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Challenges to Audit Education for the 21st Century: A Survey of Curricula, Course Content, and Delivery Methods

The 2000–2001 Auditing Section Education Committee
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ABSTRACT: This paper reports the results of a survey of auditing and assurance courses in the U.S. and several other countries conducted during 2000–2001. The survey, commissioned by the Auditing Section of the American Accounting Association, yielded data on a total of 285 auditing and assurance courses taught at 188 colleges and universities in the United States, Canada, and several other countries. The syllabi data were analyzed on a number of dimensions and the results compared to two prior surveys of auditing courses (Frakes 1987; Groomer and Heintz 1994).

Our findings document substantial changes in content (e.g., new or expanded coverage of fraud, information technology, and assurance services) and pedagogy (e.g., increased use of team projects, student presentations, cases, and the Internet) in both introductory and advanced auditing courses over the past several years. These changes are discussed in the context of events that significantly impacted auditing education and practice from the late 1980s through the end of the 1990s.

Data Availability: Course-level syllabi data that do not indicate the identity or institutional affiliation of individual auditing faculty are available from the authors.

INTRODUCTION

The 1990s were a decade of significant change in the auditing profession. At the beginning of the 21st century, investors and other stakeholders in an increasingly global capital market are demanding that companies provide accurate and relevant performance data in real time. In connection with these changes, the scope of the financial audit and the role of the independent auditor have expanded. In addition to attesting to the fairness of historical financial statements in accordance with prescribed accounting principles, the independent auditor now includes consideration of the client's performance, validity, and risk management of business processes in assessing overall engagement risk (Elliott 1998).

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In order to keep pace with these fundamental changes in the market for financial information, calls for significant change in accounting and auditing education have come from the accounting profession (e.g., Arthur Andersen et al. 1989; Elliott 1997) and academia (e.g., Accounting Education Change Commission [AECC] 1990; Williams 1993; Albrecht and Sack 2000). These changes include taking a broader, less structured, and less technical approach to accounting and auditing in the classroom, as well as integrating information technology into the curriculum, both as an instructional vehicle and as a tool to enhance students' research and communication skills.

Another significant change impacting accounting and auditing education in the United States is the number of states that have adopted a 150-hour education requirement for the licensing of certified public accountants. Prior to 1990, only two states, Florida and Hawaii, had 150-hour requirements in effect. As of 2002, that number has grown to 38 states plus the District of Columbia, and nine additional states have enacted the requirement with a future effective date. This change has led to widespread redesign of accounting curricula across the country.

To determine the impact of these changes on auditing education, we collected a large sample of auditing course syllabi, performed content analysis on the syllabi, and compared our results to those of two similar prior studies (Frakes 1987; Groomer and Heintz 1994). Frakes (1987) focused on the content and delivery of 233 undergraduate auditing courses in the late 1980s. Groomer and Heintz (1994) reported on 196 advanced auditing courses at the undergraduate and graduate levels in the early 1990s. As part of our analysis, we identified nine distinct auditing curriculum models among the institutions in the sample. These models range from a single financial auditing course at the undergraduate level to several specialized auditing courses at the graduate level.

In comparison with earlier audit course surveys, we found significant changes in both the content and delivery of audit education. Specifically, we documented an expansion in the coverage of fraud and technology-related topics in the introductory auditing course. In advanced auditing courses, we found increased coverage of information technology, including computer-assisted audit tools and techniques (CAATs), as well as expanded coverage of internal control concepts. We also observed the addition of more contemporary topics, such as assurance services, in both introductory and advanced auditing courses. The primary changes in pedagogy we noted include increased use of team projects, student presentations, cases, and use of the Internet for student research. These and other issues are discussed and analyzed in the context of the rapidly changing audit and assurance education environment.

The remainder of the paper is organized as follows. Prior literature addressing the content of auditing courses is reviewed in the next section to provide a context and motivation for the current study. This is followed by a brief description of the survey methodology and the data collection process. Next, we describe the sample demographics, the basic data analysis, and a number of comparisons between the current survey results and the results of previous studies. The final section includes a discussion of the study's limitations, our conclusions, and the implications of the results for the future of audit education and practice.

BACKGROUND AND LITERATURE REVIEW

In 1989, the eight largest international accounting firms at that time issued a "White Paper" that discussed the core competencies needed by entry-level accountants (Arthur Andersen et al. 1989). The paper called for significant changes in the university-level curriculum to address perceived deficiencies in accounting education. In 1990, the Accounting Education Change Commission (AECC) published its first Position Statement (AECC 1990). The statement discussed the objectives of accounting education, including the skills and knowledge required to become successful accountants, and how accounting education must change to address the new demands of the accounting profession. Williams (1993) outlined some developments that necessitated reform of the accounting curriculum, such as the increased complexity of accounting practice, calls for greater accountability,

and the pervasive impact of technology on the accounting profession. He described a traditional accounting curriculum and illustrated how some schools that had received AECC grant funding were changing their curricula to address the current accounting environment. In reflecting on the impact of accounting curriculum changes during the 1990s, Albrecht and Sack (2000) note that while some accounting programs have changed, much more needs to be done for accounting to remain a viable, independent program within schools of business in the future.

This literature called for broad changes in the accounting curriculum so that entry-level accountants would possess the skill set necessary to succeed in a changing accounting environment. Core competencies often mentioned included analytical skills, critical-thinking and decision-making skills, teamwork skills, and communications skills. Although none of these articles specifically called for changes in auditing course(s), auditors in particular were expected to possess mastery of these higher-order skills. For example, auditors typically work in teams, analyze evidence, and think critically about the evidence they gather, make unstructured decisions under uncertainty, and must then communicate their findings. A greater emphasis on these core competencies should be evident in auditing courses if academics have indeed responded to these calls for a revised accounting curriculum.

In addition to these calls for change from the academic community, audit education has come under pressure to reflect the changing demands of audit practice. For example, Elliot (1997) noted that accounting firms were expanding their role from traditional auditing services to assurance services in order to secure future revenue opportunities. He identified a number of capabilities needed for this expanded role, including greater knowledge of information technology and risk assessment, and improvements in the auditor's ability to detect fraud and evaluate going-concern problems. Eilifsen et al. (2001) conducted a field study that illustrates one of the new business-risk-based audit approaches and how it differs from the traditional audit approach. Similarly, Shelton et al. (2001) studied accounting firms' fraud risk assessment capabilities and noted that the ability to assess fraud risk effectively requires many of the expanded auditor capabilities identified by Elliot.

Thus, the central issue this survey addresses is the extent to which current auditing courses reflect the changes called for in critiques of the accounting curriculum from both academic and professional sources. Specifically, we examined current auditing course syllabi and determined how emerging professional issues, critical thinking, oral and written communication, information technology, and unstructured problem-solving skills have been integrated into auditing education during the 1990s, as compared to earlier surveys of auditing course pedagogy and content (Frakes 1987; Groomer and Heintz 1994).

DATA COLLECTION

Course and demographic data were obtained directly by email from auditing faculty and from school World Wide Web (Web) sites rather than by mailed requests to department chairs as in prior surveys. An initial request for auditing course syllabi was emailed to the entire AAA Auditing Section membership (approximately 1,600). Members were asked to send (electronically or in paper form) copies of syllabi for all auditing and assurance courses they taught.

One hundred forty-one replies were received, for an overall response rate of approximately 8.8 percent. After elimination of 26 replies from members who were not then teaching auditing and 20 incomplete or otherwise unusable responses, the initial sample yielded 151 syllabi from 130 faculty members, representing 95 schools.¹ A second request, emailed approximately three weeks later, and

¹ Many survey recipients returned syllabi for more than one auditing course. Additionally, recipients were asked to pass the request for syllabi on to all faculty teaching auditing at their institutions, some of whom (e.g., part-time and adjunct instructors) were not members of the AAA. Accordingly, there is no necessary correspondence among: (1) the number of survey respondents, (2) the number of schools represented, and (3) the total number of syllabi received.

personal contacts by the authors generated an additional 35 syllabi from 25 faculty members at 20 schools. Thus, the total sample from responses to email requests (Phase 1 of the data collection) consisted of 186 course syllabi from 130 individuals teaching audit and assurance courses at 115 different schools.

The low overall response rate in Phase 1 prompted a decision to obtain additional syllabi via a Web search in Phase 2 of the data collection process.² A comprehensive listing of accounting programs was obtained from the electronic version of Hasselback's *1999–2000 Accounting Faculty Directory* maintained on the Rutgers Accounting Web (Hasselback 1999). The only restriction placed on selecting schools from this source was the requirement that all syllabi must be in English. After eliminating the schools represented by respondents to Phase 1, approximately 750 additional institutions with accounting programs remained. These were divided alphabetically into lists of 100–125 and distributed among the authors. Each author performed a Web search for auditing course syllabi within the schools on his/her list.³ Phase 2 yielded an additional 100 syllabi, representing 92 auditing faculty members at 72 institutions.

Demographic characteristics were compared between the original responses and the data obtained directly from the Web. Several differences were noted as follows:

1. A significantly lower proportion of courses were identified as introductory in the original sample than in the Web-based sample (61.2 percent versus 72.8 percent; $p < .01$).
2. A higher proportion of schools represented in the original sample had AACSB-accredited accounting programs compared to schools added to the sample by Web-based data collection (44.3 percent versus 28.8 percent; $p = .03$).
3. A higher proportion of the schools represented in the original sample offered a separate Master's of Accountancy compared to schools added in the Web-based sample (61.7 percent versus 45.2 percent; $p = .03$).
4. A higher proportion of schools in the additional Web-based sample offered only one auditing course compared to schools in the original sample (45.2 percent versus 22.6 percent; $p < .01$).

These differences suggest that our initial email sample may have been subject to self-selection biases. In particular, respondents to the email survey were mainly members of the AAA Auditing Section and thus may possess greater knowledge of current auditing issues than nonmembers. In addition, the email survey generally targeted faculty at larger institutions, where greater resources may allow more advanced course offerings. As such, our results may not be directly comparable to those reported by Frakes (1987), whose sample included a higher percentage of smaller schools.

Additionally, although significant efforts were made to ensure a representative sample, the course syllabi included in the final sample, and the schools and instructors represented therein, were gathered on an availability basis. Thus, generalizations to the larger population of auditing courses should be made with caution. A summary of the data collection statistics is shown in Table 1, Panel A.

Each syllabus was analyzed for content on the following dimensions: level of course (introductory or advanced), type of course (Financial Statement Auditing, Internal Auditing, Information Systems Auditing, and Other), topical content, basis for grading, teaching methods and pedagogies used, and textbooks and other resource materials used (e.g., readings, cases, professional standards, professional examination review manuals, etc.). From these criteria, six categories of courses were derived. Each category and its corresponding frequency in the sample are shown in Panel B of Table 1.

Twenty-four syllabi from the Web-based sample were discarded due to incomplete or missing information. In addition, the sample included three syllabi from courses with highly customized

² The initial survey response rate is biased downward due to the fact that many members of the AAA Auditing Section do not regularly teach auditing courses. Nonetheless, to avoid potential limitations to the data analysis and the generalizability of our findings, we decided to expand our sample to include syllabi publicly available on the Web.

³ The Web search methodologies utilized in Phase 2 differed among the authors. Some used one or more commercial Web search engines (e.g., Google, Alta Vista) to search for Web-based syllabi using a keyword approach. Others searched college or university Web sites directly for syllabi posted online.

TABLE 1
Sample Characteristics

Panel A: Response Statistics for Data Collection Phases

	Schools		Faculty		Courses	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
Phase 1: Email Survey	115	61.4	130	58.7	186	65.0
Phase 2: Web Search	73	38.6	92	41.3	100	35.0
Totals	<u>188</u>	<u>100.0</u>	<u>222</u>	<u>100.0</u>	<u>286</u>	<u>100.0</u>

Panel B: Courses by Type

Type of Course	Sample	Discarded ^a	Analyzed
Introductory Financial Auditing	191	16	175
Advanced Financial Auditing (stand-alone course)	36	7	29
Advanced Financial Auditing (second course in sequence)	28	1	27
Internal Auditing	17	0	17
Information Systems Auditing	11	0	11
Other ^b	3	0	—
Total	<u>286</u>	<u>24</u>	<u>262</u>

^a Discarded due to missing or incomplete information.

^b Includes two Fraud/Forensic Auditing courses and one course in Risk Analysis; not analyzed due to small sample size and lack of comparability with prior surveys.

content (two fraud/forensic auditing courses and one risk analysis course). These three courses were eliminated because of sample size limitations and comparability issues. The final sample for analysis therefore consisted of 262 syllabi, representing five distinct categories of audit course types.

For each of the five course categories remaining in the sample (the introductory course and four different types of advanced courses), a comprehensive list of syllabi content was developed and refined throughout the data coding process. Two authors and one graduate assistant (who was unaware of the particulars of the study) independently coded each syllabus based on the content lists, adding new categories when necessary.⁴

DATA ANALYSIS

Sample Demographics

The final sample included 262 auditing course syllabi from 188 colleges and universities, including 132 publicly supported U.S. schools, 47 private U.S. schools, and nine non-U.S. schools.⁵ The institutions represented in the final sample cover a substantial range in terms of enrollment, accreditation status, and other measures. Summary demographics of the sample are shown in Table 2.

The overall demographic data allow for a number of high-level comparisons between the cur-

⁴ We acknowledge the possibility of bias resulting from the use of authors as coders, but extensive efforts were made to be as objective as possible in determining topical coverage in each course. Also, because the coding process did require a degree of judgment, it was necessary for the coders to have significant experience teaching auditing. This precluded the use of coders who were completely blind to the study's purpose and/or coding criteria. To ensure that the graduate assistant was applying the coding criteria appropriately, one of the authors reviewed her coding and independently recoded a sample of syllabi. Discrepancies were few and were resolved through discussion. In addition, each of the coding authors independently reviewed the other's coding, and all discrepancies were resolved to each coder's satisfaction by one or more additional authors.

⁵ The nine non-U.S. institutions included three each from Australia and Canada, two from New Zealand, and one from Singapore.

TABLE 2
Sample Demographics

	Total Responses		Number of Audit/Assurance Courses Offered					
	Frequency	Percent ^a	One Course		Two Courses		Three or More Courses	
			Frequency	Percent ^b	Frequency	Percent ^b	Frequency	Percent ^b
Panel A: Type of Institution								
U.S.—Public	132	70.2	35	26.5	45	34.1	52	39.4
U.S.—Private	47	25.0	20	42.6	18	38.3	9	19.1
Non—U.S.	9	4.8	4	44.4	2	22.2	3	33.3
	188	100.0	59		65		64	
Panel B: AACSB Accreditation								
Business School								
Yes	131	69.7	29	22.1	49	37.4	53	40.5
No	57	30.3	30	52.6	16	28.1	11	19.3
Accounting Program								
Yes	72	38.3	11	15.3	23	31.9	38	52.8
No	116	61.7	48	41.4	42	36.2	26	22.4
Panel C: Total Enrollment								
5,000 or fewer	41	21.8	20	48.8	18	43.9	3	7.3
5,001–10,000	37	19.7	16	43.2	14	37.8	7	18.9
10,001–15,000	30	16.0	6	20.0	12	40.0	12	40.0
15,001–20,000	28	14.9	8	28.6	10	35.7	10	35.7
20,001–25,000	19	10.1	3	15.8	4	21.1	12	63.2
More than 25,000	33	17.5	6	18.2	7	21.2	20	60.6
		100.0						

(continued on next page)

TABLE 2 (continued)
Sample Demographics

Panel D: Business School Enrollment									
500 or fewer	24	12.8	9	37.5	14	58.3	1	4.2	
501-1,000	29	15.4	10	34.5	14	48.3	5	17.2	
1,001-1,500	30	16.0	9	30.0	9	30.0	12	40.0	
1,501-2,000	16	8.5	7	43.8	4	25.0	5	31.3	
2,001-2,500	22	11.7	4	18.2	8	36.4	10	45.5	
More than 2,500	45	23.9	6	13.3	11	24.4	28	62.2	
Data not available	22	11.7	14	63.6	5	22.7	3	13.6	
Panel E: Size of Accounting Faculty									
5 or fewer	31	16.5	20	64.5	9	29.0	2	6.5	
6 to 10	55	29.3	20	36.4	25	45.5	10	18.2	
11 to 15	48	25.5	12	25.0	19	39.6	17	35.4	
16 to 20	27	14.4	4	14.8	6	22.2	17	63.0	
21 to 25	17	9.0	1	5.9	5	29.4	11	64.7	
More than 25	9	4.8	1	11.1	1	11.1	7	77.8	
Data not available	1	0.5	1	100.0	0	0.0	0	0.0	
Panel F: Types of Degrees Offered									
4-year Bachelor degree only ^c	41	21.8 ^f	58	31.5	62	33.7	64	34.8	
4-year Bachelor degree	184	97.9 ^f	31	75.6	8	19.5	2	4.9	
5-year combined degree ^d	35	18.6 ^f	2	5.7	19	54.3	14	40.0	
Separate Master of Accountancy degree ^e	104	55.3 ^f	17	16.3	36	34.6	51	49.0	
M.B.A. with Accounting Emphasis	80	42.6 ^f	17	21.3	29	36.3	34	42.5	
Ph.D.	44	23.4 ^f	10	22.7	10	22.7	24	54.5	
Other	35	18.6 ^f	3	8.6	13	37.1	19	54.3	

^a Percent by column.

^b Percent by row.

^c Institutions offering only baccalaureate degrees.

^d Integrated bachelor/master degree programs.

^e Independent (nonintegrated) master degree.

^f Percentage of schools represented in sample.

rent sample and the data reported in Frakes (1987) and Groomer and Heintz (1994). First, public institutions make up just over 70 percent of the current sample (73.7 percent counting only U.S. schools), compared to 71 percent reported by Frakes and 81 percent reported by Groomer and Heintz. Second, nearly 22 percent of the schools in the current sample had enrollments of 5,000 or fewer students, compared to 27 percent reported by Frakes and only 6 percent reported by Groomer and Heintz. The substantial difference in school size distribution between the Groomer and Heintz survey and the Frakes survey is due to the focus on advanced auditing courses in Groomer and Heintz. Because advanced courses are more likely to be offered by large public institutions, their sample was biased toward larger institutions while Frakes's sample, which was oriented toward introductory courses, was biased toward smaller schools.

The overall sample demographic statistics in the current survey lie between those reported by the two earlier surveys, reflecting this survey's broader focus on both introductory and advanced courses. Similar comparisons are evident in the business school enrollments and accounting faculty size demographics, with the current sample reflecting a middle ground between the generally smaller schools and faculties captured in Frakes's sample and the generally larger schools and faculties reported by Groomer and Heintz.

Other demographic relationships in the current study are consistent with those reported by Frakes (1987) and Groomer and Heintz (1994). Most notably, larger, publicly supported, and AACSB-accredited schools are more likely to offer three or more auditing courses, a pattern also reported by Groomer and Heintz. A slightly smaller percentage of business schools in the current study were accredited compared to those in Groomer and Heintz (69.7 percent versus 71.9 percent), due to the much greater proportion of small schools in the current sample. However, the proportion of accredited accounting programs in the current study (38.3 percent) was significantly greater than that reported by Groomer and Heintz (28.1 percent) and by Frakes (19.3 percent), reflecting continuing growth in the number of accounting programs receiving separate AACSB accreditation over the past two decades.

Finally, the number and types of accounting degrees offered by schools in the current sample are similar to those reported in the two earlier surveys, with the exception of five-year master's degree programs in accounting. Over 55 percent of schools in the current survey offer a Master's of Accountancy degree in a separate (nonintegrated) fifth-year program, compared to 43.4 percent reported by Groomer and Heintz (1994) and 37.7 percent by Frakes (1987). The same increasing trend is evident in the percentage of schools offering an M.B.A. with an accounting emphasis. These increases are likely due, at least in part, to the significant number of states that implemented 150-hour CPA examination candidacy requirements in the late 1990s.

The overall demographic profiles of schools and accounting programs in the current survey are consistent with those reported in earlier studies. Thus, the current sample appears to be a reasonable representation of the population of schools and accounting programs despite the different sampling methodologies employed between the current study and its predecessors.

Curricular Models and Course Delivery Options

The advent of the 150-hour degree requirement has led to the widespread redesign of accounting curricula in the United States. Many institutions have moved some upper-level accounting courses that have traditionally been viewed as "CPA preparation" courses (e.g., advanced financial accounting and cost accounting) to the fifth year of the degree program. Additionally, some institutions now offer substantially identical or similar auditing courses at both the undergraduate and the graduate levels to accommodate a wider variety of degree paths.

In order to determine the extent to which these changes have affected the sequence, level, and content of courses, nine distinct auditing curriculum models were developed by examining course catalogs from the institutions included in the survey. The nine models are characterized as shown in

Panel A of Table 3. The distribution of programs following each model is also shown in Panel A of Table 3. Course catalogs from schools represented in the sample were consulted to determine at what level (undergraduate, graduate, or both) auditing courses were offered.⁶ From this analysis, five different course delivery methods were also identified. These are shown in Panel B of Table 3.

It should be noted that many of the curriculum model coding decisions were at least partially subjective, usually due to incomplete data or lack of clarity in course catalog descriptions. For example, it was not always evident from analyzing an institution's course catalog whether a two-course financial auditing sequence was: (1) an introductory course taught over two terms, or (2) an introductory financial course followed by an advanced financial course, which might use different

TABLE 3
Auditing Curriculum Models and Delivery Level
(n = 188)

Panel A: Curriculum Models^a

<u>Model</u>	<u>Frequency</u>	<u>Percent</u>
1. One introductory financial course only	59	31.4
2. A two-semester (or two-quarter) introductory financial course only	13	6.9
3. An introductory financial course, with financial or generic ^b advanced courses available	49	26.0
4. An introductory financial course, with specialized advanced courses (other than financial) available	11	5.9
5. An introductory financial course, with both financial and specialized advanced courses available	38	20.2
6. A generic introductory course, with specialized advanced courses available	7	3.7
7. Auditing taught as part of an integrated accounting curriculum	4	2.1
8. One introductory course, either financial or specialized (elected by student)	5	2.7
9. One financial course at the advanced level only	2	1.1
	188	100.0

Panel B: Course Delivery Methods

<u>Delivery Methods</u>	<u>Frequency</u>	<u>Percent</u>
One course, undergraduate level	59	31.4
Multiple courses, all undergraduate level	14	7.4
Multiple courses, all graduate level	1	0.5
Undergraduate introductory course, advanced graduate courses	64	34.1
Undergraduate introductory course, advanced undergraduate and graduate courses	50	26.6
	188	100.0

^a All individual courses are one semester or one quarter in duration, unless otherwise noted.

^b Courses that include substantial coverage of more than one audit approach (financial, operational, compliance, or information systems) are termed "generic" (Groomer and Heintz 1994).

⁶ Curriculum model 3 (introductory financial course, with financial or generic advanced courses) was the most common course delivery model in our original sample (27.8 percent of responding schools), followed by model 1 (introductory financial course only, 22.6 percent) and model 5 (introductory financial course with both financial and specialized advanced courses available, 20.9 percent). For the schools added in the Web-based data, model 1 was the most common delivery model (45.2 percent), followed by model 3 (23.3 percent), then by model 5 (17.8 percent). These differences in proportions are statistically significant ($p = .05$) and again highlight the greater representation of smaller, non-AACSB-accredited schools in the Web-based sample.

materials or a different pedagogical approach. Only in cases where both course syllabi were included in the sample can the model codings be considered reliable. As a result, using course catalog descriptions instead of actual syllabi to develop auditing curriculum models probably understates the number of two-semester introductory courses and overstates the number of introductory-advanced course sequences in the final sample and the analysis of auditing curriculum models.

Three findings regarding the curriculum models merit further discussion. First, a large percentage of schools in the sample offer a single undergraduate financial auditing course and no advanced auditing courses. As previously noted, the demographic data indicates that schools with smaller enrollments and accounting faculties, and schools that are not AACSB-accredited, are less likely to offer advanced courses. Second, the sample included 12 programs that allow students to take internal auditing as their first auditing course. Six of these 12 offered an Institute of Internal Auditors (IIA) endorsed internal auditing program (IIA 2001). Finally, more than 90 percent of accounting curricula continue to require an introductory financial auditing course at the undergraduate level. This suggests that auditing is viewed as a significant course in the curriculum for all accounting majors, even those with no current intention to sit for the CPA examination or pursue a career in public accounting. Additionally, for those schools that do offer advanced auditing courses, maintaining an undergraduate financial auditing course as a prerequisite may allow greater flexibility in course offerings at the advanced and/or graduate course level.

Panel B of Table 3 indicates that 65 schools in the current sample (50.4 percent of the 129 schools with advanced auditing courses) offer advanced courses at the graduate level only. Groomer and Heintz (1994) reported that 58 percent of the advanced courses in their study were offered only to graduate students. The decline in graduate-only advanced auditing courses is most likely due to an increase in the cross-listing of these courses so that they are available to both undergraduate and graduate accounting students. As noted previously, many accounting programs have increased the flexibility of their accounting programs to accommodate the greater diversity in students' accounting course backgrounds with the advent of 150-hour accounting degree requirements.

COURSE CONTENT ANALYSIS

Data Analysis Methodology

The frequency of topic listings was used as a proxy for the relative importance of topics across courses. Note that a frequency approach to content analysis raises the possibility of measurement error, in that some instructors may not present topics as a sequence of separate concepts, but rather integrate them throughout the course material. For example, while the topic of "Professional Ethics" may not be listed on the syllabus for a given class period or referenced in a specific chapter in the textbook, ethical issues may be reinforced throughout the course in terms of cases, homework assignments, and additional readings. In such cases, the nature and extent of such integration may not be reflected in syllabus data. A second concern is that the actual scope, delivery methods, and grading policies of auditing courses may be at variance with the syllabus descriptions of these items. For these reasons, course syllabi should be viewed as imperfect proxies of actual course content.⁷

⁷ Groomer and Heintz (1994) addressed this issue by reporting an additional statistic, the approximate percentage of class time spent on each topic, in their content analyses. However, their analysis revealed a number of cases where there was little correspondence between the reported percentage coverage of a topic and the percentage of class time devoted to the same topic. Because of the difficulties in reconciling the extent of coverage with an approximation of class time spent on each topic, and the substantial additional effort involved in computing these statistics, only topical coverage percentages are reported in this paper.

Introductory Auditing Courses

One hundred seventy-five courses (66.8 percent of the final sample) were identified as introductory. These courses were analyzed for topical content and types of course materials used. Panel A of Table 4 lists topics covered by at least 5 percent of the introductory course syllabi.⁸

Basic Analyses

An examination of the most frequently covered topics (listed in 90 percent or more of the syllabi) indicates a heavy emphasis on audit planning, particularly in terms of the audit risk model and materiality considerations. Other topics covered by at least 90 percent of the introductory courses in the sample include the audit environment, internal control, audit evidence, the audit process, audit reports, and professional standards.

Panel A of Table 4 provides some additional insights into the relative importance placed on various topics in the introductory course. For example, the most widely covered transaction cycle is the revenue cycle, included in nearly 83 percent of sample syllabi. The purchasing (expenditure) cycle is the next most widely covered at nearly 61 percent, with the remaining transaction cycles receiving substantially less coverage. The legal environment of auditing, audit sampling, and end-of-audit procedures are other common topics covered by at least 50 percent of introductory courses.

Emerging issues and less traditional topics exhibit a wide variation in coverage in the introductory course. For example, over 50 percent of the introductory course syllabi report coverage of assurance services. However, the extent and depth of the coverage cannot be determined from the data. Nonetheless, this degree of inclusion appears to reflect the significant emphasis placed on assurance services by the AICPA since their introduction in the mid-1990s. Likewise, a substantial proportion (43.7 percent) of introductory courses list coverage of fraud, most likely as a consequence of the more stringent and detailed consideration of fraud required by Statement on Auditing Standards (SAS) No. 82 issued in 1997.

On the other hand, the introductory course includes relatively less coverage of the impact of information technology on the audit process. Sixty-three percent of introductory courses include some general coverage of audit technology, but specific technology applications are listed in significantly fewer courses. For example, computer-assisted audit tools and techniques (CAATs) are covered in fewer than 21 percent of introductory courses. Other recent information technology topics in auditing receive even less coverage.⁹ Similarly, enterprise-level and process-oriented audit approaches, such as Business Measurement Process (BMP) or "strategic systems" auditing (Bell et al. 1997), were listed in 6.9 percent of introductory courses, even though many large audit firms re-oriented their audit planning toward a broader "business risk" view during the late 1990s.¹⁰

Panels B and C of Table 4 illustrate the large increase in the breadth and diversity of text materials used in the introductory course since the mid 1980s. Frakes (1987) identified ten auditing

⁸ Many of these descriptions were straightforward (e.g., "Internal Control" was generally listed as such). Other topics required some interpretation by the coders (e.g., the topic "Accountants' Legal Liability" may have been categorized under "Legal Environment of Auditing"). Criteria for those items requiring interpretation were agreed upon by the coders and other authors. Additionally, some syllabi did not contain topic descriptions; rather, they referenced coverage in specific chapters of textbooks. The coders obtained copies of each textbook and/or referenced online materials related to each textbook to determine the topic coverage of each chapter, and coded those syllabi accordingly. As noted previously, the resulting coding of topics was reconciled to each coder's satisfaction.

⁹ Two specific technology-related audit topics that have received considerable attention recently in the professional literature are continuous online auditing and e-commerce assurance. These topics were each listed in 6 of the 175 introductory course syllabi (3.4 percent). Other high-profile technology topics with important auditing implications (e.g., enterprise software and outsourcing of the corporate IT function) received little or no coverage in introductory auditing courses.

¹⁰ We recognize that some instructors may choose to integrate broad topics, such as fraud and BMP auditing, throughout the introductory course and thus not list these topics separately in their syllabi. If so, the reported coverage frequencies in Table 4 understate the actual degree of coverage of these topics in the introductory auditing course.

TABLE 4
Introductory Auditing Course Content Analysis

Panel A: Topical Coverage (Topics included in at least 5 percent of sample syllabi; n = 175)

<u>Topic</u>	<u>Frequency</u>	<u>Percent</u>
Audit Role and Environment	169	96.6
Planning: Audit Risk	169	96.6
Internal Controls	168	96.0
Planning: Audit Evidence	166	94.9
Audit Process	164	93.7
Planning: Materiality	164	93.7
Audit Reports	162	92.6
Regulations (GAAS)	161	92.0
Planning (General)	150	85.7
Ethics (Includes Independence)	147	84.0
Planning: Analytical Procedures	147	84.0
Planning: Audit Programs	144	82.3
Substantive Testing: Revenue Cycle	144	82.3
Legal Environment	136	77.7
Completing the Audit	135	77.1
Sampling: Attribute	116	66.3
Information Systems Auditing (General)	111	63.4
Substantive Testing: Purchasing Cycle	106	60.6
Sampling: Substantive (Classical, DUS, etc.)	102	58.3
Sampling: General	101	57.7
Assurance Services	89	50.9
Other Reporting	85	48.6
Fraud	74	42.3
Planning: Business Risk	66	37.7
Substantive Testing: Financing Cycle, Capital	62	35.4
SEC Issues	59	33.7
Substantive Testing: Audit of Cash Balances	52	29.7
Planning: Client Acceptance	51	29.1
Planning: Understanding the Client's Business	50	28.6
Substantive Testing: Investing Cycle, PP&E	47	26.9
Substantive Testing: Payroll Cycle	41	23.4
Computer-Assisted Audit Tools/Techniques	36	20.6
Attestation Standards	31	17.7
Governmental Auditing	25	14.3
Internal Auditing (operational and compliance)	23	13.1
Business Measurement Process (BMP) Auditing	13	7.4
Substantive Testing: Auditing the Income Statement	12	6.8

(continued on next page)

TABLE 4 (continued)

Panel B: Types of Text Materials Used (n = 175)

<u>Text Materials</u>	<u>Frequency</u>	<u>Percent</u>
Standard Auditing Textbooks (see Panel C)	164	93.7
AICPA Standards, GAAS Guides, etc. ^a	46	26.3
Case Books	25	14.3
CPA/CIA Review Materials	14	8.0
Instructor Course Packet	14	8.0
Other Books	13	7.4
KPMG Monograph: <i>Auditing through a Strategic-System Lens</i>	8	4.6
Information Systems Auditing Texts	3	1.7
Assurance Services Texts	3	1.7
Writing Manuals	2	1.1
Nonaudit Texts	2	1.1
Auditing Research Texts	2	1.1
AAA Materials	1	0.6
CICA Materials	1	0.6
Other AICPA Materials	1	0.6
Software/Systems Manuals	1	0.6
Auditing Theory Texts	1	0.6

Panel C: Standard Auditing Textbooks Used (n = 164)

<u>Textbook</u>	<u>Frequency</u>	<u>Percent</u>
Arens et al., U.S. edition	36	22.0
Arens et al., non-U.S. editions	3	1.8
Gill et al.	3	1.8
Guy et al.	11	6.7
Kell and Boynton	7	4.3
Kiger and Scheiner	4	2.4
Knechel	6	3.7
Konrath	14	8.5
Messier	25	15.3
O'Reilly et al. (<i>Montgomery's Auditing</i>)	1	0.6
Pany and Whittington	9	5.5
Ricchiute	3	1.8
Rittenberg and Schwieger	7	4.3
Robertson and Louwers	20	12.2
Robertson and Smieliauskas	2	1.2
Taylor and Glezen	3	1.8
Whittington and Pany	10	6.1
	<u>164</u>	<u>100.0</u>

^a Includes applicable non-U.S. standards for non-U.S. courses.

textbooks, five of which were used by 82 percent of his respondents. In the current study, by contrast, respondents listed more than 15 specific auditing texts, with the four most common U.S. auditing textbooks comprising approximately 57 percent of identifiable responses. More importantly, current respondents report widespread use of additional materials beyond the primary textbook. These materials range from traditional professional judgment and legal liability cases to unstructured decision problems, many of which involve ethical issues.

Comparative Analysis of Learning Activities

Frakes (1987) reported the most common learning activities in introductory auditing courses in the 1980s. The top 11 learning activities from Frakes are compared with the 11 most common learning activities from the current data (used in at least 10 percent of the introductory courses in the sample) in Table 5.

Table 5 illustrates some significant pedagogical changes in the introductory auditing course since the 1980s. Most evident are the reported increases in group work and student presentations over this time period. These two techniques have been commonly cited as effective means of improving accounting students' collaboration and communication skills. Thus, this finding suggests that these techniques are now widely used in introductory auditing courses. Additionally, the increased role of technology in the classroom over this time period is evidenced through the current widespread use of instructional videos and Internet-based assignments. At the same time, more traditional activities, such as textbook-based problem solving, manual practice sets, and term papers appear to have decreased in emphasis in the introductory course since the 1980s.

TABLE 5
Most Common Learning Activities in Introductory Auditing Courses:
Comparison between Frakes (1987) and the Current Study

Frakes (1987)		Current Study ^a	
Learning Activity	Percent	Learning Activity	Percent
Textbook	99.0	Textbook	84.5
Exercises/cases from text	88.4	Cases and projects	77.6
AICPA professional standards	70.8	Problems	61.5
Audit cases ^b	50.5	Group work	54.0
Guest speakers	50.5	Student presentations	42.0
Exercises/cases prepared by instructor	43.1	Readings	31.0
Readings	38.4	Videos	27.0
Donated computer software ^c	26.9	AICPA standards (for reference)	20.1
Term papers	24.1	Internet assignments	20.1
Locally developed computer software ^d	20.8	Computer (non-Internet) assignments	16.1
Student presentations	19.9	Guest speakers	13.8

^a Activities listed in at least 10 percent of current sample syllabi.

^b Includes Trueblood cases and manual and computerized audit practice sets.

^c Consists mainly of CPA firm-developed proprietary audit software.

^d Includes adaptations of spreadsheet software for manual practice sets and other instructor-developed applications.

Summary of Introductory Auditing Course Analyses

The preceding analyses of current introductory auditing course syllabi highlight some important changes in both the education environment and the auditing profession between the mid-1980s and 2000. There has been a substantial increase in the quantity and diversity of supporting materials and resources available to instructors, including a number of audit firm-sponsored cases and simulation programs. Additionally, dramatic advances in computing power and information access over this period have provided auditing instructors and students with the ability to obtain and analyze relevant information from electronic sources worldwide.

The results suggest that the introductory auditing course has been somewhat slow to change from a traditional, procedures-oriented financial statement focus to an information quality and process integrity orientation. In addition, the expanded use of supplemental course materials to cover topics such as assurance services and BMP auditing may also reflect a slow pace of change in the auditing textbook market. Perhaps the greatest change can be seen in the area of course pedagogy and delivery, with much greater emphasis currently placed on group work, student presentations, and technology-based activities, as compared to the late 1980s and early 1990s.

Advanced Courses

The topical content of advanced auditing courses was compared, when possible, to similar statistics reported by Groomer and Heintz (1994). The current survey identified four distinct categories of advanced auditing courses. The nature and content of each course type is discussed and compared to Groomer and Heintz's (1994) findings where applicable.¹¹

Information Systems Auditing Courses

The current sample included 11 syllabi for information systems (IS) auditing courses, compared to 36 such courses analyzed by Groomer and Heintz (1994).¹² IS auditing courses make up 12.9 percent of the advanced courses in the current sample, compared to 18.7 percent of the Groomer and Heintz sample. Groomer and Heintz identified nine topics covered in the IS auditing courses in their sample. The nine most frequently covered topics from current IS audit courses (included in at least 2 of the 11 syllabi) are shown in comparative form with the Groomer and Heintz data in Table 6.

Worthy of note are several differences found between the two surveys in the topical content of information systems courses. First, the emphasis on computer-assisted audit tools and techniques (CAATTs) increased significantly from the early 1990s to the present. Over 80 percent of the courses in the current sample include coverage of CAATTs, compared to 36.1 percent of the courses examined by Groomer and Heintz (1994). Second, there is substantially greater coverage of internal controls in the context of information systems in current courses (over 90 percent) compared to those in Groomer and Heintz's sample (50 percent). This increase in coverage may be driven by the greater emphasis placed on electronic controls, particularly preventive controls, in the contemporary information systems environment (Weber 1999). Finally, current IS audit courses reflect topics that did not exist at the time of the prior study, such as assurance services (covered in 9 of the 11 courses) and e-commerce (covered in 6 of the 11 courses). The extensive coverage of assurance services in current courses may reflect the high visibility of two technology-based assurance services, *WebTrust* and *SysTrust*. Both of these services are endorsed by the American Institute of Certified Public Accountants (AICPA) and the Canadian Institute of Chartered Accountants (CICA), and have been widely discussed in the professional and financial press.

¹¹ Given the small number of syllabi in the sample of information systems and internal auditing courses, the generalizations to the larger population of advanced auditing courses with respect to relative coverage of particular topics should be made with caution.

¹² Groomer and Heintz (1994) refer to these as "EDP Auditing" courses.

TABLE 6
Most Common Topics Covered in Information Systems Auditing Courses:
Comparison between Groomer and Heintz (1994) and the Current Study

Groomer and Heintz (n = 36)			Current Study (n = 11)		
Topic	Frequency	Percent	Topic	Frequency	Percent
Application Controls	18	50.0	Internal Controls	10	90.9
General Controls	18	50.0	Assurance Services	9	81.8
Computer Audit Process	17	47.2	Computer-Assisted Audit Tools/Techniques	9	81.8
Computer Audit Techniques	13	36.1	Auditing e-Commerce	6	54.6
Generalized Audit Software	12	33.3	Fraud	4	36.4
Other ^a	10	27.8	Substantive Testing: Revenue Cycle	4	36.4
Systems Analysis and Design	10	27.7	Substantive Testing: Purchasing Cycle	4	36.4
Audit Objectives	9	25.0	Continuous/Online Auditing	3	27.3
Managing the EDP Function	7	19.4	Other ^b	2	18.2

^a Not specified.

^b Includes Business Measurement Process (BMP) Auditing, Audit Risk, and Other Reporting Issues.

Internal Auditing Courses

Both Groomer and Heintz (1994) and the current study include syllabi from internal auditing courses: 19 in Groomer and Heintz (9.8 percent of their sample) and 17 in the current study (19.8 percent of the current sample of advanced courses). Table 7 presents a comparison of the 12 most common topics covered in internal auditing courses as reported by Groomer and Heintz and the 12 most common topics from the current course data.¹³

Several differences between the two internal auditing course data sets warrant discussion. First, a much greater proportion of current internal auditing courses cover statistical sampling techniques compared to those reported by Groomer and Heintz (58.8 percent versus 10.5 percent). This increase may reflect a decline in the number of accounting programs offering statistical audit sampling as a separate course.¹⁴ Additionally, there is substantially increased coverage of CAATs in the current sample of internal auditing courses compared to the Groomer and Heintz sample (58.8 percent versus 21.1 percent). This finding suggests that the increased use and availability of microcomputer-based CAATs, along with a greater technological emphasis in contemporary internal auditing in general, may be driving a more technology-based approach in current internal auditing courses.

Similarly, coverage of internal controls, fraud, and fraud examination (forensic auditing) is also more widespread in the current sample as compared to Groomer and Heintz's (1994) results. These increases likely result from the increased focus on these topics in internal audit practice. Interviewing techniques and interview psychology, two topics related to forensic auditing, are covered in over 70 percent of current internal auditing courses, but are not listed by Groomer and Heintz. At the same

¹³ Other topics covered in at least three current internal auditing courses include: Internal Audit Management; Evidence; Internal Audit Procedures; CAATs; Control Self-Assessment; Internal-External Auditor Relationships; and Environmental/Social Responsibility Audits.

¹⁴ The Groomer and Heintz (1994) sample of advanced auditing courses included six that exclusively covered statistical audit sampling. No such courses were included in the current sample.

TABLE 7
Most Common Topics Covered in Internal Auditing Courses:
Comparison between Groomer and Heintz (1994) and the Current Study

Groomer and Heintz (n = 36)			Current Study (n = 11)		
Topic	Frequency	Percent	Topic	Frequency	Percent
Audit Reports	8	42.1	Internal Audit Standards (includes Ethics)	15	88.2
Field Work	8	42.1	Internal Controls	14	82.4
The Internal Audit Profession	8	42.1	Interviewing Techniques/Psychology	12	70.6
Human Relations	6	31.6	Internal Audit Reports	12	70.6
Employee and Management Fraud	6	31.6	Internal Audit History/Role/Organization	12	70.6
Internal Controls	5	26.3	Operational Audit Processes	12	70.6
EDP Auditing	4	21.1	Fraud	11	64.7
Work Papers	3	15.8	Information Systems Auditing (General)	10	58.8
Staff Selection	3	15.8	Sampling (General)	10	58.8
Statistical Sampling	2	10.5	Sampling: Attribute	9	52.9
Other ^a	2	10.5	Sampling: Substantive	9	52.9
Quality Control	1	5.3	Risk Assessment	9	52.9

^a Not specified.

time, two traditional internal auditing topics included in Groomer and Heintz, workpaper techniques and staff selection, did not appear on any syllabi in the current sample.

The comparative topical coverage percentages in Tables 6 and 7 seem to indicate that most of the listed topics are covered more extensively in current IS and internal auditing courses than in comparable courses from the early 1990s. As noted previously, however, the degree of correspondence between the reported percentage coverage of a topic and the percentage of class time devoted to the same topic as reported by Groomer and Heintz (1994) is unknown.

Advanced Financial Auditing Courses

The current sample included 58 auditing courses that were described as "advanced" either in the syllabus or in the institution's course catalog. These advanced courses, virtually all of which were primarily oriented toward financial auditing, fell into one of two categories: independent "stand-alone" courses (n = 32), or the second half of a two-course sequence (n = 26).¹⁵ The content of these advanced financial courses is shown in Table 8.

Topical coverage in independent advanced financial courses (Panel A of Table 8) is similar to the topical content of introductory courses (see Table 4, Panel A), with four exceptions: assurance services (covered in 62.5 percent of advanced courses versus just over 50 percent of introductory courses); BMP auditing (25.0 percent versus 6.8 percent); audit research (18.8 percent versus 2.3 percent); and international auditing issues (18.8 percent versus 0 percent).

¹⁵ Many advanced auditing courses in this category provide some coverage of internal and/or IS auditing. Although Groomer and Heintz (1994) referred to such courses in their sample as "generic," virtually all of these courses in the current sample were chiefly concerned with financial auditing and thus are referred to as "financial" courses in this paper.

TABLE 8
Topical Coverage in Advanced Financial Auditing Courses

Panel A: Independent Courses^a (n = 32)

(Topics included in at least 10 percent of sample syllabi)

<u>Topic</u>	<u>Frequency</u>	<u>Percent</u>
Planning: Audit Risk	23	71.9
Audit Reports	21	65.6
Internal Controls	21	65.6
Assurance Services	20	62.5
Audit Role and Environment	20	62.5
Regulations (GAAS)	19	59.4
Planning: Materiality	18	56.2
Ethics (Including Independence)	17	53.1
Legal Environment	17	53.1
Planning (General)	17	53.1
Planning: Analytical Procedures	17	53.1
Planning: Audit Evidence	17	53.1
Completing the Audit	16	50.0
Fraud	15	46.9
Substantive Testing: Revenue Cycle	15	46.9
Audit Process	13	40.6
Sampling (General)	12	37.5
Other Reporting	12	37.5
Information Systems Auditing (General)	11	34.4
Planning: Audit Programs	11	34.4
Sampling: Attribute	11	34.4
Sampling: Substantive (Classical, DUS, etc.)	11	34.4
Substantive Testing: Purchasing Cycle	11	34.4
Planning: Business Risk Analysis	9	28.1
Business Measurement Process (BMP) Auditing	8	25.0
Computer-Assisted Audit Tools/Techniques	7	21.9
Internal Auditing (operational and compliance)	7	21.9
Substantive Testing: Financing Cycle	7	21.9
Audit Research	6	18.8
Governmental Auditing	6	18.8
SEC Practice Issues	6	18.8
International Auditing Issues	6	18.8
Substantive Testing: Investing Cycle	5	15.6
Planning: Client Acceptance	4	12.5
Planning: Understanding the Client's Business	4	12.5
Substantive Testing: Payroll Cycle	4	12.5

(continued on next page)

TABLE 8 (continued)

Panel B: Second Half of Two-Course Sequence (n = 26)
(Topics included in at least 10 percent of sample syllabi)

<u>Topic</u>	<u>Frequency</u>	<u>Percent</u>
Fraud	19	73.1
Audit Planning (General)	15	57.7
Audit Risk	15	57.7
Sampling (General)	14	53.9
Sampling: Attribute	14	53.9
Substantive Testing: Revenue Cycle	14	53.9
Substantive Testing: Purchasing Cycle	14	53.9
Internal Controls	13	50.0
Legal Environment	13	50.0
Audit Process	12	46.2
Audit Role and Environment	12	46.2
Planning: Analytical Procedures	12	46.2
Ethics (Including Independence)	11	42.3
Sampling: Substantive	11	42.3
Completing the Audit	11	42.3
Other Reporting	10	38.5
Audit Reports	9	34.6
Information Systems Auditing (General)	9	34.6
Assurance Services	8	30.1
Planning: Materiality	8	30.1
Planning: Evidence	8	30.1
Regulations (GAAS)	7	27.0
Audit Research	6	23.2
Planning: Audit Programs	6	23.2
Business Measurement Process (BMP) Auditing	5	19.2
Computer-Assisted Audit Tools/Techniques	5	19.2
Planning: Client Acceptance Decision	5	19.2
Substantive Testing: Financing Cycle	5	19.2
Substantive Testing: Investing Cycle	5	19.2
Substantive Testing: Cash Balances	5	19.2
Internal Auditing	4	15.4
Planning: Business Risk Analysis	4	15.4
Governmental Auditing	3	11.6
Planning: Understanding Client's Business	3	11.6
International Auditing Issues	3	11.6
Judgment and Decision Making	3	11.6
Career Issues	3	11.6

^a "Stand-alone" courses: i.e., independent of any prior auditing courses in the curriculum.

Given the greater complexity of both the market demand for assurance services and the nature of assurance services, the greater coverage of assurance services in advanced courses is not surprising. Similarly, BMP auditing integrates strategic planning (for both the auditor and the client) into the audit process, while coverage of audit research and international auditing issues introduces audit policy implications to the course. Collectively, these four topics increase both the scope and complexity of auditing, and may thus be considered more appropriate or relevant for inclusion in advanced courses.

In advanced courses that are the second in a two-course sequence (Panel B of Table 8), fraud is included in a substantially higher proportion of second-half courses (73.1 percent) than either independent advanced courses (46.9 percent) or introductory courses (43.7 percent). This difference may be due to time constraints in the auditing curriculum, particularly in the case of introductory courses. In addition, prior to the issuance of SAS No. 82 in 1997, fraud was probably more likely to be covered in advanced auditing courses than in introductory courses.¹⁶

Basis for Grading

The basis for computing student grades in undergraduate and graduate courses in the current sample is shown in comparative form with similar analyses from Groomer and Heintz (1994) in Table 9.¹⁷ Sample sizes from the current data set are reduced because this information was not included in all syllabi.

The proportions of each grading element were remarkably similar between Groomer and Heintz (1994) and the current study for both undergraduate and graduate courses. For undergraduate courses, tests and quizzes continue to count most heavily, comprising 69.6 percent of course grades in both studies. Cases and problems represented the second largest grading item at 16.3 percent (20.1 percent in Groomer and Heintz). Attendance and participation (4.6 percent), homework (4.1 percent), student presentations (1.9 percent), term papers (1.6 percent), and other written assignments (1.9 percent) account for the remainder of undergraduate course grades in the current sample, with Groomer and Heintz reporting comparable statistics for each item except for student presentations.

For graduate courses, tests and quizzes (46.0 percent) also make up the largest proportion of course grades, followed by cases and problems at 25.7 percent. Again, these proportions are not markedly different from those reported by Groomer and Heintz (1994): 42.1 percent and 28.2 percent, respectively. The reduced emphasis on tests and quizzes in graduate courses is offset by increased weight assigned to attendance and participation (10.8 percent), student presentations (5.6 percent), term papers (6.6 percent), and other written assignments (3.5 percent). The only notable differences between the current study and the Groomer and Heintz study with regards to graduate course grade weights are: less weight assigned to term papers (6.6 percent and 15.7 percent, respectively), and the absence of student presentations as a grading component in the Groomer and Heintz study.

Two differences in grading components between the current study and Groomer and Heintz (1994) merit further discussion. First, the reduced weight placed on tests and quizzes in graduate auditing courses compared to undergraduate courses suggests that instructors in graduate courses tend to emphasize less structured assignments and evaluations of student performance. While not particularly surprising, this finding does imply that higher-order student skills (particularly critical thinking and verbal and written communication) may be more fully integrated into the classroom at the graduate level (i.e., in the fifth year). If so, this would be consistent with the intent of many states' 150-hour accounting programs, in which some of the fifth-year education is intended to stress the

¹⁶ Fraud was covered in 31.6 percent of the internal auditing courses analyzed by Groomer and Heintz (1994). Conversely, fraud was not listed among the most important undergraduate auditing topics in Bryan and Smith's (1997) survey of auditing faculty, and only ten of the 223 respondents listed fraud detection as an important issue to the profession.

¹⁷ The Frakes (1997) survey did not report any grading basis statistics.

TABLE 9
Basis for Grading: Weighted Average Percentage of Grading Components
Comparison between Groomer and Heintz (1994) and the Current Study

Grading Component	Groomer and Heintz (1994) ^a	Current Study (Minimum – Maximum) ^b
	n = 46	n = 167
Panel A: Undergraduate Courses		
Tests and Quizzes	69.6	69.6 (15.0 – 100.0)
Cases and Problems	20.1	16.3 (3.0 – 80.0)
Attendance and Participation	5.5	4.6 (2.0 – 50.0)
Homework	2.6	4.1 (2.1 – 46.0)
Other Written Assignments	1.2	1.9 (2.0 – 40.0)
Term Papers	1.1	1.6 (3.8 – 40.0)
Student Presentations	NR	1.9 (3.8 – 35.0)
Panel B: Graduate Courses		
	n = 65	n = 60
Tests and Quizzes	42.1	46.0 (15.0 – 85.0)
Cases and Problems	28.2	25.7 (7.0 – 80.0)
Term Papers	15.7	6.6 (5.0 – 35.0)
Attendance and Participation	8.5	10.8 (1.0 – 50.0)
Other Written Assignments	3.5	3.5 (9.0 – 43.5)
Homework	1.7	1.9 (10.0 – 33.0)
Student Presentations	NR	5.6 (2.0 – 26.0)

^a Weighted average percentages were not reported by Groomer and Heintz (1994); recalculated based upon reported statistics.

^b Minimum and maximum percentage values from syllabi reporting the use of each grading component.
 NR = not reported.
 Columns may not sum to 100 percent due to rounding.

broadening of students' skills beyond technical details and structured problem solving. Second, student presentations are included in a substantial proportion of both undergraduate and graduate courses in the current survey, but were not analyzed by Groomer and Heintz (1994). While the increase may only reflect differences in data collection or presentation between the two studies, student presentations have become a more common classroom activity since the early 1990s. This trend may be fueled by increased faculty expectations of students' verbal communication skills, as well as the widespread availability of computerized presentation tools.

SUMMARY AND IMPLICATIONS FOR AUDITING EDUCATION

The analyses of current auditing course syllabi provide mixed results with respect to the current state of auditing education. On the positive side, there has been a tremendous increase in the pedagogical and technological resources available to auditing instructors and students. Professors have increased the use of cases, group activities, presentations, and writing assignments in response to calls for improvement in communication and problem-solving skills. In addition, there has been an expansion in the coverage of fraud and technology-related topics in response to calls from academia and the profession for greater relevance. At the graduate level, there appears to be less specialization and greater integration of topics since the time of the Groomer and Heintz (1994) study. For example, independent courses in statistical sampling appear to be less common today than in the early 1990s. Instead, an increasing number of advanced courses are incorporating topics such as assurance services, BMP auditing, and the impact of information technology into a broader study of auditing and assurance services.

Despite these advances, the evidence from current course syllabi suggests that change in auditing education is occurring more slowly and less comprehensively than the demands of both academic reformers and recent events affecting the profession would dictate. For example, many schools still offer a single auditing course. Given the expansion of assurance services and the increased knowledge and skills required in the workplace, a single course in auditing arguably cannot offer adequate coverage of auditing in the current marketplace. Of course, programs are subject to funding, staffing, and other limitations, but expanding the auditing curriculum should be a high priority within accounting programs. Additionally, the number of courses that integrate audit technology applications is still in the minority, and only a slight majority of courses incorporate higher-order learning activities such as student presentations.

What do these results suggest for the future direction of auditing education? Given that auditing courses are usually among the last taken in the accounting curriculum, the value of accounting education may be enhanced if the audit and assurance process is presented as part of an integrative capstone experience in the accounting student's educational process, with an emphasis on professional ethics, information quality, and the market-driven nature of assurance services. A more holistic approach to auditing education also would provide a framework for students to understand the tremendous impact that information technology will continue to have on auditing practice as well as on the development of future assurance services. Toward these ends, we encourage faculty to critically assess the structure, content, and methods of their current courses in the context of the results presented herein, and to continue to explore innovative delivery methods and a more integrative approach to teaching auditing and assurance.

Ironically, however, this call for innovation comes at a particularly traumatic time for the auditing profession. Recent events have created a formidable challenge to audit educators and practitioners: how to remain at the cutting edge of new technologies, markets, and services while simultaneously embracing the long-standing professional and ethical foundations of auditing to regain the public's trust in the profession. In response to charges that auditor ineffectiveness or even malfeasance contributed to the highly publicized failures of Enron, WorldCom, Global Crossing, and other public companies, auditing educators need to reflect on how today's curricular and

pedagogical choices might influence the effectiveness of tomorrow's auditors. Should what we teach strictly reflect current practice, with the potential risk of overstating the impact of current events and "trendy" topics? Should we place more emphasis in our courses on the legal and ethical foundations of the audit profession, even if we must trade off by reducing coverage in other areas? Is there a "right" balance between traditional topics and emerging issues? What is the proper role of technology in auditing courses, both as an educational topic and a pedagogical tool?

These questions must be answered to the satisfaction of all stakeholders in auditing education if we are to have continuing relevance in the process. The answers, in turn, will require that auditing faculty actively work with professional organizations, pursue research that addresses real problems facing the profession, and maintain dialogues with leaders and regulators of the profession. If we are successful in these endeavors, then auditing education likely will continue to serve as a force for positive change.

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