
AN IMPORTANCE-EFFECTIVENESS ANALYSIS OF THE CONTEMPORARY AUDITING COURSE

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ABSTRACT

The Sarbanes-Oxley Act, legislation enacted in 2002, increased the prominence and responsibilities of the audit profession. Historically, the profession has urged the academic community to institute changes in the accounting curriculum and specifically to the auditing course to prepare students for entry into the profession. This paper surveys auditing faculty members and obtains their opinions on the importance and effectiveness of topical coverage in the auditing course. Given that the American Accounting Association Audit Section Committee's (2003) analysis of syllabi found that the course content was highly dependent on textbook topics, this research asks auditing educators to assess the effectiveness of the auditing text in developing 63 auditing topics. Nine topics relate specifically to the Sarbanes-Oxley Act. Analysis of the results identifies topics with respect to both the importance and the effectiveness of textbooks in developing these topics. Unlike prior research that focused only on importance, this study, by using effectiveness as well, permits the translation of results into action.

INTRODUCTION

Recent highly publicized business failures have cast doubt on the effectiveness of auditors and have led to a weakening of public trust in the auditing profession. Scandals such as Enron, Worldcom, HealthSouth and other public companies have alarmed the public and attracted the attention of Congress. The Sarbanes-Oxley Act (SOX), legislation enacted in 2002, increases SEC powers to police the profession and provides for greater oversight of reporting practices. It also requires public companies to attest to the effectiveness of their internal controls over financial reporting. SOX also introduced sweeping changes to the institutional structure of the accounting profession, including the establishment of the Public Company Accounting Oversight Board. All these changes potentially impact university auditing courses.

The university accounting curriculum provides students with an understanding of the accounting function and the activities of the accountant in order to prepare them to compete in the contemporary workplace. As part of the accounting curriculum, auditing is viewed as a significant course for all accounting majors, with more than 90 percent of accounting programs requiring an introductory financial auditing course at the undergraduate level (AAA Auditing Section Education Committee, 2003). On numerous occasions surveys of practicing CPAs have reported dissatisfaction with the university auditing course [AICPA, 1978; Martin & Whisant, 1982; and Kanter & Pitman, 1987]. Prompted by these and other studies [American

Accounting Association, 1986; Kullberg et al, 1989; and Albrect & Sack, 2000], accounting practitioners, as well as educators, have taken a number of steps towards addressing meaningful curricula changes. The American Accounting Association (AAA) responded by creating the Accounting Education Change Commission to lead the effort to make meaningful changes in accounting education with the objective to improve accounting curricula so that entrants to the profession possess the skills, knowledge, and aptitude required for success in accounting. These undertakings concluded that, due to the dynamic nature of the profession, auditing educators should strive to constantly examine the content of the auditing course and take the necessary steps to maintain its relevance and effectiveness.

Partly in response to recent accounting scandals, the National Association of State Boards of Accountancy (NASBA) (2005) recently developed a proposal that attempted to change the curriculum requirements for all CPA candidates. Reckers (2006) offers a critical analysis and historical perspective of both the proposal and public reaction to the proposal. He contends that the formative education of accountants is now recognized as important; and public reaction indicates that all stakeholders, including politicians, legislators, and regulators have come to recognize the crucial role auditors and accountants play in protecting society. Unfortunately it has required financial disasters to achieve this recognition.

Previous research by Engle & Elam [1985] established a direct relationship between undergraduate auditing classroom emphasis and auditing textbook emphasis. In addition, a study commissioned by the American Accounting Association's (AAA) Auditing Section to assess the status of auditing courses in the undergraduate accounting curriculum [Frakes (1987)] found the content of the first auditing course to be textbook dependent. Bryan and Smith [1997] surveyed auditing educators to determine their perceptions concerning the importance of 31 auditing topics based on the content of several leading auditing textbooks. More recently, the AAA's 2000-2001 Auditing Section Education Committee (2003) conducted a survey in which course syllabi from 285 auditing and assurance courses were analyzed on a number of dimensions, including identifying auditing topics, and compared to prior surveys of auditing courses (Frakes 1987; Groomer and Heintz, 1994). Like Frakes, the AAA study also found that textbooks are the most common learning activity in introductory auditing courses.

Given this key role, this study provides an assessment of auditing textbooks to aid in the examination of the auditing course content and to facilitate the steps necessary to maintain both its relevance and its effectiveness. This assessment is achieved by employing a survey of auditing educators to assess both the importance and the effectiveness of individual auditing topics gleaned from the topical coverage in several popular auditing texts that span the offerings in the introductory undergraduate auditing textbook market. The results should provide both auditing faculty teaching the introductory auditing course and auditing textbook authors with the means for assessing the relevance of auditing topics covered and the effectiveness of the auditing texts in developing these topics.

This study expands the previous research of Engle and Elam [1985], Bryan and Smith [1997], and the AAA's Auditing Section Education Committee (2003) in several ways. While those studies examined the emphasis of various auditing topics within the auditing course from the perspective of auditing educators, Engle and Elam [1985] focused on the average time spent in class on 36 auditing topics, and then used time spent to rank the topics on importance. Unfortunately, "time spent" may not necessarily equate to "relative importance." Although Bryan and Smith [1997] did focus on the relative importance of auditing topics, the number of auditing topics they specifically addressed was limited. While the Bryan & Smith questionnaire listed 31 topics, four dealt with instructional methods used (e.g., use of group projects) rather than specific

auditing topics. The AAA's Auditing Section Education Committee (2003) study analyzed syllabi from 285 auditing and assurance courses taught at 188 colleges and identified 37 auditing topics that were included in at least 5% or more of the sample syllabi. To provide a more in-depth evaluation of the auditing course, the current research expands the number of auditing topics assessed on relative importance to 63.

Previous research did not include the topics addressed in the Sarbanes-Oxley Act. These topics, dealing with fraud, independence, audit committees, and reporting on internal control, have just now found their way into the auditing textbooks and course in response to the financial scandals and the resultant legislation. Watson, Apostolou, Hassell and Webber (2007) reviewed 223 accounting articles from the period 2003 through 2005. Their review did not find auditing course literature that directly addressed the issues covered by the Sarbanes-Oxley Act. Our research includes nine auditing topics directly related to the Sarbanes-Oxley Act.

Finally, one problem with survey research of this type is translating the research results into action. In part this comes from examining only one side of the issue at hand, i.e., addressing importance only. The results, while interesting, do not provide a guide for action or change. By addressing the effectiveness of the course along with the importance, this research overcomes that obstacle and provides a means of evaluating the perceptions of key stakeholders in auditing education, auditing professors, as to how well contemporary auditing textbooks prepare students for entry into the profession. To facilitate this interpretation, we use importance-effectiveness analysis to evaluate the adequacy of auditing texts in developing the necessary auditing topics needed for success in the auditing profession (Martilla & James 1977).

It is important for accounting educators to review the content of the auditing course and take steps to maintain its relevance. Albrect & Sack [2000, p. 64], state:

We do not need to cover all the traditional material. Students can be exposed to many of these topics at the 25,000-foot level and if we do not get all the topics covered in equal depth, then that's fine. What is important is teaching students how to find answers and how to learn. Frankly, educators have little comparative advantage over practice in delivering high-level technical material. Rather, our competitive advantage is on focusing more on fundamental/foundational material and skill building.

Furthermore, they counsel that “*the important thing is that each school take a “zero-based” approach to its curriculum—throw away what is no longer needed and try to make its program as value-added as possible.*” Thus, the challenge for accounting faculty is to examine the accounting curriculum thoroughly and take the necessary steps to enhance the curriculum so as to ensure its relevance and effectiveness. Our research provides a rational methodology to identify the topics that the faculty believes add value to the students' education experience and focusing on topics the accounting curriculum deems appropriate for the department's education mission.

METHODOLOGY

Questionnaire

The questionnaire asks auditing educators to rate the relative importance of 63 auditing topics to accounting graduates for entry-level work and career advancement using a six-point Likert scale that ranges from extremely important (6) to not important (1). Topic selection was determined by analyzing the topical

coverage in several prominent auditing texts that span the undergraduate auditing-textbook market. Given the inclusion of these topics within prominent auditing textbooks, there is an implied assumption of importance for professional development. As a result, the importance rating scale focuses primarily on relative importance, and only one scale value indicates that the auditing topic is not important. Table 1 lists the specific auditing topics contained in the questionnaire.

Table 1: Auditing Topics	
ID	Individual Auditing Topics
1	Nature of the audit profession and how it differs from that of other practicing accountants
2	Generally Accepted Auditing Standards
3	Statements on Auditing Standards - their origin and use in audit practice
4	Quality Control Standards - their origin and use in audit practice
5	Auditor's decision process for issuance of an audit report
6	Detailed analysis of the unqualified audit report
7	Conditions requiring departure from the standard unqualified audit report
8	Materiality
9	Detailed analysis of the qualified audit opinion
10	Detailed analysis of an adverse audit opinion
11	Detailed analysis of a disclaimer of an audit opinion
12	Other audit engagements or limited assurance engagements
13	Attestation engagements
14	Auditor association with prospective financial statements
15	Reporting on internal control structure related to financial statements
16	Compilation services and reports
17	Review services and reports
18	Review of interim financial information
19	Business ethics and ethical dilemmas
20	Code of Professional Conduct, including concepts such as independence, objectivity, confidentiality, etc.
21	Enforcement of Code of Professional Conduct
22	Definition of audit risk, business failure and audit failure
23	Legal concepts, terminology, and auditor liability to clients and third parties under common law
24	Legal concepts, terminology, and auditor liability to clients and third parties under federal securities law
25	Nature of persuasive audit evidence
26	Types of audit evidence
27	Purpose and timing of analytical procedures

Table 1: Auditing Topics	
ID	Individual Auditing Topics
28	Management's and auditor's responsibilities concerning financial statements
29	Planning the audit
30	Working papers and documentation
31	Assessing business risk
32	Materiality and risk in preliminary phase of the audit
33	Internal control reportable differences
34	Overview and understanding of internal control structure
35	Assessing control risks and testing of key controls
36	Audit objectives and tests related to accounting transactions
37	Design and use of audit program procedures related to tests of balances
38	Business functions- cycles (revenue, acquisition, inventory, etc.) and related records, transactions, and documents
39	Tests of internal controls and substantive tests of transactions for business functions
40	Evaluation and effects of results of tests of internal controls and substantive test of controls
41	Tests of details of account balances
42	Evaluation and effects of details of account balance tests
43	Statistical and nonstatistical sampling concepts
44	Attribute sampling and applications
45	Sampling for tests of details of balances - eg. monetary unit sampling and variable sampling procedures
46	Analysis of statistical results and implication on audit procedures
47	Internal EDP controls
48	Use of computers in the audit of client records and financial statements
49	Contingent liabilities
50	Subsequent events review
51	Discovery of facts subsequent to issuance of audit report
52	Evaluation of results and communication of facts to audit committee and management
53	Internal auditing and various tasks performed by internal auditors
54	Governmental auditing and generally accepted government accounting principles
55	SOX section 404 combined report on financial statements and internal control over financial reporting
56	SOX - auditor independence
57	Public Companies Accounting Oversight Board, including concepts such as ethics, independence, etc.
58	SOX - Audit Committee responsibilities

Table 1: Auditing Topics	
ID	Individual Auditing Topics
59	SOX - Requirements for auditor reporting on internal control
60	Fraud - SAS 99 - Consideration of fraud in a financial statement audit
61	Fraud and analytical procedures
62	Recognize specific fraud areas and develop procedures to detect fraud
63	Corporate governance oversight to reduce fraud risks

A dilemma inherent in asking faculty to assess the effectiveness of contemporary auditing courses is that individual faculty members design the content of their auditing courses. Accordingly, inquiring as to the effectiveness of their course in developing specific auditing topics amounts to self-assessment and an accompanying lack of independence. Conveniently, auditing textbooks play a very significant role in determining contemporary auditing course content at the undergraduate level [Engle & Elam (1985), Frakes (1987), Bryan and Smith (1997), and AAA Auditing Section Education Committee (2003)]. Accordingly, auditing educators are asked to rate the effectiveness of the auditing textbook used in their course in developing each of 63 individual auditing topics in preparing students for entry-level work and career advancement. With respect to effectiveness, the questionnaire uses a six-point Likert scale that ranges from very effective (6) to very ineffective (1). The Likert scale for Importance and Effectiveness is itemized below.

Importance Scale	Point Value	Effectiveness Scale
Extremely Important	6	Very effective
Very Important	5	Effective
Important	4	Slightly effective
Moderately Important	3	Slightly ineffective
Slightly Important	2	Ineffective
Not Important	1	Very ineffective

Note that the scales for importance and effectiveness are not equivalent. Since the auditing topics were textbook determined, an assumption of being necessary for professional success is assumed. Hence, the importance scale focuses on relative importance with only one scale value indicating that the auditing topic was not important. The effectiveness scale, on the other hand, is more balanced. Accordingly, comparisons of results between the two ratings focus on comparing the relative rankings and not the rating means.

Survey Population

Selection of the survey population utilized three criteria: (1) membership in the Audit Section of the American Accounting Association; (2) teaching at an AACSB business accredited institution; and (3) listed in Hasselback (2006-07) as having auditing as an area of teaching and research interest. Although Engle and Elam [1985] and Bryan and Smith [1997] found no differences among faculty at AACSB business accredited schools and those at non-accredited schools, the current AACSB standards (focusing on mission, process, assessment, mandate for continuous assessment of curriculum, and involvement of all stakeholders, including practitioners) accord auditing faculty at AACSB accredited schools increased awareness and understanding of the contemporary needs of the public accounting profession. For these reasons, the selection criteria employed establishes an appropriate population for performing an importance-effectiveness assessment analysis of the topical coverage of auditing curriculum/course.

Questionnaires were sent to 276 auditing professors. Each faculty member received a cover letter describing the study, a questionnaire, and postage-paid return envelope. A second request was sent four weeks after the original mailing. Responses were received from 71 professors, representing a 25.7% response rate. This response rate compares favorably with other surveys involving accounting faculty [cf., Bryan & Smith, 1997: 30.3%; Morris et al, 1990: 22.3%; Cargile and Baublitz, 1986: 24.8%].

Demographics

With respect to faculty rank, 29 of the faculty respondents are full professors, 25 associate professors, and 17 assistant professors. Fifty-eight respondents indicate that in addition to having AACSB business accreditation, their school also has AACSB accounting accreditation. Sixty-five respondents hold a Ph.D. degree, and 36 are CPAs. Within their undergraduate accounting programs, 62 report that they require one auditing course. Four indicate that they require two auditing courses, and five state that no auditing course is required as part of their undergraduate accounting curriculum.

MANOVA Comparisons

Given that each respondent rates 63 different auditing topics, it is appropriate to employ multivariate analysis of variance tests (MANOVA) to determine whether any of the demographic variables has an impact on the importance and effectiveness-rating outcomes. One-way MANOVA tests were performed to determine whether rank of respondent (full, associate, or assistant professor), AACSB accounting accreditation status (yes or no), and professional certification (CPA) influence the mean responses. No statistically significant differences were found in any of these cases. Table 2 shows the results of these statistical tests.

Olson [1974] found that when performing MANOVA the test statistic based on Pillai's trace is the most robust and has adequate power to detect true differences under different conditions. Moreover, Pillai's trace can be transformed into an exact F-ratio, and for the case when comparing two groups, Pillai's trace can be transformed into Hotelling's T or an exact F-ratio. Accordingly, the ratings on importance of the 63 auditing topics appear to be consistent among the responding accounting educators despite differing demographic variables as no significant differences are present with the MANOVA analysis.

Table 2: MANOVA Test Results

Variable	Pillai's Trace	F-value	Significance
Importance Dimension			
Rank (full, assoc. or asst.)	1.833	1.223	0.351
AACSB Accounting Accreditation	0.941	1.779	0.216
CPA vs. nonCPA	0.862	0.695	0.794
Non-response Bias	0.934	1.574	0.275
Effectiveness Dimension			
Rank (full, assoc. or asst.)	1.817	1.106	0.443
AACSB Accounting Accreditation	0.944	1.861	0.197
CPA vs. non CPA	0.933	1.543	0.285
Non-response Bias	0.925	1.375	0.351

Non-Response Bias Considerations

The potential for non-response bias is present in every mail survey due to the inability to obtain responses from all members of the original sample. Research has found that those subjects who respond less readily are more like non-respondents, and that average responses from successive mailings can be used to estimate the potential responses of non-respondents [Armstrong & Overton, 1977]. To test for non-response bias, we compare both the importance and effectiveness mean responses between the first and second mailings for each of the 63 auditing topics employing Hotelling's T, a multivariate t-test. The results are in Table 2. The lack of significant differences in the foregoing tests indicates the absence of material non-response bias.

RESULTS

Table 3 displays the mean ratings responses for both importance and effectiveness for all the topics where the auditing topics are arranged based on their mean importance ratings ranking. Grand means for both importance and effectiveness are calculated as reference points representing the average importance and effectiveness levels for all the auditing topics. The overall grand means for importance and effectiveness are 4.56 and 4.26, respectively. Scanning the rankings on the mean importance ratings clearly shows that educators assign high importance ratings to almost all the auditing topics as only two of the topics have a mean importance rating below 3.00. Further breakdown reveals that two topics have mean values greater than 5.50, and they are accorded an importance level of *Extremely Important*. Thirty-four topics have mean values between 5.50 and 4.50 and, thus, are assigned an importance level of *Very Important*, 22 topics have mean values between 4.50 and 3.50 and so are ascribed an importance level of *Important*, and only five topics have mean values between 3.50 and 2.50 and, thus, are accorded an importance level of *Moderately Important*. Given that the selected educators have an explicit commitment to auditing, the high responses on importance are not surprising. However, since this research does not permit an absolute assessment of importance or

effectiveness but rather a subjective assessment of each dimension, this research focuses appropriately on the relative responses. Accordingly, 35 topics have mean importance ratings above or equal to the grand mean (4.56) on importance and 28 topics are lower than the grand mean.

Table 3: Auditing Topics Ranked by Mean Importance Rating

ID	Individual Auditing Topics	Importance		Effectiveness	
		Rank	Mean	Rank	Mean
2	Generally Accepted Auditing Standards	1	5.54	1	5.20
34	Overview and understanding of internal control structure	2	5.52	12	4.61
22	Definition of audit risk, business failure and audit failure	3	5.38	7	4.82
8	Materiality	4	5.31	26	4.41
60	Fraud - SAS 99 - Consideration of fraud in a financial statement audit	5	5.28	22	4.46
19	Business ethics and ethical dilemmas	6	5.27	51	3.89
28	Management's and auditor's responsibilities concerning financial statements	7	5.24	2	5.00
20	Code of Professional Conduct, including concepts such as independence, objectivity, confidentiality, etc.	8	5.20	6	4.87
35	Assessing control risks and testing of key controls	9	5.18	31	4.38
26	Types of audit evidence	10	5.17	4	4.99
32	Materiality and risk in preliminary phase of the audit	11	5.14	33	4.37
56	SOX - auditor independence	12	5.13	17	4.54
29	Planning the audit	12	5.13	9	4.69
15	Reporting on internal control structure related to financial statements	14	5.11	37	4.31
25	Nature of persuasive audit evidence	14	5.11	14	4.59
36	Audit objectives and tests related to accounting transactions	16	5.07	10	4.63
27	Purpose and timing of analytical procedures	17	5.04	23	4.44
7	Conditions requiring departure from the standard unqualified audit report	18	5.01	2	5.00
61	Fraud and analytical procedures	19	5.01	49	3.93
40	Evaluation and effects of results of tests of internal controls and substantive test of controls	20	5.00	38	4.30
41	Tests of details of account balances	20	5.00	8	4.73
5	Auditor's decision process for issuance of an audit report	22	4.97	26	4.41

Table 3: Auditing Topics Ranked by Mean Importance Rating

ID	Individual Auditing Topics	Importance		Effectiveness	
		Rank	Mean	Rank	Mean
59	SOX - Requirements for auditor reporting on internal control	23	4.96	35	4.34
39	Tests of internal controls and substantive tests of transactions for business functions	24	4.93	17	4.54
33	Internal control reportable differences	25	4.90	46	4.07
55	SOX section 404 combined report on financial statements and internal control over financial reporting	26	4.87	39	4.27
42	Evaluation and effects of details of account balance tests	26	4.87	25	4.42
57	Public Companies Accounting Oversight Board, including concepts such as ethics, independence, etc.	28	4.82	26	4.41
62	Recognize specific fraud areas and develop procedures to detect fraud	29	4.77	55	3.65
31	Assessing business risk	30	4.75	43	4.17
50	Subsequent events review	31	4.70	14	4.59
52	Evaluation of results and communication of facts to audit committee and management	32	4.69	42	4.23
37	Design and use of audit program procedures related to tests of balances	32	4.69	29	4.39
63	Corporate governance oversight to reduce fraud risks	34	4.62	57	3.56
38	Business functions- cycles (revenue, acquisition, inventory, etc.) and related records, transactions, and documents	35	4.61	16	4.58
49	Contingent liabilities	36	4.54	23	4.44
58	SOX - Audit Committee responsibilities	37	4.48	48	4.00
3	Statements on Auditing Standards - their origin and use in audit practice.	38	4.41	31	4.38
6	Detailed analysis of the unqualified audit report	39	4.39	5	4.89
43	Statistical and nonstatistical sampling concepts	40	4.35	35	4.34
1	Nature of the audit profession and how it differs from that of other practicing accountants	40	4.35	19	4.49
47	Internal EDP controls	42	4.30	58	3.51
30	Working papers and documentation	42	4.30	43	4.17
44	Attribute sampling and applications	42	4.30	21	4.48

Table 3: Auditing Topics Ranked by Mean Importance Rating

ID	Individual Auditing Topics	Importance	Effectiveness		
		Rank	Mean	Rank	Mean
46	Analysis of statistical results and implication on audit procedures	45	4.25	45	4.10
48	Use of computers in the audit of client records and financial statements	46	4.23	62	3.13
9	Detailed analysis of the qualified audit opinion	46	4.23	10	4.63
24	Legal concepts, terminology, and auditor liability to clients and third parties under federal securities law	48	4.21	33	4.37
51	Discovery of facts subsequent to issuance of audit report	49	4.20	29	4.39
21	Enforcement of Code of Professional Conduct	50	4.17	51	3.89
23	Legal concepts, terminology, and auditor liability to clients and third parties under common law	50	4.17	39	4.27
45	Sampling for tests of details of balances - eg. monetary unit sampling and variable sampling procedures	52	4.03	41	4.24
11	Detailed analysis of a disclaimer of an audit opinion	53	3.97	19	4.49
4	Quality Control Standards - their origin and use in audit practice	54	3.94	53	3.87
10	Detailed analysis of an adverse audit opinion	55	3.80	12	4.61
53	Internal auditing and various tasks performed by internal auditors	56	3.79	61	3.34
12	Other audit engagements or limited assurance engagements	57	3.62	50	3.92
13	Attestation engagements	58	3.58	47	4.03
18	Review of interim financial information	59	3.45	59	3.49
17	Review services and reports	60	3.34	55	3.65
16	Compilation services and reports	61	3.14	54	3.70
14	Auditor association with prospective financial statements	62	2.93	60	3.37
54	Governmental auditing and generally accepted government accounting principles	63	2.89	63	2.48

On the effectiveness dimension, the educators assigned 18 topics to an effectiveness level of *Effective* as their mean effectiveness ratings are between 5.50 and 4.50, 40 topics to an effectiveness level of *Slightly Effective* with mean effectiveness ratings between 4.50 and 3.50, and only five topics to an effectiveness level of *Slightly Ineffective* as their means are below 3.50 but above 3.00. Once more, the focus is directed toward

the relative effectiveness with 40 auditing topics having mean effectiveness ratings above the grand mean (4.26) on effectiveness and 23 topics below the grand mean.

While importance can stand on its own merits, the real value of effectiveness is with respect to achieving a goal. Consequently, the useful interpretation of the effectiveness ratings rests on determining how effectively the auditing textbooks develop the more important auditing topics. Ideally, for a textbook to be efficient, it should be more effective in developing the higher rated topics on importance. That is, an ideal situation would be one where the Spearman rank correlation coefficient between the two rankings on importance and effectiveness is close to +1.0. For the two rankings in Table 3, the Spearman rank correlation coefficient is positive ($r_s = + 0.581$) and significant at the 0.000 level. Thus, current auditing textbooks' efficiency appears less than ideal, and significant differences between the importance and effectiveness rankings signal both topical areas in which the textbooks are underperforming and topical areas where the texts are, in a sense, over-performing and could be replaced by topics perceived as more important.

Importance-Effectiveness Diagram

Creating an importance-effectiveness analysis diagram (Martilla & James, 1977), yields a better perspective of the results shown in Table 3 and allows for an analysis of the relative performance of the auditing curriculum course with respect to each of the 63 auditing topics. Figure 1 provides such an analysis diagram with the individual auditing topics, each identified by the ID number assigned in Table 1, plotted on a two-dimensional grid with importance being the y-axis and effectiveness being the x-axis. The origin or reference point within the grid is determined by the grand means on importance and effectiveness. The positioning of the auditing topics is determined by subtracting the grand means on importance and effectiveness from their respective mean values for each of the topics. Thus, each topic's position is made relative to the overall average ratings on importance or effectiveness.

To facilitate interpretation and to provide guidance for curriculum course development, the four quadrants are labeled. Quadrant I (upper right) — labeled "Keep up the Good Work" — contains topics that respondents considered relatively more important (i.e. above the average) and the textbooks' effectiveness in developing these topics as above average. Quadrant II (upper left) — labeled "Concentrate Here" — contains topics that are relatively more important, but respondents considered the effectiveness of the textbooks in developing these topics as below average. Quadrant III (lower left) is labeled "Lower Priority" since the topics in this quadrant are considered to have lower relative importance and the effectiveness of the textbooks in developing these topics is below average. Quadrant IV (lower right) is labeled "Possible Overkill." The topics that fall into this quadrant are considered to have lower relative importance and the effectiveness of the textbooks in developing these topics is above average. Obviously, the positioning of the vertical and horizontal axes on the grid is a matter of judgment and will change the quadrant into which a particular topic is positioned. However, using the grand means initially provides a relative basis for positioning the auditing topics.

Since each quadrant of Figure 1 encompasses a large area, the location of an auditing topic's plot within the quadrant is very important. Unfortunately a "perfect tradeoff metric" that can be used to optimize course performance has yet to be developed. Auditing faculty and auditing textbook authors must use their own judgment and experience when making decisions to improve the performance of an auditing course. In general, as the importance of an auditing topic increases, the effectiveness of its development should increase. But, clearly some topics are more easily developed than others. Note that some topics appearing in Quadrant I may be higher in importance than others that are more effectively developed. For example, *Types of audit evidence* (ID=26), *Conditions requiring departure from the standard audit report* (ID=7), *Code of Professional Conduct, including concepts such as independence, objectivity, confidentiality, etc.* (ID = 20), *Test of details of account balances* (ID = 41), *Subsequent events review* (ID = 50), and *Business functions—cycles (revenue, acquisition, inventory, etc.) and related records, transactions, and documents* (ID = 38) are more effectively developed than other topics in Quadrant I that have equal or higher ratings on importance. Thus, viable course tradeoffs may occur between auditing topics within the same quadrant as well as between auditing topics plotting in different quadrants. For example, it may be possible to spend less classroom time on the auditing topics just listed given the rather effective development of these topics by the textbook, and spend more time on those with higher importance ratings that are being less effectively developed. Likewise, it is clear from Figure 1 that the four topics plotting farther to the left in Quadrant II (IDs = 19, 61, 62, and 63) need more attention than the three topics plotting farther to the right (IDs = 33, 31, and 52), which also plot within Quadrant II. Additionally, topics ID 61, 62 and 63 deal directly with fraud, and today's students will be expected to have a much better understanding of these topics and their importance to the audit process in light of the Sarbanes-Oxley Act.

The third quadrant represents auditing topics that are perceived to be below average in importance and, therefore, it is quite acceptable to have these topics receive a below average rating in the textbook's effectiveness in developing these topics. That is, auditing educators perceive that, on a relative basis, lower priority should be assigned to these sixteen topics. Again, plot location would indicate that *SOX – Audit Committee responsibilities* (ID=58) would have a much higher priority than *Government auditing and generally accepted government accounting principles* (ID = 54).

Twelve auditing topics plot in the fourth quadrant. They represent topics that are below average in importance but are developed with above average effectiveness. As such, they represent topics that could be used in acceptable tradeoffs. That is, the resources and time allocated to developing the topics that are lower in importance but are already effectively developed can be shifted to those topics plotting in Quadrant II, considered very important but not being effectively developed. Here again, the plotting within the quadrant is important. Thus, appropriate action to improve the performance of an auditing course would be for faculty to decrease, for example, their efforts in developing the following seven topics: *Detailed analysis of the unqualified report* (ID = 6), *Detailed analysis of a qualified audit report* (ID = 9), *Detailed analysis of an adverse audit opinion* (ID = 10), *Detailed analysis of a disclaimer of an audit opinion* (ID = 11), *Nature of the audit profession and how it differs from that of other practicing accountants* (ID=1), *Attribute sampling and applications* (ID=44), and *Discovery of facts subsequent to issuance of audit report* (ID=51). Thus, these topics would rightly move westward in Figure 1 toward the third quadrant as they have a lower priority. However, other topics in Quadrant 4 such as *Contingent liabilities* (ID=49), *Statements on Auditing Standards – their origin and use in audit practice* (ID = 3), and *Statistical and nonstatistical sampling concepts* (ID=43) already plot close to the origin and represent average performance and average effectiveness. Thus, their tradeoff potential is less appealing.

DISCUSSION

The auditing educators' overall assessment of the effectiveness of auditing textbooks in developing auditing topics is that the texts are performing quite well. Forty-four of the 63 topics appropriately plot in Quadrants I and III. However, ample room for improvement still exists, particularly with regard to the seven topics plotting in Quadrant II. An important outcome of importance-effectiveness analysis is assessing the potential tradeoffs that exist within a curriculum course that could improve its performance. For example, one could spend less time on topics that plot in the fourth quadrant and reallocate that effort to the topics plotting in the second quadrant. In addition, potential tradeoffs can exist within each of the quadrants. Thus, this research represents an improvement over past studies through its ability to translate research results into guides for action to improve auditing course performance.

The subjective nature of importance-effective analysis needs to be emphasized for several reasons. First, the auditing educators' responses are subjective and have only relative values, not absolute values. Second, no simple metric exists to assess the potential tradeoffs. While in an ideal case, high importance topics would have high levels of effectiveness and vice-versa, the intuitive appeal of having individual topics plot on a line with a positive slope must be tempered with judgment and a sound understanding of the nature of auditing course. Unquestionably two topics rated equally on importance can require substantially different amounts of time and effort for the curriculum course to effectively prepare students for the auditing profession. Thus, the potential benefits of de-emphasizing one topic to allocate the freed resources to another topic will clearly depend not only on the two topics selected for the tradeoff but also on the experience and skill of the instructor vis-à-vis each of these topics. Hence, different instructors may perceive potential tradeoffs differently.

Another contribution of this paper is providing vital communication between two important stakeholders in auditing education: auditing textbook authors and a national sample of auditing educators. The task of textbook authors is facilitated as they understand the perceptions of auditing educators on both the relative importance of a broad array of auditing topics in preparing accounting graduates and the effectiveness of auditing textbooks in developing each of these topics.

Finally, the survey results clearly demonstrate an apparent shortcoming within current auditing texts with respect to their effectiveness in developing the necessary knowledge and skills in recognizing, evaluating and dealing with fraud and ethics. A logical course of action for auditing faculty to undertake in this circumstance is to supplement their auditing course with added materials on fraud and ethics. Peterson (2003) provides an excellent source of additional material including academic and trade books, case materials, journal articles, and videos all relating to fraud examination, detection, and control. Several casebooks have been written dealing with ethics. For example, Mintz and Morris (2008) have several short and extensive cases dealing with audit ethics. These cases can supplement the textbooks' treatment of ethics. With the wealth of material found in textbooks and constraints of time, educators might look to extracurricular activities as a way to enhance learning experiences in the classroom. Many schools have active student organizations, like the Student Chapter of the IMA and Beta Alpha Psi. These organizations can sponsor speakers that discuss topics of fraud and ethics.

Survey respondents, asked to comment on ways their auditing course has changed due to SOX legislation, made a number of comments. The auditing course is only part of the accounting curriculum, and some topics could be found in or moved to other courses. A number of respondents reported that an ethics course had been added to the curriculum. This helps students develop a sense of business ethics and an ability to identify ethical dilemmas and free up time in the auditing course to devote to other topics.

Respondents also reported that many of the internal control topics identified in the study are addressed in most accounting information system courses and need not be covered in an auditing course. Some schools, however, do not have an accounting information systems course in their curriculum. Internal control topics were deemed to be among the most important topics in an auditing course. If internal control topics are moved to an accounting information systems course, integration of these concepts with the auditing course objectives would be crucial. Respondents also reported dropping peripheral topics such as auditor's legal liability and sampling so they could include SOX in their auditing course and put more emphasis on fraud topics.

In summary, accounting educators need to look for overlapping course topics and consider curriculum review. The curriculum review can then shift topics from one course to another or re-enforce the students' understanding of important topics not effectively presented by the textbook. Further, the educator may have to expect that students will get some of the less effectively presented topics on their own as they mature in their chosen careers.

REFERENCES

- Albrecht, W.S. & R.J. Sack (2000). *Accounting Education: Charting the course through a perilous future*. Sarasota, FL: American Accounting Association.
- American Accounting Association Audit Section Education Committee (2003). Challenges to audit education for the 21st century: A survey of curricula, course content, and delivery methods. *Issues in Accounting Education*, 18(3), 241-263.
- American Accounting Association Committee on the Future Structure, Content, and Scope of Accounting Education (1986). Future accounting education: Preparing for the expanding profession. *Issues in Accounting Education*, 1(1), 168-195.
- American Institute of Certified Public Accountants [AICPA]. Commission on auditors' responsibilities report (1978). *Conclusions and Recommendations*. New York: AICPA.
- Armstrong, J.S. & T.S. Overton (1977, August). Estimating non-response bias in mail surveys. *Journal of Marketing Research*, 396-402.
- Bryan, B.J. & L. Murphy Smith (1997). Faculty perspectives of auditing topics. *Issues in Accounting Education*, 12(1), 1-14.
- Cargile, B. & B. Bublitz (1986, January). Factors contributing to published research by accounting faculties. *The Accounting Review*, 158-178.
- Engle, T. & R. Elam (1985). The status of collegiate auditing education. *Issues in Accounting Education*, 97-108.
- Frakes, A.H. (1987, Spring). Survey of undergraduate accounting education. *Journal of Accounting Education*, 99-126.
- Groomer, S. & J. Heintz (1994, Spring). A survey of advanced auditing courses in the United States and Canada. *Issues in Accounting Education*, 96-108.
- Hasselback, J.R. (2006-07). *Accounting faculty directory*. Upper Saddle River, N.J: Prentice Hall.

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- Kanter, H.A. & M.K. Pitman (1987). An auditing curriculum for the future. *Issues in Accounting Education*, 2(2), 251-263.
- Kullberg, D.R., W.L. Gladstone, P.R. Scanlon, J.M. Cook, R.J. Groves, L.D. Horner, S.F. O'Malley & E.A. Kangas (1989). *Perspectives on education: Capabilities for success in the accounting profession*. New York: Arthur Andersen & Co., Arthur Young, Coopers & Lybrand, Deloitte Haskins & Sells, Ernst & Whinney, Peat Marwick Main & Co., Price Waterhouse, and Touche Ross.
- Martilla, J.A. & J.C. James (1977). Importance-performance analysis. *Journal of Marketing*, 41(1), 77-79.
- Martin, J.W. & S.R. Whisant (1982, November). Why Johnny can't audit. *The CPA Journal*, 10-17.
- Mintz, S.M. & R.E. Morris (2008). *Ethical obligations and decision making in accounting: Text and Cases*. New York, NY: McGraw-Hill Irwin.
- Morris, J.L., R.M. Cudd & J.L. Crain (1990, Summer). The potential bias in accounting journal ratings: Evidence concerning journal-specific bias. *The Accounting Educators' Journal*, 46-45.
- National Association of State Boards of Accountancy [NASBA] (2005). Draft Proposal: Revised Uniformed Accountancy Act rules 5-1 and 5-2. February 2005, Nashville, TN., from <http://www.nasba.org>.
- Olson, C.L. (1974). Comparative robustness of six tests in multivariate analysis of variance. *Journal of the American Statistical Association*, 69(348), 894-907.
- Peterson, B.K. (2003). Fraud education for accounting students. *Journal of Education for Business*, 78(5), 263-267.
- Reckers, P.M.J. (2006). Perspectives on the proposal for a generally accepted accounting curriculum: A wake-up call for academics. *Issues in Accounting Education*, 21(1), 31-43.
- Watson, S.F., B. Apostolou, J.M. Hassell & S.A. Webber (2007). Accounting education literature review (2003-2005). *Journal of Accounting Education*, 25, 1-58.

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