For both years, attribute sampling was ranked highest among this group, with classical variables sampling methods being ranked as the least important sampling topic. The increasing use of software to do sampling makes this topic less classroom intensive, which would make some professors feel the topic is less important and choose to spend less class time on the topic. With many auditing textbooks now on the market including ACL auditing software (which includes sampling modules) with the textbook, the mechanics of teaching statistical sampling are greatly simplified.

Fraud was viewed as a much more important topic in 2005 that it was in 2000. The mean response for fraud awareness in 2005 is 4.71, which is tied for the fifth highest ranked topic in 2005, and is a very significant increase over the 2000 survey ($p = 0.000$). The topic of fraud techniques reported an increase between 2000 and 2005 that was also significant ($p = 0.015$). The results indicate professors believe it is extremely important for students to gain an awareness of fraud. This view is supported by Arens and Elder (2006) in stating that the auditing environment demands students have a greater understanding of fraud risk. However, professors believe less time should be spent on studying fraud techniques. Since the number of courses devoted entirely or substantially to fraud are increasing (Johnson *et al.*, 2003), it appears many professors believe that learning fraud techniques is a specialized topic that should be covered in depth in a separate fraud examination course rather than the first auditing course. Also, the increasing importance of this topic is in keeping with the direction of new authoritative auditing standards. The Auditing Standards Board of the AICPA

issued a new USA auditing standard on fraud (AU §316) that became effective in 2002 and the International Auditing and Assurance Standards Board of IFAC issued a new fraud standard in 2004 (ISA 240). Both of these standards place additional responsibilities on auditors.

IT auditing is considered much less important in 2005 than in 2000. Both the topics of information systems auditing and computer auditing techniques show significant decreases in importance between 2000 and 2005 ($p = 0.000$ and $p = 0.000$, respectively). Again, this change appears to be a result of professors moving the topic out of the first auditing course because more schools are creating separate IT auditing classes. This is consistent with the findings of Johnson *et al.* (2003) where it was reported that significantly fewer informational technology applications are included in the first auditing class and are more likely to be covered in advanced classes.

Topics grouped in the other topics category have no common thread. However, there are some interesting changes between the two surveys for some of these topics. Professional ethics was highly ranked in both surveys. It was the eighth most important topic in 2000 and tenth most important in 2005. The legal liability of auditors declined significantly between the two surveys ($p = 0.000$), but was still ranked in the top half of the 41 topics for both years. The study of auditing history was considered the least important topic in the 2000 survey and next to last in 2005 even though there was a significant increase in mean response ($p = 0.005$). Assurance services reported a very significant decline in importance of topics, which was the largest decline of all topics, from a mean response of 3.70 in 2000 to 3.28 in 2005 ($p = 0.000$).

Table VII shows the topics with the largest increases and decreases in importance based on the *t*-statistic and rank order. The five topics with the largest increases between 2000 and 2005 are reports on internal control, fraud awareness, working papers, auditing history, fraud techniques. The five topics with the largest decline in importance are assurance services, information systems auditing, computer auditing techniques, governmental/NGO auditing standards, and legal liability.

Although the results of both surveys do not show large numbers of differences between the surveys, useful conclusions and trends can be identified from the data and the data are more comparable because of common phraseology than was the case with previous studies. The results clearly show that professors rank topics dealing with the theory of auditing significantly higher than topics more related to auditing practice issues. For example, audit risk, materiality, understanding internal control, and financial statement assertions are much more highly rated than tests of controls, substantive tests, working papers, fraud techniques, and sampling. One explanation of this phenomenon is that professors believe the more practice-oriented topics should be later in the educational cycle of a developing audit professional, for example part of employer or professional organization training. Whether the practicing auditors would give different ratings of the topics for a first auditing class than the results provided by academics in this survey should be the subject of further research.

The results of this study also show professors are responsive to changes in the audit environment and are placing more emphasis on the appropriate topics as a result. Since the Sarbanes-Oxley Act requires audits of USA public companies to include an audit of and a report on internal control, professors in the 2005 survey rated the topic "reports on internal control" much higher. In fact, it has the largest increase of any topic between the two surveys.

Que. No.	Topic	Mean response		Difference	Two tailed t-test		Change in rank
		2000 survey	2005 survey		t	p	
<i>Panel A: topics with largest significant increase</i>							
41	Reports on internal control	3.61	4.12	- 0.51	- 6.093	0.000	+12
28	Fraud awareness	4.38	4.71	- 0.33	- 5.616	0.000	+6
13	Working papers	3.82	4.09	- 0.27	- 2.979	0.003	+4
4	Auditing history	2.43	2.68	- 0.24	- 2.825	0.005	+1
29	Fraud techniques	3.74	3.96	- 0.22	- 2.431	0.015	+2
7	Certification requirements	3.31	3.52	- 0.21	- 2.134	0.033	+9
19	Tests of control: revenue cycle	4.02	4.21	- 0.19	- 2.433	0.015	+4
31	Substantive tests: revenue cycle	4.14	4.31	- 0.17	- 2.162	0.031	+3
8	Internal auditing	3.14	3.28	- 0.14	- 1.486	0.138	+3
17	Understanding IC structures	4.71	4.85	- 0.14	- 2.961	0.003	+3
<i>Panel B: topics with largest significant decrease</i>							
38	Assurance services	3.7	3.28	0.41	4.343	0.000	-11
30	Information systems auditing	4.1	3.73	0.38	4.362	0.000	-7
37	Computer auditing techniques	4.13	3.79	0.34	4.108	0.000	-6
9	Gov't/not-for-profit auditing standards	2.83	2.53	0.31	3.007	0.003	-1
3	Legal liability	4.35	4.03	0.3	4.003	0.000	-5
27	Non-statistical sampling	3.65	3.43	0.23	2.577	0.010	-2
26	PPS sampling	3.58	3.36	0.22	2.219	0.027	-2
35	Substantive tests: fin & investment cycle	3.57	3.36	0.21	2.068	0.039	-2
34	Substantive tests: payroll cycle	3.59	3.38	0.21	2.018	0.044	-2
33	Substantive tests: production cycle	3.73	3.53	0.21	2.101	0.036	-1
23	Tests of control: fin&investment cycle	3.5	3.30	0.19	1.919	0.056	-1
25	Classical variables sampling methods	3.28	3.10	0.18	1.755	0.080	-2

Table VII.
Changes in rank of topics
- all respondents

Course characteristics

Tables VIII-XII report information about the characteristics of auditing courses. Table VIII shows the prerequisites of the first course. Both year's surveys show the intermediate financial accounting course was a required prerequisite for the first auditing class while only 30-40 percent of accounting programs require intermediate cost/managerial accounting or accounting information systems. The intermediate cost/managerial course was reported as a required prerequisite by about 30 percent of respondents for both years. The accounting information systems course was a required prerequisite by approximately 40 percent for both years. These results seem unusual since cost/managerial accounting courses are required by nearly a third of respondents yet are only indirectly related to the knowledge needed to conduct audits. Whereas accounting information systems courses are much more directly related to knowledge

	2000 survey		2005 survey	
	Number	Percent	Number	Percent
<i>Prerequisites for first course</i>				
All respondents				
Intermediate financial	181	84	245	88
Intermediate cost/managerial	70	32	86	31
Accounting information sys	78	36	114	41
By country				
Asia – combined				
Intermediate financial	11	79	4	57
Intermediate cost/managerial	3	21	2	29
Accounting information sys	3	21	5	71
Australia				
Intermediate financial	14	58	14	100
Intermediate cost/managerial	7	29	2	14
Accounting information sys	8	33	1	7
Canada				
Intermediate financial	14	82	12	80
Intermediate cost/managerial	6	35	5	33
Accounting information sys	3	18	5	33
Europe – other				
Intermediate financial	10	77	5	83
Intermediate cost/managerial	6	46	5	83
Accounting information sys	4	31	1	17
New Zealand				
Intermediate financial	5	83	4	100
Intermediate cost/managerial	2	33	1	25
Accounting information sys	1	17	2	50
UK				
Intermediate financial	15	83	1	33
Intermediate cost/managerial	5	28	1	33
Accounting information sys	7	39	1	33
USA				
Intermediate financial	112	92	205	90
Intermediate cost/managerial	41	34	70	31
Accounting information sys	52	43	99	43

Table VIII.
Prerequisites of first
auditing course

	2000 survey		2005 survey	
	Number	Percent	Number	Percent
<i>Focus of first auditing course</i>				
All respondents				
External auditing only	204	95	266	96
Internal auditing only	6	3	4	2
Both	5	2	6	2
Missing data	2		35	
Total	217	100	311	100
By country				
Asia – combined				
External auditing only	13	100	7	100
Internal auditing only	0	0	0	0
Both	0	0	0	0
Australia				
External auditing only	24	100	14	100
Internal auditing only	0	0	0	0
Both	0	0	0	0
Canada				
External auditing only	17	100	14	93
Internal auditing only	0	0	0	0
Both	0	0	1	7
Europe – other				
External auditing only	12	92	6	100
Internal auditing only	0	0	0	0
Both	1	8	0	0
New Zealand				
External auditing only	6	100	4	100
Internal auditing only	0	0	0	0
Both	0	0	0	0
UK				
External auditing only	16	89	3	100
Internal auditing only	1	5	0	0
Both	1	6	0	0
USA				
External auditing only	114	93	218	96
Internal auditing only	5	4	4	2
Both	3	3	5	2

Table IX.
Focus of first auditing
course

needed to conduct audits, the course was only a required prerequisite slightly more often than the cost/managerial course.

This study also examined the focus of the first auditing course (external auditing only, internal auditing only, or both) and the emphasis of the first auditing course on auditing theory, auditing practice, or both theory and practice equally. These results are reported in Tables IX and X. In both surveys, the focus of the first auditing course is heavily devoted to external auditing only (95 percent for 2000 to 96 percent for 2005). This result indicates near unanimity among accounting faculties that external auditing is more fundamental to the study of accounting, and if a student desires to study internal auditing, it should be done after first learning external auditing.

	2000 survey		2005 survey	
	Number	Percent	Number	Percent
<i>Emphasis of first auditing course</i>				
All respondents				
Auditing theory	81	38	96	35
Auditing practice	21	10	23	8
Equal theory and practice	113	52	158	57
Missing data	2		34	
Total	217	100	311	100
By country				
Asia – combined				
Auditing theory	5	36	2	29
Auditing practice	2	14	3	43
Equal theory and practice	7	50	2	28
Australia				
Auditing theory	11	46	4	29
Auditing practice	2	8	1	7
Equal theory and practice	11	46	9	64
Canada				
Auditing theory	6	35	5	33
Auditing practice	2	12	1	7
Equal theory and practice	9	53	9	60
Europe – other				
Auditing theory	3	23	0	0
Auditing practice	2	15	3	50
Equal theory and practice	8	62	3	50
New Zealand				
Auditing theory	2	33	3	75
Auditing practice	0	0	0	0
Equal theory and practice	4	67	1	25
UK				
Auditing theory	5	28	1	33
Auditing practice	5	28	1	33
Equal theory and practice	8	44	1	33
USA				
Auditing theory	49	40	81	36
Auditing practice	7	6	14	6
Equal theory and practice	65	54	133	58

Table X.
Emphasis of first
auditing course

The emphasis of the first auditing course moved to a more equal theory and practice balance in 2005. In the 2000 survey, a primary theory emphasis was reported by 38 percent of the respondents compared to 35 percent in 2005, whereas the percent of respondents reporting an equal theory-practice blend went from 52 to 57 percent from 2000 to 2005. Neither survey indicated many first auditing courses emphasize auditing practice.

Table XI reports the required status and level of the first auditing course. Based on both surveys the first auditing class is predominately a required class in the accounting curriculum. The required status was reported as 81 and 88 percent from the two surveys, 2000 and 2005, respectively, and the difference was significant ($\chi^2 = 4.545, p = 0.033$). Also, the first auditing course is nearly always at the undergraduate level. Respondents indicated 97 and 98 percent for 2000 and 2005,

	2000 Survey		2005 Survey	
	Number	Percent	Number	Percent
<i>First auditing course required</i>				
All respondents				
Yes	167	81	243	88
No	40	19	34	12
Missing data	10		34	
Total	217	100	311	100
By country (course required)				
Asia – combined	8	62	7	100
Australia	18	78	11	79
Canada	9	65	9	60
Europe – other combined	10	91	3	50
New Zealand	4	67	3	75
UK	7	41	2	67
USA	109	90	208	91
Level of first auditing course				
All respondents				
Undergraduate only	204	97	246	98
Graduate only	7	3	5	2
Missing	6		60	
Total	217	100	311	100
By country				
Asia – combined				
Undergraduate only	13	100	7	100
Graduate only	0	0	0	0
Australia				
Undergraduate only	24	100	11	79
Graduate only	0	0	0	0
Canada				
Undergraduate only	15	100	13	93
Graduate only	0	0	0	0
Europe – other				
Undergraduate only	8	67	4	67
Graduate only	4	33	1	16
New Zealand				
Undergraduate only	6	100	4	100
Graduate only	0	0	0	0
UK				
Undergraduate only	18	100	2	67
Graduate only	0	0	0	0
USA				
Undergraduate only	118	97	205	91
Graduate only	3	3	4	2

Table XI.
First auditing course
characteristics

respectively, that their first auditing course is at the undergraduate level. This result was not significant ($\chi^2 = 0.796, p = 0.372$).

Table XII reports the required status and level of the second auditing course, if such a course is offered at the respondent's school. Based on both surveys the second auditing class is predominately an elective class in the accounting curriculum and offered at the graduate level. The required status was reported as 42 and 37 percent

	2000 survey		2005 survey	
	Number	Percent	Number	Percent
<i>Second auditing course required</i>				
All respondents				
Yes	49	42	83	37
No	69	58	144	63
No course or missing data	99		84	
Total	217	100	311	100
By country (course required)				
Asia – combined	4	27	4	44
Australia	5	21	3	19
Canada	8	47	4	25
Europe – other combined	5	38	0	0
New Zealand	0	0	0	0
UK	2	11	0	0
USA	24	20	72	28
<i>Level of second auditing course</i>				
All respondents				
Undergraduate only	53	43	75	38
Graduate only	70	57	125	62
No course or missing data	94		111	
Total	217	100	311	100
By country				
Asia – combined				
Undergraduate only	6	60	3	43
Graduate only	4	40	4	57
Australia				
Undergraduate only	2	13	4	33
Graduate only	14	87	7	58
Canada				
Undergraduate only	15	100	11	100
Graduate Only	0	0	0	0
Europe – other				
Undergraduate only	8	67	1	20
Graduate only	4	33	3	60
New Zealand				
Undergraduate only	0	0	1	25
Graduate only	5	100	3	75
UK				
Undergraduate only	5	83	1	100
Graduate only	1	17	0	0
USA				
Undergraduate only	30	46	205	91
Graduate only	36	54	4	2

Table XII.
Second auditing course
characteristics

from the two surveys, 2000 and 2005, respectively, and the difference was not significant ($\chi^2 = 0.809, p = 0.368$). Respondents indicated 57 and 62 percent for 2000 and 2005, respectively, that their second auditing course is at the graduate level. This result was not significant ($\chi^2 = 0.995, p = 0.319$). The results indicate the number of schools offering second (or more) auditing classes is increasing. In the 2000 survey, 54 percent indicated their school offered more than one auditing class while in 2005 the

number increased to 73 percent. This shows that accounting departments are being responsive to the increasing demands placed on auditors by better preparing students to face the demands of the profession.

Limitations

Limitations are associated with any survey-based research. Sample bias must be considered for any survey research and relates to whether the sample respondents are representative of the entire population. Although the response rates in the surveys are comparable to other research and a test for nonresponse bias showed very little effect between responses from the first request and second request, there is still the possibility that nonresponse bias is present.

Other limitations are that the survey instrument used in the 2000 survey was paper based and conventionally mailed to the sample. The 2005 survey was web based and the request to participate in the survey was sent via e-mail. The samples were taken from Hasselback's *Accounting Faculty Directory* and not all accounting programs are included in the directory. Both surveys were written in the English language and for some recipients, English is likely their second or third language. Also, respondents were not allowed to add additional topics to the survey. Any effect these limitations may have on the results is not known.

Summary and conclusion

The purpose of this study is to extend prior research by examining changes taking place in the auditing course between 2000 and 2005. The paper examines the importance of topics covered in the auditing curriculum and identifies significant changes in the topics' importance between the two surveys. This paper also examined the focus and emphasis in the introductory auditing course, and both the required status and level of the first two auditing classes offered at the respondent's university.

The five most important topics identified from the 2005 survey are audit risk, understanding internal control structures, types and sources of evidence, standard audit reports, and financial statement assertions. The five most important topics identified from the 2000 survey are types and sources of evidence, audit risk, standard audit report, materiality, and understanding internal control structures.

The topics with the largest increases in importance between 2000 and 2005 are reports on internal control, fraud awareness, working papers, and auditing history. The five topics with the largest decline in importance are assurance services, information systems auditing, computer auditing techniques, governmental/not-for-profit auditing standards, and legal liability of auditors.

The results of the study found that the first auditing course is nearly always a required course in the accounting curriculum and the most common prerequisite is intermediate financial accounting. Well over 90 percent of the respondents indicated that the first auditing course at their school was focused on external auditing only, but the results were much more divided on the emphasis of the first auditing course showing a sizeable number of courses emphasizing auditing theory while a slightly larger number emphasize an equal theory-practice blend. The results also indicate that the first auditing course usually is a required course in the accounting curriculum and offered at the undergraduate level, while if a school offers a second auditing course it is usually an elective course in the curriculum and offered at the graduate level.

The results of this paper show that professors are making changes in the importance they place on topics included in their auditing classes. In order for auditing classes to remain relevant and to provide the students that will become tomorrow's successful auditing practitioners, auditing professors must continue to reevaluate their auditing courses in light of the changing business environment, requirements placed upon auditors by society, changes in professional auditing standards, current research in auditing, and practitioners' needs.

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Corresponding author

Jack Armitage can be contacted at: jarmitage@mail.unomaha.edu

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