

HOW DIVERGENT ARE PEDAGOGICAL VIEWS TOWARD THE FRAUD/FORENSIC ACCOUNTING CURRICULUM?

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ABSTRACT

Accounting programs around the world have been revising their curricula to include courses in “fraud/forensic” accounting. Yet, an initial review of these courses indicates there may be divergent approaches to their development. This article identifies the characteristics of three underlying course development perspectives and their implications for accounting programs. Next, the results of a survey of fraud/forensic instructors and course syllabi are presented to identify the developmental approaches used in these courses. The article is written to help future course developers who are considering introducing fraud/forensic accounting into their accounting programs as well as those accounting educators who are revising their existing courses.

Key words: Forensic accounting, fraud accounting, fraud examination, accounting curriculum

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As a result of numerous accounting scandals in recent years, forensic accounting is the hottest topic to affect the university business curriculum since the early rush into MBA programs in the 1970s.¹ In addition, these financial frauds have significantly changed accounting practices used in identifying fraudulent activities. For example, the potential effect of "forensic audits" on practice is apparent in the report entitled *Serving Global Capital Markets and the Global Economy* (Global Public Policy Symposium 2006) released by the Big Four along with Grant Thornton and BDO International (hereafter the "Global Report").

The Global Report is concerned with the legal liabilities facing accounting firms from a host of expanding lawsuits based on stockholders' and others' losses from after-audit negative financial events, such as fraud. To improve this situation, the Global Report's authors suggest that all public companies have forensic audits, although the report does not identify the nature of a "forensic audit." The Global Report is a defense of the accounting profession, but it also represents a potential strategic shift for practitioners to bring forensic practices into the consultative track of available accounting services. Both in academic circles and within accounting practice, forensic accounting is being widely discussed, but a clear definition has not yet been formulated.

Here, it is argued that the development of new curricula needs to be tempered with an understanding of the underlying differences that may exist in "fraud versus forensic" concepts. Before course revisions start, course developers need to identify the foundation for introducing "fraud/forensics" into the accounting curriculum. Should auditing, traditional fraud examinations, or forensics provide the underlying foundation for accounting curriculum development? Or should it be a combination of these three approaches? This is not a semantic argument as the answer limits the content of courses as well as the fraud/forensic orientation of the accounting curriculum.

This article identifies the pedagogical issues related to selecting an auditing, fraud, or forensic model for curricula revision. Next, a survey of faculty members who teach fraud/forensic courses is reviewed along with a sample of fraud/forensic course syllabi.

PEDAGOGICAL CONCERNS

For accounting programs, there is no scientific answer identifying the best pedagogical approach to use in developing a fraud/forensic curriculum, but there are philosophical beliefs about a best approach. Traditional auditing courses have presented fraud instruction within the accounting curriculum in the past, and as such auditing serves as the starting point in developing a fraud/forensic curriculum. However, a revision from traditional audit-based content to either a fraud or forensic approach changes the scope of analytical techniques used as well as the understandings in the revised curriculum. The next section reviews the differences in audit, fraud examination, and forensic accounting perspectives to curriculum development.

¹There are a number of financial scandals besides the well-known Enron and WorldCom frauds. The 2002 accounting scandals include: AOL, Adelphia, Bristol-Myers Squibb, Computer Associates, Duke Energy, Dynegy, El Paso Corporation, Enron, Freddie Mac, Global Crossing, Halliburton, Harken Energy, HealthSouth, Lucent Technologies, Merrill Lynch, Quest Communications, Reliant Energy, Sunbeam, Tyco International, Waste Management, Inc. and World Com. The 2003 accounting scandals include: Royal Ahold Parmalat and Calisto Tanzi. The 2005 accounting scandals include AIG. During 2006, accounting scandals were related to the predating of corporate stock options. Dell has been added to the 2007 list as a result of a kickback scheme.

Auditing: A Foundation for Fraud/Forensic Curriculum Revisions

Auditing students are introduced to the procedures for testing internal company controls. The results of evaluating a company's internal controls determine the extent of necessary transaction sampling needed to provide assurances of properly prepared financial statements. Financial auditing procedures are performed in a well-structured and documented fashion to evaluate management's financial statement representations. Students learn about the need to show that properly documented auditing procedures were followed to answer any after-audit legal inquiries. They use statistical sampling to ensure that there is a ninety-five percent level of confidence, for example, and that account balances are accurate.² Auditing courses introduce students to detailed checking procedures followed in conducting an audit.

Auditing courses also incorporate the study of fraud. Peterson and Reider (1999) found that 78.3% of the first auditing courses in their survey incorporated discussions of fraud topics. For example, auditing discussions cover frauds from check kiting, net worth analysis, asset misappropriations, and financial statement misrepresentation.³ These topics are similar to those included in fraud examination courses, but with numerous other audit topics to cover, such fraud topics cannot be as fully developed within an auditing course.

Basing fraud/forensic course development on auditing procedures changes the back-and-forth interactions of forensic practices that include litigation services, valuation, and computer forensics and a broader-based instructional model. Auditing is strongly based on providing assurances that account balances are "statistically" accurate, internal controls are satisfactory, and accounting rules are followed. Fraud/forensic accounting extends to studies beyond these traditional auditing topics (AICPA 2004).

Beyond these pedagogical differences, teaching approaches toward the study of fraud/forensics require the student to adopt a more suspect mindset toward his/her studies than is used in an audit course. Fraud/forensic perspectives do not assume that a client will honestly follow any of the detailed rules of GAAP or that audit check-off lists will identify the financial fraud's anomalies.

Presently, the quantity of material in traditional auditing courses restricts the time available for the introduction of new material. Therefore, adding a host of new fraud and forensic topics to auditing instruction is not considered a viable alternative. This issue has been recognized by course developers as recent program revisions have introduced completely new fraud examination or forensic accounting courses into the accounting curricula.

Fraud Examination: A Foundation for Fraud/Forensic Curriculum Revisions

If auditing courses place limits on developing a fraud/forensic curriculum, course developers are left with the choice of using a fraud examination or a forensic accounting approach. Fraud examination courses cover topics such as fraudulent payment schemes, internal control analysis, cash

² Auditor verification of acceptable account balances is achieved with less than full review (95% assurance); whereas fraud analysis is concerned with the deviations in the unverified portions of the account, i.e., the remaining 5%.

³ Financial statement misrepresentations include: recording fictitious revenue; incorrect timing differences of revenue and expense; concealing liabilities; inadequate or misleading financial statement disclosures; incorrectly valued assets; and fraudulent capitalization of expenses.

theft, payroll fraud, and flowcharting (for internal control). Although there is similar content found in auditing and fraud examination courses, the fraud content and topic depth is more expansive in a fraud examination course.

One example of a curriculum based on fraud examination is the model developed by the accounting department at West Virginia University under a grant from the Department of Justice (DOJ). In 2007, the DOJ issued a model curriculum report (hereafter the "Report") titled *Education and Training in Fraud and Forensic Accounting: A Guide for Educational Institutions, Stakeholder Organizations, Faculty and Students* (U.S. Department of Justice 2007). The Report presents an outline and argument, including course descriptions, for a model "fraud and forensic" accounting program.

The Report illustrates the student knowledge and skill set requirements with a Venn diagram (p. 5). The chart is reproduced here in [Figure 1](#). Auditing, fraud, and forensic interrelationships are identified without defining the central area overlapped by each skill set. It is hard to determine from the Report how the three areas interact with one another because the fraud, auditing, and forensic skill sets are shown as operating within separate spheres.

Another example of a fraud examination curriculum is available from the Association of Certified Fraud Examiners (ACFE) and covers subjects including cash larceny, payroll schemes, expense reimbursement schemes, inventory theft, and fraudulent financial statement schemes. The ACFE's support with freely distributed classroom materials has led to the introduction of many new accounting courses with a fraud perspective.⁴

Forensics: A Foundation for Fraud/Forensic Curriculum Revisions

[Figure 2](#) illustrates forensic accounting as a broader approach with intersecting discipline areas and skill sets. This view is different from the approach taken in [Figure 1](#). The discipline basis for forensic accounting is found in criminology, accounting, investigative auditing, litigation services, and an understanding of accounting/computer forensics. [Figure 2](#) is designed to represent forensic accounting as a broader area of investigation than fraud examination. Each of the five disciplines has its own skill set.

Within the center of [Figure 2](#), the five skill sets intersect to produce the curriculum for forensic accounting. The study of criminology represented in [Figure 2](#) deals with theories that cause crime to develop, such as conflict theory, natural choice theory, and social control theories. Topics include corporate crime, corporate culture reviews, and interview techniques.

The circle represented by accounting is the basic accounting and financial understandings and foundational skills students develop as they advance through their undergraduate university accounting courses. This basic skill set allows students to enter a fraud/forensic curriculum. The next skill set in [Figure 2](#) is investigative auditing. In this representation, fraud examination is considered to be part of investigative auditing along with the traditional investigative auditing areas centered on transaction analysis applied within inventory fraud or cash theft, for example.

⁴The Association of Certified Fraud Examiners (ACFE) is the professional organization whose members are involved in implementing fraud examinations. For a complete list of fraud examination topics identified by the ACFE, see the list of subjects covered in the ACFE's self-study courses. On their website, the ACFE lists two hundred and eighty-three universities that are participating in their fraud examination course initiative. (<http://eweb.acfe.com/eweb/DynamicPage.aspx?Site=ACFE&WebCode=Schools>; Accessed December 19, 2007)

Also included in Figure 2 is a litigation skill set. Litigation includes the ability to understand: the discovery process; rules of evidence at the Federal and state levels; the difference between civil and criminal proceedings; differences between being an attorney in the courtroom and an accountant acting as expert witness; valuation services; and preparing electronic data for trial. Finally, accounting/computer forensic skills surround the other skill sets. These skills include working with electronic data without compromising or destroying the data needed for an investigation. In addition, they deal with an understanding of electronic information risk and locating an electronic footprint used to create bogus electronic or paper records (Smith 2005). Today developing such a skill set is important because “92 percent of new data is created electronically and 70 percent of that data never migrates to paper” (Kahan 2006).

Several accounting programs have adopted broader-based forensic curricula revisions, but there is no professional group (such as the ACFE) or model curriculum (such as the WVU model) to provide guidance. Consequently, two accounting programs (Seneca College in Canada and the University of Wollongong) were randomly selected as illustrative examples of forensic programs.⁵ Seneca College in Canada offers a graduate certificate program in Fraud Examination and Forensic Accounting.⁶ The intense two semester program is made up of the twelve-course fraud/forensic sequence listed in Table 1. The program offers a range of courses including Business Valuation as well as Criminology and Ethics. Business Valuation covers the valuation of business entities as well as the valuation of financial damages incurred by these businesses. Criminology and Ethics deals with the basic theories related to criminology, crime causation, behavior patterns, morality, and codes of ethics. Courses also include Money Laundering and Asset Tracing across international borders, Computer Forensics and Data Mining, Litigation Support, and Serving as an Expert Witness.

The University of Wollongong in Australia offers a Master of Forensic Accounting.⁷ Courses in this program are: Introductory Forensic Accounting, Forensic and Litigation Framework, Fraud and Failure, Investigative Processes, and Advanced Investigative Techniques. In addition, there are two Independent Research courses as shown in Table 1. The Forensic and Litigation Framework course analyzes business risk profiles and provides the student with an understanding of the judicial system, including knowledge of how to act as an expert witness in the courtroom. Investigative Processes outlines the steps in combining non-quantitative data with financial information to identify suspicious events. Other program topics, as shown in Table 1, include irregularity predictions, document fraud analysis, statistical modeling for risk assessment, and evaluating key organizational operating and financial indicators.

⁵The two programs were selected as representative examples of forensic accounting's wide-ranging approach. They were selected after completing a website review of 200 accounting courses and programs. The review was performed prior to beginning the paper to determine if there might be differences in the manner in which fraud/forensic accounting was being introduced into the accounting curriculum.

⁶See the University's website at <http://www.senecac.on.ca/fulltime/FEA.html>. Accessed July 31, 2008.

⁷See the University's website at http://www.uow.edu.au/handbook/yr2005/dept_PgAccy.html. Accessed July 31, 2008.

One model of fraud/forensics curriculum is not being advocated over the other as funding and faculty backgrounds are different in every program. However, course developers must understand the direction in which they are leading their programs as they make their fraud/forensic choices. The next section briefly reviews research in this area. The survey responses and syllabi collected from faculty teaching fraud/forensic accounting courses are then analyzed.

TABLE 1

**Course Sequences and Brief Course Descriptions
from Two Sample “Forensic” Programs**

**Seneca College: Graduate Certificate
Program in Fraud Examination and
Forensic Accounting (two semester
program)**

Fraud Investigative Basics A study of the methods used to detect and prevent fraud.

Fraud and the Business Environment The course provides an understanding of the basic accounting practices and the roles of various organizational groups that work together to combat fraud in the workplace.

Money Laundering and Asset Tracing A study of the international controls and regulations designed to combat money laundering and examine the methods of tracing assets across international borders.

**University of Wollongong: Master of
Forensic Accounting (six course sequence)**

Introductory Forensic Accounting Students are introduced to forensics and its role in the regulatory framework as well as within the legal and ethical framework of corporate governance, including the roles and duties of directors, executive officers, chief financial officers, and management.

Forensic and Litigation Framework The course develops skills aimed at identifying and assessing an organization's risk profile and appropriate responses. Additionally, it provides for a basic understanding of the judicial system, laws of evidence, preparation of working papers, and presentation of evidence as an expert witness.

Fraud and Failure Students develop basic skills for identifying suspicious or irregular activities and investigating. The subject matter includes the analysis of transactions in asset fraud and mismanagement, banking, and market manipulation, and document fraud.

(continued)

TABLE 1 (continued)

Seneca College: Graduate Certificate Program in Fraud Examination and Forensic Accounting (two semester program)

Legal Aspects of Fraud The course provides an introduction to the Canadian legal system and an examination of agreements that facilitate international cooperation in fighting fraud.

Criminology and Ethics Theories of criminal causation and ethical dilemmas are considered using case studies.

Business Valuation and Quantification of Damages The course presents the study and application of concepts related to business valuation and quantification of financial damages.

University of Wollongong: Master of Forensic Accounting (six course sequence)

Investigative Processes Students acquire knowledge and skills in non-quantitative and quantitative analytical review procedures to evaluate financial information and identify the relationships between financial and non-financial data. Strategic analysis including statistical analysis and modeling is used to study risk assessment including credit risk, fraud detection, and market interactions.

Advanced Investigative Techniques The course's focus is on the quantitative analysis of key operating and financial aspects of organizations including forecasting, marketing, strategic partnerships, and computer systems. An assessment of fraud risk, mismanagement and corporate governance, and performance through understanding an entity's components, structure, and environment is emphasized.

Research Project A The course allows students to undertake an independent fraud research project focused on the global economic environment. Areas of investigation may include: international regulatory frameworks; identifying trans-national corporate fraud; and forensic analysis of trans-national corporations.

(continued)

TABLE 1 (continued)

Seneca College: Graduate Certificate Program in Fraud Examination and Forensic Accounting (two semester program)

Fraud Investigation - Advanced Using case studies, students are required to document, control and manage evidence. Students learn how to reconstruct income; examine procurement and bankruptcy fraud; study financial institution fraud schemes and identity theft; and study Internet and other “cybercrimes.”

Fraud Prevention and Detection:

Internal Auditing An examination of the roles and responsibilities of corporate boards of directors and management in directing effective anti-fraud programs including changes created by the Sarbanes-Oxley Act.

Computer Forensics and Data Mining A basic understanding of computer applications is presented to enhance the students’ ability to use computers to identify unusual transactions and other irregularities.

Litigation Support An examination of all aspects of litigation support, including research techniques, financial modeling, taxation issues, and loss quantification. In addition, the students study arbitration and mediation methods.

University of Wollongong: Master of Forensic Accounting (six course sequence)

Research Project B The course allows students to undertake an independent project within the area of globalization and financial fraud. Topics may include: transaction and banking fraud; currency issues (including forgery); financial fraud using the Internet; off-shore banking and illegal money transfers; underground banking; money laundering; tax havens; and financial terrorists.

(continued)

TABLE 1 (continued)

**Seneca College: Graduate Certificate
Program in Fraud Examination and
Forensic Accounting (two semester
program)**

Financial Statement Fraud The course provides an examination of financial statement fraud including the identification of misstatements in revenue, concealed liabilities and expenses, and improper disclosures. In addition, students will be exposed to asset valuation and inventory losses.

**Serving as an Expert Witness /
Communication** Students study the role of the expert witness and the common pitfalls of testifying.

PREVIOUS STUDIES OF FRAUD/FORENSIC CURRICULA

In previous studies, the demand for forensics courses, course content, and opinions about course content have been evaluated. The Rezaee et al. (2004) and Rezaee and Burton (1997) studies compared responses between samples of practitioners and academics about their views on demand for forensics courses, obstacles to implementation, and topic coverage.⁸ Peterson and Reider (1999; 2001) surveyed U.S. university accounting programs to determine their fraud course offerings and evaluated fraud/forensic accounting course syllabi to identify course objectives, and course topics as well as use of textbooks, term projects, and videos.⁹ The accounting faculty members surveyed in these previous studies were faculty from all areas of accounting specializations. Unlike these previous studies, the current study only includes accounting academics identified as teaching in the fraud/forensic area. Additionally, the present study is directed at identifying the content differences, if any, between fraud examination and forensic accounting courses as viewed by the sample group.

⁸The Rezaee and Burton (1997) study analyzed the responses from 196 U.S. academics from all teaching areas and 213 Certified Fraud Examiners. Rezaee et al. (2004) used responses from 153 U.S. academics primarily teaching auditing and financial accounting and 105 CPA practitioners collected with two separate survey instruments. In addition, twenty-one syllabi were collected for content analysis. A mailed, rather than electronic, survey was used in both studies.

⁹The Peterson and Reider (1999) study on fraud education was based on 215 U.S. faculty respondents (13 taught in the fraud/forensic area). The Peterson and Reider (2001) study was based on the collected course syllabi from a total sample of 16 U.S. faculty respondents. In the latter survey, respondents were partially selected from the university programs receiving support from the Association of Certified Fraud Examiners.

SAMPLE

To evaluate the content covered in fraud/forensic accounting courses, a sample of 111 faculty members who were identified as teaching fraud/forensic accounting courses at four-year universities was selected. Google searches were used to identify the sample because accounting programs listed in the *Accounting Faculty Directory* (Hasselback 2006) do not identify faculty members whose teaching area is in the fraud/forensic area.¹⁰ The sample included accounting programs in the United States, United Kingdom, Australia, Hong Kong, and Lebanon. Each identified faculty member, who had responsibility for teaching a fraud/forensic course, was sent an e-mail asking him/her to return a fraud/forensic accounting course syllabus in a subsequent e-mail response, and to click on a hyperlink within the e-mail which would take them to the online questionnaire. To increase the response rate, nonrespondents to the first e-mail were sent a second e-mail two weeks after the first mailing. Seven of the e-mails were returned as out-of office replies or incorrect e-mail addresses. Forty respondents completed the questionnaire, resulting in a response rate of 38%. Appendix A contains a copy of the questionnaire.

The e-mail survey consisted of 31, pretested questions used to collect demographic information about the university accounting programs and faculty opinions regarding selected course content choices. The fraud/forensic content selected for evaluation in the survey was chosen from the indexes of eleven books dealing with auditing, fraud, or forensic topics.¹¹

As can be seen in Table 2, approximately 74% of the respondents had Ph.D.s or DBAs, slightly more than 15% had masters' degrees, and the remainder were Doctors of Jurisprudence (JDs) or Ed.D.s. Males comprised approximately 77% of respondents. Slightly over 51% had been teaching more than twenty years, and less than 8% had been teaching for five years or less. Close to 13% taught in programs outside the United States and slightly more than 74% were either full or associate professors with the remainder being assistant professors (7.7%), senior lecturers (7.7%), lecturers (7.7%), or adjuncts (2.6%). The areas of accounting teaching expertise, as identified by the respondents with accounting backgrounds, included fraud/forensics (29.2%) followed by auditing

¹⁰ Google searches were used to identify .edu websites for fraud or forensic accounting courses, i.e., site:edu "fraud examination" or site:edu "forensic accounting" (see Long 2005). To be included in the sample, the search results had to identify a specific faculty member who had responsibility for teaching a fraud or forensic accounting course as disclosed within the accounting department's website. Four hundred fifty websites were searched in this manner to develop the sample. In addition, the previously reviewed 200 university programs (see Footnote 5) that met the selection criteria were included in the survey group. It is believed that 111 is a representative sample of the number of accounting faculty currently teaching fraud/forensic accounting courses. The list of university programs connected with the course development initiative at the Association of Certified Fraud Examiners (ACFE) was not used to identify respondents in the current sample as the ACFE's program is solely oriented toward developing fraud examination courses.

¹¹ The reference sources for topic selection on the survey were: 1) Albrecht et al., *Fraud Examination* (2006); 2) Anastasi, *The New Forensic: Investigating Corporate Fraud and the Theft of Intellectual Property* (2003); 3) Cendrowski et al., *Handbook of Fraud Deterrence* (2007); 4) Crumbley et al., *Forensic and Investigative Accounting* (2007); 5) Davia, *Fraud 101 Techniques and Strategies for Detection* (2000); 6) Hopwood et al., *Forensic Accounting*, (2008); 7) Hunton et al., *Core Concepts of Information Technology Auditing* (2004); 8) Montgomery, *Auditing Theory and Practice* (1940); 9) Pickett, *The Essential Handbook of Internal Auditing* (2005); 10) Wells, *Occupational Fraud and Abuse* (1997); 11) Whittington and Pany, *Principles of Auditing and Other Assurance Services* (2005).

(24.5%) and financial accounting (20.8%).¹² Additional respondent data collected but not shown in Table 2 showed: 1) the majority (68.4%) had taught an auditing course; 2) Eight-two percent had a Ph.D. with accounting concentrations while the others had a discipline concentration in law, tax law, education, management information systems, or management; and 3) the most recent degree was earned between 1970 and 2004 (median 1992).

TABLE 2
Summary Demographic Data for the Sample Group
(number of useable responses shown in parentheses)

<u>Education (39 responses)</u>	<u>Percent</u>
Ph.D/DBA	74.3%
Masters	15.4%
Other	10.3%
<u>Gender (39 responses)</u>	
Male	76.9%
Female	23.1%
<u>Number of Teaching Years (39 responses)</u>	
Five or less	7.7%
6-10	0.0%
11-15	25.6%
16-20	15.4%
More than 20 years	51.3%
<u>Teaching in U.S. (39 responses)</u>	
U.S.	87.2%
Outside U.S.	12.8%
<u>University Rank (39 responses)</u>	
Full Professor	48.7%
Associate Professor	25.6%
Assistant Professor	7.7%
Senior Lecturer	7.7%
Lecturer	7.7%
Tutor/Assistant Lecturer	0.0%
Part-time Adjunct	2.6%
Other	0.0%

(continued)

¹²Even though 70.8% of the respondents did not identify their area of specialization as fraud/forensics, it does not mean they did not teach in the fraud/forensic area as all the respondents in the sample were initially selected because of their association with a fraud examination or forensic accounting course at their university.

TABLE 2 (continued)

Area of Accounting Teaching Expertise
(select all areas that apply, 106 responses)

Auditing	24.5%
Financial	20.8%
Fraud/Forensics	29.2%
International	1.9%
Cost/Management	9.4%
Systems	6.6%
Tax	4.7%
Other	2.8%

Number of Fraud/Forensic Courses
in Program (40 responses)

Zero	0.0%
One	65.0%
Two	22.5%
Three	5.0%
Four	2.5%
Five	2.5%
Six	2.5%

Survey data was also collected about the accounting programs represented in the sample group. Sixty-five percent of the respondents only had one fraud/forensic course in their program. Slightly more than 22% had two courses, and the rest had anywhere from three to six courses. Fifty-seven and a half percent of these were graduate courses and the rest were undergraduate courses. The majority of the business programs (62.5%) were accredited by the Association to Advance Collegiate Schools of Business (AACSB) and 37.5% of the accounting programs were also accredited by the AACSB. Other business programs (17.5%) were accredited by associations such as the International Assembly for Collegiate Business Education and the Association of Collegiate Business Schools and Programs. The remaining programs (20%) were not accredited.

RESULTS

Survey of Educators

The respondents were asked to evaluate the following two statements and pick the one they thought was most acceptable as a "thumbnail" definition of fraud/forensics accounting:

One: Fraud/forensic accounting is the practice of rigorous data collection and analysis through financial examinations, interviewing techniques, and litigation support consulting.

Two: Fraud/forensic accounting is the practice of rigorous evidence collection and analysis of theft and the misuse or misapplication of the organization's financial resources and/or assets.

Statement One was written to include a more expansive definition of fraud/forensic accounting by including the terms “interviewing techniques” and “litigation support consulting” which are more likely found in a broader view of fraud/forensic accounting courses. Statement Two was a less expansive definition with more focused attention on financial reporting. Slightly more of the respondents (52.5%) agreed with Statement Two, indicating that fraud/forensics is slightly more closely related to misapplication of an organization’s financial resources as opposed to the consultative roles in Statement One which go beyond the respondents’ view of fraud/forensic evidence investigations.

The remaining questions in the survey asked the respondents to make choices about the fraud/forensic content they considered to be more important for coverage.¹³ The respondents’ choices were used to identify differences in content coverage between fraud examination compared with forensics. In the first of this series of subject-choice questions, the respondents ranked a series of fraud and forensics course topics in order of their importance with “1” being the most important and “10” being the least important.¹⁴

In the first question, the topics representing the wide-ranging forensics perspective were: (1) the psychology of criminology; (2) corporate culture reviews; (3) investigating electronic evidence; (4) damage/loss valuation analysis; and (5) litigation consulting. In contrast, traditional auditing or fraud examination topics were considered to be: (1) fraudulent financial reporting; (2) examination of changes in records; (3) net worth analysis; (4) flowcharting internal controls; and (5) applying Benford's Law.

The respondents’ most often selected and least often selected choices were tallied and averaged. The following results, as ranked by the respondents, are listed from most important to least important along with the average score and standard deviation for each topic choice, respectively.¹⁵

¹³These topics were selected from the indexes in the books listed in Footnote 11. The books represent the content in auditing, fraud examination, and forensics written by academics and practitioners from 1940 to 2008. The process of selecting topics for inclusion in the questionnaire began by listing all auditing/fraud/forensic topics in each book's index. All duplicate topics in the initial list were eliminated. At this point, the new list was reviewed and topics considered less typical of a broad or narrow approach (i.e., forensic or fraud, respectively) were dropped from the list. The remaining topics were classified as narrow or broad by two subject experts, reviewed, and matched for inclusion in the questionnaire. The topics in the online questionnaire were then pre-tested by other accounting instructors to determine final topic matches.

¹⁴These subject-choice questions are representative of surveys, such as Likert surveys, which ask respondents to make an opinion selection within a single question. Ordinal questions of this nature do not explain the true mathematical importance of one item over the other, and they do not identify the importance of each subject choice in relationship to all of the other items listed in the questionnaire.

¹⁵The average score is the weighted average question score (response times number responding) divided by the total number of responses. Tests of significance (Mann-Whitney) indicate there were no significant differences at the .05 level of significance between those respondents who chose Statement 1 and Statement 2 definitions of fraud/forensics and the weighted rankings that they placed on the subjects. Other tests of significance based on the

- Fraudulent financial reporting analysis (3.00; 3.38)
- The psychology of criminology (4.23; 2.07)
- Examination of changes in records (4.38; 2.32)
- Corporate culture reviews (5.03; 3.11)
- Investigating electronic evidence (5.28; 2.27)
- Net worth analysis (5.67; 2.83)
- Damage/loss valuation analysis (5.95; 2.57)
- Litigation consulting (6.33; 2.55)
- Flowcharting internal controls (7.21; 2.05)
- Applying Benford's Law (7.70; 2.27)

As expected, the average scores indicate the most important topic in the accounting fraud/forensic area is fraudulent financial reporting analysis. Although another narrow topic (i.e., examination of changes in records) was selected third, it is interesting to note that the top five topics included three more expansive subjects: psychology of criminology, corporate culture reviews, and investigating electronic evidence.¹⁶ Net worth analysis and damage/loss valuation were selected sixth and seventh in importance, and the three least important topics were identified as applying Benford's Law, flowcharting internal controls, and litigation consulting.

A higher standard deviation provides an indication of more disagreement among the respondents to the ranking of a topic. The standard deviation for fraudulent financial reporting and corporate culture reviews exhibited the first and second highest standard deviation response patterns, respectively. The respondents held a wider range of opinion on the importance of these two topics in the fraud/forensic curriculum than any of the others listed in the question. Fraudulent financial reporting is a fairly traditional topic so it was surprising to find a wider range of opinions regarding its importance. Corporate culture reviews is a subject that is less likely to be found in a traditional fraud/forensic curriculum. The purpose of a cultural review is to identify corporate behaviors that contribute to increasing fraud risks. The higher standard deviation again suggests a wide range of opinions among the respondents as to its importance in the fraud/forensic accounting curriculum. Smaller standard deviations were found for the remaining subject-item choices.

The remaining fifteen questions in the survey requested respondents to select from two fraud/forensic accounting topic choices, the one they considered to be the more important subject in a two-course fraud/forensic accounting course sequence.¹⁷ Figure 3 shows the percentage responses for each question. In Figure 3, the Series One (dotted line) represents topics more related

Statement 1 and Statement 2 respondents' selections and fraud/forensic topic choices in the study were not significant. It is difficult to determine the reasons for this result. It may be due to respondent's general opinion that there is little distinction between fraud and forensics, or it may be that Statement 1 and 2 do not adequately separately define "fraud" from "forensics" as viewed by the respondents.

¹⁶The topic choice "examination of change in records" was selected from Montgomery's (1940) *Auditing Theory and Practice* which reflects on the resilience of the topics in that textbook.

¹⁷The respondents were asked to consider the topics in two courses so that the respondents would not feel restricted by course time limitations.

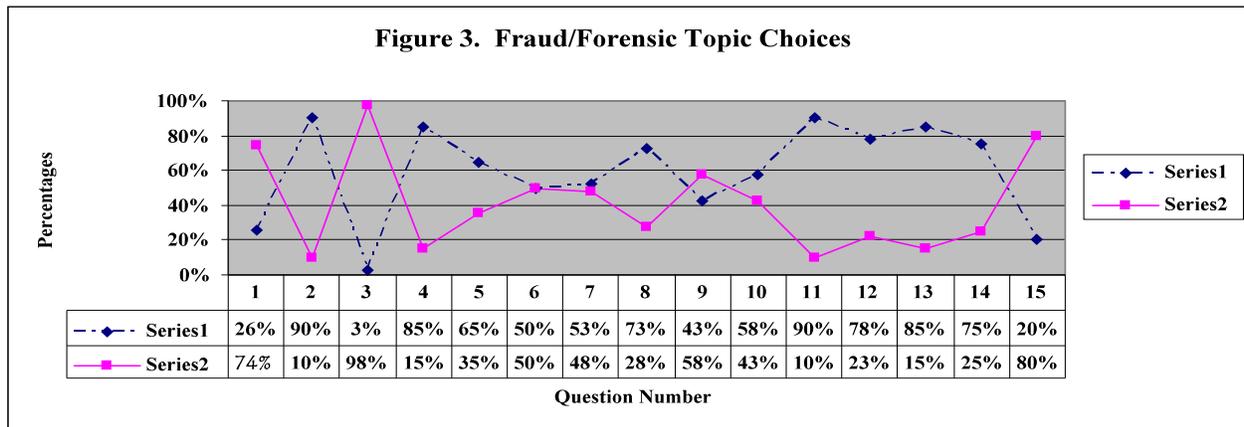


TABLE 3

Fraud/Forensic Topic Alternatives

Question Number	Auditing/Fraud Examination Focused Topics (Series 1)	Wider-Ranging Forensic Topics (Series 2)
1	Forged Check Analysis	Chain of Custody Reporting
2	Understanding the Separation of Accounting Duties	Understanding the Use of Encryption Applications
3	Learning about Compliance Accounting	Learning about Interviewing Techniques
4	Studying Occupational Fraud	Studying Identity Theft Fraud
5	Studying Kiting	Studying E-mail Spoofing (fake e-mail)
6	Writing an Internal Control Questionnaire	Performing a Preliminary Hard Drive Forensic Inspection
7	Auditing Internal Controls	Identifying Accounting Areas Where Judgmental Control is Exercised
8	Studying False Billing Fraud	Studying Threats of Unauthorized Access
9	Payroll Fraud Analysis	Lost Revenue Analysis
10	Preparing Common-size Financial Statements	Preparing Valuation Projections
11	Studying Methods of Financial Statement Fraud	Studying Cyber Fraud
12	Studying Cash Larceny	Studying Password Fraud
13	Studying Inventory Fraud	Studying Wireless Risk Assessment
14	Understanding the Techniques of Data Mining	Understanding the Techniques of Recovering Electronic Evidence
15	Studying Inventory Statistical Sampling	Studying Accounting Anomaly Statistical Analysis

to auditing/fraud course approaches. The Series Two (solid line) represents topics more likely found when a broader forensic perspective is adopted.

The topic choices, presented in a random order on the questionnaire, are classified into Series 1 (auditing/fraud) and Series 2 (forensics) in Table 3.¹⁸ Although not all readers will agree that the topics fit neatly into the Series 1 and 2 divisions, it is notable that the Series 2 topics are selected less often as being important (see Figure 3).¹⁹ Thus, the respondents' choices tend to support a pedagogical approach based on an auditing/fraud perspective.

It is worth noting that in eight of the questions (Question 2, 4, 5, 6, 11, 12, 13, and 14), the respondents were presented a choice between a traditional study area and one dealing with digital data analysis.²⁰ In this sequence of questions, the respondents' selections supported content based on a traditional audit/fraud examination curriculum. In six of these questions (Question 2, 4, 11, 12, 13, and 14), the respondents overwhelmingly selected (fifty basis points or more) a traditional audit/fraud alternative over a topic dealing with digital forensics. Only in Question 6 did the respondents believe an electronic investigation technique, hard drive forensic inspections, and a more traditional topic, writing an internal control questionnaire, to be of equal importance. Today, as most financial frauds involve electronic evidence, it is noteworthy that topics specifically dealing with electronic data analysis, such as cyber fraud and recovering electronic evidence, did not exhibit a stronger respondent choice pattern with less variance.²¹

In three other questions with wider percentage variations in the respondents' selections (Questions 1, 3, and 15), the respondents chose content more representative of a forensic perspective (e.g., chain of custody reporting, interviewing techniques, and anomaly statistical analysis). In general, the respondents support an audit/fraud examination perspective.

¹⁸Tests of significance were conducted to determine if significant differences existed (.05 level of significance) between those respondents who had taught auditing or had not taught auditing and their topic choices in these fifteen questions. A significant difference was found between respondents grouped as having taught auditing and not having taught auditing and the auditing/fraud examination topics in column one in Table 1. A significant difference was also found for those who had taught or not taught auditing and wide-ranging topic choices in Table 1. These results tend to indicate that those faculty members who have taught an auditing course may have a different view on the topics that should be included in a fraud/forensic course from those faculty members who have not taught an auditing course. This result should be considered as an area for further study.

¹⁹Table 1 topics were selected and matched based on a three-stage reiteration and elimination selection process based on the fraud/forensics subjects identified in the indexes of the books listed in Footnote 11. See Footnote 13 for additional explanation.

²⁰Question 4 uses "identity theft fraud" as a choice for the respondents. Although identity theft may still be based on thieves jumping into dumpsters to collect confidential information, identity theft as it relates to accounting practitioners is concerned with such things as being alert to the most recent Internet "phishing" scams used to defraud their clients.

²¹In Question 14, it can be argued that data mining is a form of electronic evidence recovery, but data mining is not performed for the purpose of recovering electronic courtroom evidence. Data mining is performed to query databases and analyze trends or anomalies from expected trends. Data mining can destroy electronic courtroom evidence by changing time stamps in the data needed in the courtroom.

To further analyze the content decisions in fraud/forensic courses, the syllabi and course descriptions from twenty-nine courses were reviewed.²² The results of the analysis are presented in the next section of the paper.

Content Analysis of Syllabi

NVivo software was used to preliminarily analyze the collected syllabi for differences between the content in courses described as "fraud" or "forensic." NVivo software is designed for the qualitative analysis of unstructured data using indexing, searching, and grounded theory development. It quickly analyzes data patterns from large unstructured databases.²³ Here, the analysis began with sorting and coding the topics found in the collected syllabi.²⁴ Seventeen of the courses were titled "fraud examination" and the remaining twelve were labeled "forensic accounting" courses. Each syllabus provided different levels of detail about the topics listed. Some syllabi simply listed the topics and others provided extensive content discussion.

The content analysis began with the exploration of course study topics in the collected syllabi.²⁵ The initial examination was directed at determining how far course topics ranged beyond the more traditional fraud examination topic, such as occupational fraud, tax fraud, or discussions of the fraud triangle. Examining the syllabi began with searching, sorting, and indexing the terms and surrounding phrases shown in Table 2 under the heading "Course Study Topics." Nodes were created for each of the terms and phrases in Table 2. Unlike the search features found in word processing programs, NVivo nodes identify the characters surrounding the terms and separately excerpt the selection into a new node.²⁶ Once the nodes are identified, it is possible to study additional relationships between the various groupings. By reading the excerpts in the node, it is possible to determine if, for example, "computer" is selected because it was a topic related to the study of *computer forensics* or whether a fraud was committed in a *computer* company. In the former case, it would be included as a tallied course topic.

²²Twenty-nine fraud/forensic accounting course syllabi and course descriptions were collected. Twenty syllabi were submitted by respondents to the survey and nine other syllabi were collected from Internet searches. The same criteria for inclusion of all syllabi were used as was used for the selection of survey respondents.

²³The abbreviated nature of the course topics listed in the syllabi did not allow for coding beyond the initial identification of course subjects in this preliminary analysis. The searched topics were based on an initial review of the index list and preliminary review of the syllabi.

²⁴For examples of qualitative studies using NVivo software in educational research and descriptions of NVivo applications see: Medley (2001) and Atheton and Elsmore (2007).

²⁵NVivo is qualitative data analysis software. Other such software is Atlas.ti, Qualrus, and Ethnograph packages. For information about the use of NVivo software see Richards (1999). Additional information is also available at the NVivo website at: <http://www.qsr.com.au>. Prior to beginning the analysis with the NVivo software package, the collected surveys had to be recoded for entry into the data analysis software. Initially all the collected course syllabi were entered into the package as rich text format. At this point, the data was then explored and placed into fraud and forensic nodes for further linking of course topics. Nodes represent the qualitative indexing system developed from the raw database for analysis.

²⁶The number of characters on each side of the term is determined by the user of the software.

TABLE 4
Course Content Analysis

<u>Course Content:</u>	<u>Fraud Examination Coverage</u>	<u>Forensic Accounting Coverage</u>
1. Fraud Triangle	4	5
2. SAS 99	4	4
3. Certified Fraud Examination or Certified Fraud Examiners	7	2
4. Benford's Law	2	1
5. Interviewing	7	2
6. Computer Forensics*	0	4
7. Cyber Crime*	2	1
8. Electronic Evidence*	0	0
9. Valuation Analysis*	0	0
10. Litigation Subjects*	2	4
11. Internet Forensics*	1	1

*wider-ranging forensic topics

Topics 1 to 5 in Table 4 are representative of the content in traditional fraud examination courses (Topic 6), and other topics marked with asterisks, are less likely to be found in a fraud examination course. Course topics such as cyber crimes, understanding electronic evidence, using the Internet to collect forensic data, loss valuations, and litigation consulting are wider-ranging topics that go beyond fraud examination.

In Table 4, the support for a traditional fraud curriculum in the collected syllabi is apparent when the number of course containing topics without asterisks (Topics 1 through 5) are compared with the course containing topics with asterisks (Topics 6 through 11). The former group represents a more traditional perspective (38 syllabi observations) and the latter represents a stronger forensics orientation (15 containing observations). Additionally, the Certified Fraud Examiner's (CFE) program and its corresponding topics receive coverage in seven courses or 24% of the syllabi. The CFE coverage may be a result of the free supplemental support from the ACFE program for universities establishing fraud examination courses. Although it is difficult to draw any definitive conclusions from Table 4, it is worth noting that the traditional view dominates course content in the collected syllabi.

CONCLUSION

In 1986, the American Institute of Certified Public Accountants viewed forensic practice as part investigative accounting and part litigation support. The forensic practices outlined at that time corresponded with a broad definition of the term "forensics" and fraud was viewed as a subset of forensics (American Institute of Certified Public Accountants 1986). In this view, forensic accounting includes the traditional fraud examination with a combination of litigation support services, such as valuating economic losses, and dispute resolution services, such as those related to identifying hidden assets (Abernethy 2004).

The results of the survey in this paper show a more consolidated set of opinions held by the sample group than might be expected. The content having the highest degree of interest to the survey respondents is related to the fraud examination areas and not the wider-ranging forensic accounting topics. The fraud/forensic curriculum is being defined as fraud examination. Even those instructors who teach in the "forensic" accounting area cover topics more closely related to fraud examination than forensics. The implications are that fraud and forensics accounting courses are not two distinct areas of accounting pedagogy. From this perspective, it means that areas beyond financial statement fraud such as digital investigations, criminology, and to some degree litigation services are considered to be outside the fraud/forensic curriculum.

Course developers need to know that there are conceptual differences between fraud examination and forensic accounting. Forensic investigations are broad and far-ranging. Accounting curriculum developers need to determine whether they should base their program revisions on a fraud model, a more wide-ranging forensics model, or a combination of the two approaches. Such decisions affect the direction of learning and topic coverage in the accounting curriculum. Just as accounting practitioners are reconsidering their professional roles in providing future client services, accounting academics should also consider the implications their revisions will have on meeting the future needs of our profession.

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APPENDIX A
A BRIEF ACCOUNTING PROGRAM SURVEY

The survey is designed to collect background information and opinions about topics covered in accounting fraud/forensic courses. All the data collected in this survey will only be reported in a summary form and all questionnaire responses are considered CONFIDENTIAL.

Part I: Background Data

1. What year did you receive your most recent degree?
2. What is your highest university degree? Ph.D.?, Masters?
3. What is your gender? Male or Female
4. How many years have you been teaching in a university environment?
 - a. Five years or less
 - b. 6-10
 - c. 11-15
 - d. 16-20
 - e. More than 20 years
5. Please identify your geographical location as: "Inside" the United States or "Outside" the United States. Thank you.
 - a. Inside the U.S
 - b. Outside the U.S.
6. What is your rank?
 - a. Full Professor
 - b. Associate Professor
 - c. Assistant Professor
 - d. Senior Lecturer
 - e. Lecturer
 - f. Tutor/Assistant Lecturer
 - g. Part-time adjunct
 - h. Other
7. Do you now, or have you in the past, taught Auditing in a university accounting program?
 - a. Yes
 - b. No
8. Does your highest degree include an accounting area concentration? An accounting area concentration includes more than one course in accounting subjects such as theory, auditing, systems, financial, cost/managerial, and accounting history, for example. If you answer "Yes", please skip to Question No. 10.
 - a. Yes
 - b. No
9. If you answered "No" to Question 8, please identify the discipline area (or subject area concentration) which best describes your highest degree.

10. If you answered "Yes" to Question 8, what are your areas of accounting teaching expertise? Please identify all that apply.

Auditing	Cost/Managerial
Financial	Systems
International	Tax
Fraud/Forensics	Other

Part II. Accounting Program Questions

11. How many separate fraud/forensic courses are offered in your accounting program each academic year (including summer courses)? If the same course is offered twice a year, please count it as one separate course not two.
- | | |
|------------------|-----------------|
| a. None | e. Four courses |
| b. One course | f. Five courses |
| c. Two courses | g. Six courses |
| d. Three courses | |
12. Of the fraud/forensic courses that you identified in Question 11, how many of these courses are graduate level accounting courses?
- | | |
|------------------|-----------------|
| a. None | e. Four courses |
| b. One course | f. Five courses |
| c. Two courses | g. Six courses |
| d. Three courses | |
13. Is your business program accredited by the American Association of Collegiate Schools of Business (AACSB)? If your program is accredited by another accrediting agency, please list it under "Other." Thank you.
- | | |
|--------|----------|
| a. No | c. Other |
| b. Yes | |
14. Is your accounting program separately accredited by the American Association of Collegiate Schools of Business (AACSB)?
- | | |
|-------|--------|
| a. No | b. Yes |
|-------|--------|
15. Which of the following thumb-nail definitions of accounting fraud/forensics do you agree with the most? It does not have to be 100% agreement
- One. *Forensic/fraud accounting is the practice of rigorous data collection and analysis through financial examinations, interviewing techniques, and litigation support consulting.*
- Two. *Forensic/fraud accounting is the practice of rigorous evidence collection and analysis of the misuse or misapplication of the organization's financial resources and/or assets.*
- | |
|----------------------------------|
| a. I tend to agree more with One |
| b. I tend to agree more with Two |

16. Please rank the following course topics in their order of importance to a curriculum in accounting fraud/forensics courses with “1” being the most important and “10” being the least important.

Please give each item a different ranking from 1 to 10.

Corporate culture reviews	Damage/loss valuation analysis
Examination of changes in records	The psychology of criminology
Net worth analysis	Flowcharting internal controls
Litigation consulting	Applying Benford’s law
Fraudulent financial reporting analysis	Investigating electronic evidence

Part III. Topic Selections

The next series of fifteen questions present you with a series of fraud/forensic topic choices..... and it can be rapidly finished.

Please select the topic you believe has the most appropriate place in a **TWO-course fraud/forensic course sequence** (either graduate or undergraduate).

17. Please select one. Forged Check Analysis.....Chain of Custody Reporting
18. Please select one. Understanding the Use of Encryption Applications....Understanding the Separation of Accounting Duties
19. Please select one. Learning about Interviewing Techniques.....Learning about Compliance Auditing
20. Please select one. Studying Identity Theft Fraud....Studying Occupational Fraud
21. Please select one. Studying Kiting....Studying E-mail spoofing (fake e-mail)
22. Please select one. Performing Preliminary Hard Drive Forensic Inspection....Writing Internal Control Questionnaire
23. Please select one. Auditing Internal Controls.....Identifying accounting areas where Judgmental Control is exercised
24. Please select one. Studying False Billing Fraud.....Studying Threats of Unauthorized Access
25. Please select one. Payroll Fraud Analysis.....Lost Revenue Analysis
26. Please select one. There are only **five** more choice questions left. Thank you.
Preparing Common-size Financial Statements.....Preparing Valuation Projections
27. Please select one. Studying cyber fraud.....Studying methods of financial statement fraud

28. Please select one. Studying Cash Larceny.....Studying Password Fraud
29. Please select one. Studying Inventory Fraud.....Studying Wireless Risk Assessment
30. Please select one. Understanding the techniques of Recovering Electronic Evidence.....Understanding the techniques of Data Mining
31. Please select one. Studying Inventory Statistical Sampling.....Studying Accounting Anomaly Statistical Analysis

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THANK YOU FOR YOUR HELP.