

## A Comparison of U.S. Forensic Accounting Programs with the National Institute of Justice Funded Model Curriculum

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### I. INTRODUCTION

For nearly two decades, fraud surveys consistently have reported that fraud is a widespread problem throughout the country (e.g., KPMG, 1994; 1998; 2003; ACFE, 1996; 2014). In part because of widely publicized fraudulent financial reporting scandals such as Enron, WorldCom, HealthSouth, Tyco, Xerox and others, over a decade ago leaders in the accounting profession began to call for forensic accounting education to be provided for accounting students (Melancon, 2002). Forensic accounting was being reported as one of the hottest career tracks for accounting students at the time (Bundy *et al.*, 2003; Levine, 2002; MacDonald, 1996). Thus, the demand for students with forensic accounting education was increasing, with the supply side of colleges and universities being strongly encouraged to respond by providing the necessary coursework.

During approximately this same time period, the U.S. National Institute of Justice (NIJ) Office of Justice Programs awarded a \$614,000 grant to West Virginia University's Division of Accounting to support efforts to develop a model curriculum in forensic accounting and fraud investigation (Fleming *et al.*, 2008). This project involved the participation of a technical working group comprised of 46 subject-matter experts (many with CFE certificates) representing a variety of professional organizations to identify the knowledge, skills, and abilities needed by forensic accountants and, consequently, to assist educators in developing appropriate related course content and programs (Kranacher *et al.*, 2008).

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These 46 subject-matter experts represented a variety of stakeholder groups, such as the Securities and Exchange Commission (SEC), the Internal Revenue Service (IRS), the Federal Bureau of Investigation (FBI), the Association of Certified Fraud Examiners (ACFE), the Public Company Accounting Oversight Board

(PCAOB), the Institute of Internal Auditors (IIA), Ernst & Young, KPMG, PricewaterhouseCoopers, Deloitte, and several universities across the U.S. During a two-year period, these individuals worked together to develop educational guidelines for fraud investigation and forensic accounting education, which are classified as prerequisite knowledge, core fraud and forensic accounting exposure, and in-depth fraud, but little forensic accounting material (WVU, 2007).

Given the demand for forensic accounting education and the fact that educators have responded to this demand (e.g., Seda and Kramer, 2014), this article investigates the degree to which educators are following the NIJ suggested model forensic accounting curriculum. The remainder of this article is organized as follows. The next section provides an overview of the literature on forensic accounting education research, including a discussion of the NIJ model curriculum of forensic accounting and fraud investigation. Our research method and results are then discussed. We end with our conclusion, limitations of our study, and directions for future research.

## **II. LITERATURE REVIEW**

### ***Availability of Forensic Accounting Education***

Research on education in forensic accounting or fraud investigation initially found that it was quite scarce.<sup>1</sup> Groomer and Heintz (1994) found six of 19 internal auditing courses surveyed included the

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<sup>1</sup> The terms “fraud examination” (or investigation) and “forensic accounting” are not considered synonymous by the majority of the accounting profession, although a minority use them interchangeably. The majority view is that fraud examination is a subset of forensic accounting. For example, there is a widely used textbook using both terms, which underscores a distinction: *Forensic Accounting and Fraud Examination* (Hopwood *et al.*, 2012). Also, there is another widely used textbook not including fraud examination in its title, but rather, using the broader term that

general topic of employee and management fraud, but coverage was minimal, limited to an average of 8.2% of total class time. Rezaee *et al.*, (1996) identified four universities that taught forensic accounting and discussed the course content in detail. Academic articles focused on education in forensic accounting or fraud investigation were rare prior to the late 1990s (Rebele *et al.*, 1998).

However, later studies found an increase in the number of colleges and universities offering this type of education, as well as the quantity of such courses offered within a school. For example, Peterson and Reider (1999) surveyed universities and found a majority of respondents (84%) included fraud topics typically in the first auditing course, but sometimes in advanced auditing (15%). They also identified 13 universities that offered a specific course – a new, emerging trend – on forensic accounting. A comparable study conducted at the same time by different researchers found similar results, identifying 13 universities (5% of respondents) that offered a forensic accounting course and 11 (4%) that had plans to offer such a course in the near future (Buckhoff and Schrader, 2000). Combining the results from these latter two studies, Peterson and Reider (2001) identified 19 universities that offered a forensic accounting course and examined syllabi for specific content and learning activities, identifying similarities and differences. Based on this analysis, Peterson and Buckhoff (2004) described in detail the most comprehensive fraud examination course identified from this prior research, a course that had evolved and matured over several years, and was taught by a Ph.D. who was also a practicing forensic accountant with several years of experience. Course enrollments, objectives, content, assignments, and grading were provided and discussed.

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includes many more topics: *Forensic and Investigative Accounting* (Crumbley *et al.*, 2013). Further, in 2008 the AICPA began to offer a Certified in Financial Forensics (CFF) professional credential program for CPAs who specialize in forensic accounting (Davis *et al.*, 2009). Among other requirements, candidates must pass the CFF exam, which includes questions on fundamental forensic knowledge (laws, courts and dispute resolution; planning and preparation; information gathering and preserving; discovery; reporting, experts and testimony), as well as specialized forensic knowledge (bankruptcy, insolvency and reorganization; computer forensic analysis; economic damages calculations; family law; financial statement misrepresentations; fraud prevention, detection and response; and valuation). Note that only one of the seven specialized forensic knowledge areas directly relates to fraud examination.

Consistent with these findings of limited forensic accounting availability during the 1990s, Carnes and Gierlasinski (2001) reported that universities were slow in providing forensic accounting education to students even though the changing accounting environment was demanding students be taught fraud investigation and detection skills.

Some research on forensic accounting education availability extended outside the business college, considering the multidisciplinary nature of the profession. For example, Bundy *et al* (2003) found only two colleges offered a degree in economic crime investigation, both of which lacked the necessary extensive accounting background. Focusing on offerings within the business college, they also found that accounting programs had extremely limited offerings in forensic accounting.

At about this same time, the Association of Certified Fraud Examiners (ACFE) established its Higher Education Committee, whose purpose was to promote and increase fraud examination education in universities and colleges (Carozza, 2002). As part of this initiative, now called the “Anti-Fraud Education Partnership program,” the ACFE offers free educational resources – such as DVDs, case studies, and reference materials – to educators who are ACFE members but they must teach a 3-credit course titled “Fraud Examination.” This effort to provide accounting students with this fraud education was recognized by the American Accounting Association by awarding the “Innovative Accounting Education Award” in 2002 to an ACFE representative. The ACFE website currently lists over 400 colleges and universities participating in its program, which began in response to the “unprecedented need for fraud examination education at the university level” and has grown tremendously since its inception ([www.acfe.com](http://www.acfe.com)).

Consequently, perhaps due both to the increasing awareness within the accounting profession of the importance of providing forensic accounting education to accounting students and the related initiation of the ACFE program, subsequent research found an increasing number of universities began to offer this education. For example, Rezaee *et al.* (2004) found 25 respondents (16%) offered a separate

forensic accounting course and 77 respondents (50%) integrated forensic accounting education throughout accounting and auditing courses. They found that practitioners had a much more expanded definition of forensic accounting rather than the narrower academic definition. In 2008, the AAA's premiere academic accounting education journal, *Issues in Accounting Education*, devoted one of its four annual issues solely to this topic of forensic accounting education. Among other related articles in this focused issue, Fleming *et al.* (2008) describe in detail the four-course graduate certificate in forensic accounting and fraud investigation available at West Virginia University – the recipient of the NIJ grant. The same issue published articles on related programs in other universities, such as that which discussed the executive graduate in accounting degree with a concentration in forensic accounting program offered by Florida Atlantic University (Young, 2008), and another article that described the undergraduate major in economic crime investigation, the graduate degree in economic crime management, and the graduate business degree program in economic crime and fraud management at Utica College (Curtis, 2008).

At the time WVU received NIJ funding to work with dozens of subject-matter experts on developing a model curriculum in forensic accounting education – late 2003 – few colleges or universities provided such coursework. Subsequent to this work, and prior to its research being widely available, other forensic accounting education research began to appear on the horizon. For example, O'Bryan (2009) described the development of an interdisciplinary 21-hour minor in fraud examination at Pittsburg State University. Seda and Kramer (2009) surveyed accounting educators and found 48 colleges or universities offered a separate forensic accounting course; 11 offered a separate forensic accounting track; 48 integrated coverage through accounting and auditing courses; and 36 did not cover forensic accounting at all. Of those, 19 planned to offer forensic accounting education within five years or less. They also identified 11 schools (including one outside of the US, underscoring the international relevance of this education) that created a separate forensic accounting undergraduate or graduate degree program, and 10 schools that offered a forensic accounting certificate. Smith and Crumbley (2009) reported that 65% (n=26) of 40 respondents only had one fraud/forensic course in their program, while slightly more than

22% (n=9) had two courses, and 12.5% (n=5) had from three to six courses. Meier *et al.* (2010) focused on AACSB accounting accredited schools (n=166) to determine the extent to which they have added forensic accounting education to their curriculum, and found only four had such a program. However, they found that 50 of these AACSB accounting accredited schools offered one or two separate forensic accounting courses, consistent with other studies at the same time that found an increase in the extent of forensic accounting education.

Apostolou *et al.* (2010) reviewed all articles published from 2006-2009 in six highly regarded academic accounting education journals, and noted an increase in articles related to fraud and forensic issues and ethics, reflecting the changing and increasing emphasis on these topics.

More recently, Seda and Kramer (2014) focused on the availability of forensic accounting education worldwide. Internationally, they found 447 colleges and universities offer a single forensic accounting course, 81 offer a forensic accounting certificate or degree program, and 106 offer a forensic accounting concentration or minor.

Thus, the research consistently finds an increase in the availability of forensic accounting education during the past two decades.

### ***Perceptions of Various Stakeholders Regarding Forensic Accounting Education***

In addition to discovering information about the availability of forensic accounting education, researchers also have focused on perceptions of various stakeholders regarding this education. One of the earliest studies surveyed chief financial officers of Fortune 500 companies and found that over 77% of the respondents believed that forensic accounting courses should be incorporated into the accounting curriculum. Further, the authors found that over 55% of the respondents thought that accounting students should be advised of and encouraged to consider career opportunities in the forensic accounting field (Rezaee *et al.*, 1993). A subsequent study surveyed Certified Fraud Examiners (CFEs) and academicians (Rezaee and Burton, 1997) and found that a majority of respondents agreed that forensic accounting

education should be included in the accounting curriculum. However, practitioners preferred a separate course and academicians preferred integration of forensic accounting topics throughout all accounting and auditing courses.

In a study focusing on studying the potential employment value of forensic accounting education, Mounce and Frazier (2002) provided some empirical evidence that the hiring potential of a candidate seeking a corporate accounting position of assistant controller is enhanced by the completion of a forensic accounting course.

Merservy *et al.*, (2006) surveyed CFEs and found they perceived that auditors were lacking forensic skills in five critical areas: interrogation and interviewing; evidence sources, including the proper collection, evaluation, and documentation; fraudulent financial statement schemes; legal issues relating to fraud; and computer fraud techniques. DiGabriele (2008) surveyed practitioners, academics, and users of forensic accounting services to aid educators in developing forensic accounting curriculum. He found that the respondents believed a forensic accountant should possess skills in critical thinking, unstructured problem solving, and oral and written communication, in addition to investigative flexibility, analytical proficiency, legal knowledge, deductive analysis, and the ability to maintain composure.

Davis *et al.*, (2009) surveyed academics and Certified Public Accountants (CPAs) and found they had an overall preference that effective education for a forensic accountant could be provided by incorporating case studies within a traditional classroom setting. Academics strongly believed forensic accounting education should be delivered as a graduate program, while CPAs preferred it be a component of an undergraduate program.

Smith and Crumbley (2009) surveyed accounting academics identified as teaching in the fraud/forensic area from accounting programs in the U.S. as well as four other countries, which again emphasizes the international relevance of this education. They found the fraud/forensic curriculum is being defined as fraud examination (a narrow approach), not the wider-ranging definition of forensic

accounting (see earlier footnote 1). McMullan and Sanchez (2010) surveyed forensic professionals about their opinions on the necessary skills, education requirements, and training for forensic accountants. A majority (59%) believed an undergraduate degree was sufficient education, with a degree in either accounting or computer information systems.

Thus, while studies involving various stakeholders on forensic accounting education have increased in frequency recently, there appears to be no consensus yet as to the ideal content of such education.

### ***The NIJ-Funded Forensic Accounting Model Curriculum***

In 2003 the NIJ Office of Justice Programs awarded a substantial grant of \$614,000 to West Virginia University's Division of Accounting to support efforts to develop a model curriculum in forensic accounting and fraud investigation. When this NIJ grant was received by WVU, only a few schools were offering multiple courses in this area of forensic accounting education as indicated in the literature review. Not only were the schools were using dramatically differing names, course titles, and descriptions, but they also had offerings that varied from few to many courses. Hence, the goal was to develop a common body of knowledge in forensic accounting in order to simplify and unify the related curriculum and content delivery. Specifically, the following task statement was developed:

*As academic institutions contemplate the addition of fraud and forensic accounting into their curricula, there is a need for an in-depth examination of the knowledge, skills and abilities necessary for individuals to function in these fields. The objective of this project is to develop a model educational curriculum in fraud and forensic accounting to aid academic institutions, public and private organizations, practitioners, faculty, and prospective students interested in developing professionals with the skills and abilities necessary to excel in these emerging fields (WVU, 2007, p. 10).*

To accomplish this task, this two-year project involved the participation of a technical working group (TWG) comprised of 46 subject-matter experts representing a variety of professional organizations – such as each of the Big 4 firms, the PCAOB, SEC, IRS, FBI, IIA, ACFE, and several universities – to



identify the knowledge, skills, and abilities needed by forensic accountants and, consequently, to assist educators in developing appropriate related course content and programs (Kranacher *et al.*, 2008; Pearson and Singleton, 2008; WVU, 2007). Those individuals voluntarily contributed their time, insight, and ideas because of their dedication to developing stronger forensic accounting and fraud investigation education.

The TWG provided definitions of the following related but different terms: forensic accounting, fraud, fraud examination, fraud investigation, fraud prevention, fraud deterrence, fraud detection, and fraud remediation (a quasi- broad approach). Further, in clarifying a difference between forensic accounting and fraud investigation, the report noted:

*...allegations of fraud are often resolved through court action that may include calculated estimates of losses (damages), suggesting that fraud investigation and forensic accounting often overlap. However, both encompass activities unrelated to the other: fraud professionals often assist in fraud prevention and deterrence efforts that do not directly interface with the legal system, and forensic accountants work with damage claims, valuations, and legal issues that do not involve allegations of fraud (WVU, 2007, p. 4).*

The TWG decided that the prerequisite knowledge for forensic accounting education is obtained in any traditional accounting curriculum (e.g., basic accounting concepts, such as debits and credits, key financial ratios, the basic financial statements and note disclosure; basic auditing concepts, such as types of audit evidence, professional skepticism, auditing standards, transaction cycles, and internal controls; basic computer skills, such as familiarity with Word, Excel, and PowerPoint; basic business law knowledge, such as the role of the justice system, civil and criminal matters, contract law, and securities law; business ethics; and basic oral and written business communication skills). However, students without an accounting background (e.g., criminal justice) will need to obtain the prerequisite knowledge prior to moving into the specific forensic accounting/fraud investigation curriculum. Figure 1 provides a general overview of the model forensic accounting curriculum as developed by TWG (essentially a quasi-narrow approach versus the broad approach). Others have called for even a broader approach (Crumbley *et al.*, 2007).

**FIGURE 1: General Overview of Model Forensic Accounting Curriculum**

*Prerequisite Knowledge*

- basic knowledge commonly included in a typical undergraduate accounting curriculum:
  - accounting concepts
    - financial statements, key ratios
  - auditing concepts
    - evidence, standards, professional skepticism, internal controls, transaction cycles
  - business law
  - computer skills
  - business ethics
  - oral and written business communication skills



*Core Exposure Material*

- topics that can be incorporated in existing auditing or accounting information systems course, or by adding a single forensic accounting/fraud investigation course or training module in an existing course
  - definitions of fraud, forensic accounting
  - basic roles of auditors, fraud professionals, forensic accountants
  - fraud triangle and elements of fraud
    - basics of fraud prevention, detection, and investigation
  - overview of common asset misappropriation schemes and fraudulent financial reporting
  - discussion of red flags
  - discussion of fraud remediation: criminal and civil litigation
  - discussion of types of forensic engagements (e.g., damage claims, business valuations, matrimonial investigations, work-place issues)



*In-Depth Material*

- areas in which the technical working group recommends entry-level forensic accountants possess skills, knowledge, and abilities

criminology, legal environment, and ethics  
 asset misappropriation, corruption, false representations  
 financial statement fraud  
 fraud and forensic accounting in a digital environment  
 forensic and litigation advisory services

The recommended in-depth forensic accounting material is summarized in Table 1. These areas are those in which the TWG recommends that entry-level forensic accounting professionals possess knowledge, skills, and abilities. Note that many additional examples of what students should know are included in the WVU (2007) report, and the respective tables and pages are referenced in Table 1 below.

**TABLE 1: Overview of Forensic Accounting Model Curriculum In-Depth Course Material**

<b>General Topic</b>	<b>Related Subtopics (with examples of what students should know)</b>
Criminology, Legal Environment, and Ethics	<p><u>Criminology</u></p> <ul style="list-style-type: none"> <li>• Theories of crime causation, focusing on who commits fraud and why</li> <li>• Impact of criminal behavior and motivation on interviewing and interrogation</li> </ul> <p><u>Legal, regulatory, and professional environment</u></p> <ul style="list-style-type: none"> <li>• Criminal justice system at the Federal and applicable State levels, with an emphasis of the law as it relates to fraud</li> <li>• Civil litigation process and law as it applies to torts and breach of contract</li> <li>• Regulatory system (e.g., SEC, PCAOB, SOX), including the auditor’s responsibility for detecting fraud</li> <li>• Discovery process, attorney-client privilege, attorney work product, privacy,</li> </ul>

	<p>rules of evidence</p> <ul style="list-style-type: none"> <li>• Importance and impact of effective corporate governance mechanisms</li> <li>• Legal remedies for fraud and financial crimes (criminal, civil, other negotiated remedies, choice of no action)</li> </ul> <p><u>Ethical issues</u></p> <ul style="list-style-type: none"> <li>• Alternative theories of business ethics and the role of ethics in corporate governance</li> </ul> <p><i>Source:</i> Table 1 (WVU, 2007, p. 19 – 22)</p>
<p>Asset Misappropriation, Corruption, False Representations, and Other Fraud Acts</p>	<p><u>Prevention and deterrence</u></p> <ul style="list-style-type: none"> <li>• Elements of antifraud techniques and controls, including a strong control environment, code of conduct, “tone at the top,” employee monitoring, hotlines, whistleblower protection, proactive fraud auditing</li> </ul> <p><u>Fraud detection: Risk assessment, testing of and reliance on internal controls, and proactive auditing procedures</u></p> <ul style="list-style-type: none"> <li>• Fraud risk assessment, considering identifiable fraud risks, red flags, schemes necessary to perpetrate a fraud, mitigating controls</li> <li>• Internal controls related to fraud opportunities, both manual and automated</li> <li>• Data mining and other digital analysis tools</li> </ul> <p><u>Fraud investigation methods and the organization and evaluation of evidence</u></p> <ul style="list-style-type: none"> <li>• Different fraud examination procedures in gathering and evaluating evidence (e.g., risks of destroying evidence, chain of custody, obstructing justice, impacting the willingness of individuals to cooperate during an investigation)</li> <li>• Importance of interviewing and interrogations to gather evidence, different techniques, factors impacting interviewing effectiveness</li> <li>• Different types of evidence: testimonial, physical, documentary</li> </ul>

	<ul style="list-style-type: none"> <li>• Uses of observation and surveillance</li> <li>• Methods used to conceal fraud</li> <li>• Methods used to hide assets (i.e., use of public records searches, offshore banking activity, etc.)</li> <li>• Various sources of public and private information and how to search these databases</li> <li>• Working paper development and documentation</li> </ul> <p><u>Reporting</u></p> <ul style="list-style-type: none"> <li>• Various forms of fraud engagement communications, including written reports, graphical presentation, and oral testimony</li> </ul> <p><u>Remediation</u></p> <ul style="list-style-type: none"> <li>• Different types of remediation: civil litigation, criminal prosecution, referral to appropriate regulatory authority, arbitration, mediation, employee dismissal, restitution, insurance claims</li> <li>• Different techniques to estimate losses</li> </ul> <p><i>Source: Table 3 (WVU, 2007, p. 26 – 30)</i></p>
<p>Financial Statement Fraud</p>	<p><u>Financial accounting and auditing</u></p> <ul style="list-style-type: none"> <li>• Auditing and accounting issues related to the specific client’s environment</li> <li>• Major areas of financial statement fraud (e.g., fictitious revenue, timing differences, concealed liabilities, etc.)</li> </ul> <p><u>Prevention and deterrence</u></p> <ul style="list-style-type: none"> <li>• Antifraud techniques, culture, code of conduct, open communications with suppliers and customers, employee monitoring, punishing perpetrators, etc.</li> </ul> <p><u>Fraud detection: Risk assessment, testing of and reliance on internal controls, and</u></p>

	<p><u>proactive auditing procedures</u></p> <ul style="list-style-type: none"> <li>• Possibility of management override, collusion</li> <li>• Red flags that may indicate financial statement fraud, including organizational structure, managements’ incentives and backgrounds, financial statement ratios and nonfinancial data</li> <li>• Proactive fraud investigation techniques (e.g., review of journal entries, important estimates, unusual and infrequent transactions, etc.)</li> </ul> <p><u>Fraud investigation methods and the organization and evaluation of evidence</u></p> <ul style="list-style-type: none"> <li>• Methods used to conceal financial statement fraud</li> <li>• Financial statement analysis techniques</li> <li>• Audit techniques for detecting fictitious transactions and events</li> <li>• Importance of management estimates to financial reporting</li> </ul> <p><u>Reporting &amp; Remediation</u></p> <ul style="list-style-type: none"> <li>• see examples for asset misappropriation</li> </ul> <p><u>Special legal and regulatory issues</u></p> <ul style="list-style-type: none"> <li>• Various international, Federal, State, and local statutes and concepts (e.g., 1933 &amp; 1934 Acts, FCPA, SOX)</li> </ul> <p><i>Source:</i> Table 4 (WVU, 2007, p. 31 – 38)</p>
<p>Fraud and Forensic Accounting in a Digital Environment</p>	<p><u>Prevention and deterrence</u></p> <ul style="list-style-type: none"> <li>• Information technology (IT) governance and IT risk assessment</li> <li>• Transaction processing systems, including manual and computerized controls</li> <li>• Ways IT systems are typically used in frauds and other crimes</li> <li>• How IT security is commonly breached or circumvented</li> </ul>

	<p><u>Digital evidence</u></p> <ul style="list-style-type: none"> <li>• Special requirements for digital evidence collection and preservation</li> <li>• Various types of digital evidence</li> <li>• Online resources</li> <li>• How forensic accountants interact with other computer forensic specialists</li> </ul> <p><u>Detection and investigation</u></p> <ul style="list-style-type: none"> <li>• How attempts to conceal fraud may lead to conflicting evidence, and proper procedures when discovering suspicious activity</li> <li>• Files affected by various fraud schemes, and relationships among various electronic files</li> <li>• Hardware available to capture digital evidence, techniques to recover deleted files</li> <li>• Software available for data extraction and analysis, and case management</li> </ul> <p><u>Reporting</u></p> <ul style="list-style-type: none"> <li>• Various forms of communications (written reports, graphical presentation, oral testimony) and various software tools available to explain fraud investigative findings</li> </ul> <p><u>Cybercrime</u></p> <ul style="list-style-type: none"> <li>• Types of cybercrime</li> <li>• Laws related to cybercrime, intellectual property, and privacy</li> </ul> <p><i>Source:</i> Table 5 (WVU, 2007, p. 39 – 41)</p>
<p>Forensic and Litigation Advisory Services</p>	<p><u>Definition of forensic and litigation services</u></p> <ul style="list-style-type: none"> <li>• AICPA Forensic and Litigation Committee’s definition</li> </ul>

Overview of services

- Understanding of criminal, civil, and administrative engagements and types of forensic and litigation advisory services provided (e.g., lost wages, valuations, business interruption, insurance claims, divorce, antitrust, etc.)
- Qualifications for the forensic accountant to support a litigation activity, including credibility and work reliability
- Differences between testifying expert witnesses and non-testifying advisors/consultants

Research and analysis

- Various approaches to research and analysis, and financial and economic modeling, including how to use authoritative sources for model selection
- Business, how businesses make money, important economic and industry trends
- Rules of evidence as they apply to forensic and litigation advisory services

Damages

- Nature and purpose of damages, including remedies
- Types of damages (restitution, reliance, and punitive)
- Commercial damages (equitable and legal)

Valuations

- Nature and purpose of business valuations, including closely held businesses, stand-alone business activities, and intellectual property, completed for estates and divorce settlement, mergers and acquisitions, dissolutions, insurance, business interruptions, and property loss
- Compliance with professional valuation standards

Working papers

- Development and documentation of work performed for the particular



	<p>engagement</p> <p><u>Reporting</u></p> <ul style="list-style-type: none"><li>• Various forms of communications (written reports, graphical presentation, oral testimony), while understanding the adversarial nature of the litigation environment; consequently, the work will be closely scrutinized and high quality work will be appreciated</li></ul> <p><i>Source:</i> Table 6 (WVU, 2007, p. 42 – 45)</p>
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Some of the recommended curriculum involves “hands-on” practical approaches in the forensic accounting field in order to develop skills based upon knowledge obtained in the classroom, sometimes referred to as “problem-based learning (PBL).” PBL consists of giving a team of students a vaguely defined (but realistic) problem placed in a real-world context, and prior research has found it to be most appropriate for students in upper-level classes (Bonk and Smith, 1998; Johnstone and Biggs, 1998). Recently, PBL forensic accounting cases/simulations – either based on fictional information or an actual case – have been awarded prestigious international accounting education awards, underscoring the importance of this type of instruction as viewed by the academic accounting profession. For example, a fraud examination/auditing case simulation based on an actual case received the American Accounting Association’s (AAA) 2012 Forensic & Investigative Accounting Best Teaching Innovation Award (Buckhoff and Kramer, 2007). Another PBL forensic accounting investigation case received the AAA’s 2006 Innovation in Audit Education Award (Durtschi, 2003).

As the grant recipient and active participant in the project, WVU was able to immediately field-test the TWG’s curriculum recommendations. As a result, WVU offers a four-course graduate Certificate in Forensic Accounting and Fraud Investigation that follows the forensic accounting model curriculum (Fleming *et al.*, 2008). The courses are all taught using actual and simulated

case materials, as the TWG emphasized that to effectively develop the necessary skills, students should have hands-on experience, which can include moot court exercises, data mining extraction and analysis, problem-based learning simulated cases and investigations, including reporting exercises based on fraud case details and fact patterns.

The demand for forensic accountants with the necessary education and skills does not show any sign of abating. For example, the American Institute of Certified Public Accountants (AICPA) recently estimated that 20,000 to 30,000 CPAs provide forensic accounting services (Allegretti and Slepian, 2010). In June 2008, the AICPA created a specialty credential for CPAs – the Certified in Financial Forensics (CFF) – after conducting research with CPAs and attorneys, who strongly supported the development of such a credential. The AICPA’s goal during the first year was to award 900 CFF credentials; instead, by September 2009 more than 3,500 CPAs earned the designation, far more than the AICPA’s original projection (Davis *et al.*, 2009).

Further, membership in the ACFE has skyrocketed in recent years. Between its formation in 1988 through 2001, the ACFE grew to about 30,000 members (Peterson and Reider, 2001). Its size has more than doubled to 70,000 members currently. In addition, the American Accounting Association (AAA) created a Forensic and Investigative Accounting section for its members who are interested in teaching, researching, and practicing in the forensic accounting area.

Given that the demand for forensic accountants is strong and the consensus is that it will continue to grow (Huber, 2012; McMullan and Sanchez, 2010; DiGabriele, 2008), this article examines whether the supply side for forensic accountants – educators in accounting programs at universities and colleges throughout the country – have moved toward adapting the forensic accounting model curriculum developed with NIJ financial support and intellectual contributions by nearly four dozen subject-matter experts. This study contributes to the literature on forensic accounting education by providing insight into the degree of uniformity with the NIJ-funded model curriculum. There is a tremendous need to

understand the forensic accounting and fraud examination landscape in higher education and share best practices. Thus, these results can aid educators in developing or improving their curriculum choices in this area.

Further, if our research suggests that the narrow forensic accounting model curriculum is not being readily adopted, this fact may raise the questions of why, and how to increase the effectiveness of any future financial support between a governmental funding agency and an entity requesting funds for a forensic accounting education-related grant. These discussions could potentially increase the value and impact of future taxpayer-funded sources of related research.

### **III. METHOD**

The focus in this article is on forensic accounting education, both degree programs and non-degree programs (e.g., minors or concentrations). In addition, our article focuses on the in-depth knowledge identified by the TWG as necessary for prospective students to prepare for entry-level forensic accounting positions. This in-depth knowledge is typically obtained by adding multiple courses, which one would more likely expect to see when a degree program or minor/concentration in forensic accounting is offered.<sup>2</sup>

We reviewed the websites of U.S. colleges and universities to ascertain the degree to which the NIJ-funded model curriculum has been applied by those institutions that offer forensic accounting education. Our population consisted of all 900 U.S. accounting programs listed in the most recent Hasselback accounting directory (Hasselback, 2013). To check the comprehensiveness of our data, we also reviewed the ACFE's website for all U.S. schools

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<sup>2</sup> WVU also identified forensic accounting curriculum guidelines for those colleges and universities that wished to add a single survey course, and guidelines for those institutions that wished to enhance current course content/training efforts by including increased coverage of forensic accounting topics.

participating in its Anti-Fraud Education Partnership program. Most of the ACFE schools were also listed in Hasselback (2013), but we reviewed the website for any school listed by the ACFE that was not listed in the Hasselback directory.

A forensic program might be located outside of an accounting/business school given that much of this education might be associated with litigation support, valuations, computer skills, etc., in addition to some accounting expertise. We did find several such programs through our search since some accounting-related courses were included in the curricula. As might be expected, these programs outside of a business college placed emphasis primarily on their particular discipline. For example, a master's degree in Digital Forensics and Cyber Security offered by a college of criminal justice focused heavily on courses in network security, law and high technology crime, digital forensics applications, forensic management of digital evidence, network forensics, law, evidence and ethics, cyber-criminology, and constitutional law. However, we focused the scope of this paper on programs offering degrees, certificates, minors, and concentrations in forensic accounting, which would originate from accounting/business schools and colleges.

Once we identified a college or university website containing information about forensic accounting education, we searched the website for the online catalog to obtain a description of the related courses and/or the curriculum's learning objectives and goals. For each identified program, we independently assessed its similarity to the NIJ-funded model curriculum using thematic analysis of the course descriptions (Boyatzis, 1998; Braun and Clarke, 2006; Vaismoradi, *et al.*, 2013).

Thematic analysis is a categorizing or classification strategy for qualitative data, which helps researchers analyze a broad reading of data into patterns and developing themes (Boyatzis, 1998). Braun and Clarke (2006) define thematic analysis as a qualitative analytic method "for identifying, analyzing

and reporting patterns (themes) within data. It minimally organizes and describes your data set in (rich) detail” (p. 79). They define a theme as that which “captures something important about the data in relation to the research question, and represents some level of patterned response or meaning within the data set” (p. 82). Thematic analysis moves beyond counting specific words or phrases, and instead, focuses on identifying implicit and explicit ideas within the data (i.e., themes). It is considered to be “robust enough to be used for conducting an introductory study on a novel phenomenon, for which the quality of data depends on the amount of energy and time the researcher spends on the process of data gathering and analysis” (Vaismoradi, *et al.*, 2013, p. 403).

Based on our thematic analysis, we then assigned an overall score from 1 – 5 representing the degree to which the forensic accounting programs conform to the model curriculum described earlier. Specifically, we focused on the degree to which the curriculum’s course’s included coverage of the in-depth knowledge recommended by the TWG: a) criminology, legal environment, and ethics; b) asset misappropriation, corruption, false representations; c) financial statement fraud; d) fraud and forensic accounting in a digital environment; and e) forensic and litigation advisory services. While we were not searching for those exact same phrases, using thematic analysis, we were looking for course descriptions that described those themes, considering the examples of subtopics of the themes as summarized in Table 1 (WVU, 2007). A score of 5 represents a meritorious score, with excellent conformity to the NIJ-funded model curriculum by including multiple subtopics from all five general topic areas as identified by the TWG. Scores of 4, 3, 2, and 1 represent good, some, little, or essentially no conformity to the model curriculum, respectively.

Subsequent to our independent analyses, we discussed the very few programs where our assigned values differed. In no case did we have any dramatic difference, but in the few cases where we varied slightly in our scoring, we discussed our analysis, and came to an agreement about the rating.

#### IV. RESULTS

Our review of the university and college websites found several institutions offering programs in forensic accounting as summarized below in Table 2. Specifically, we found a total of 96 different forensic accounting graduate and undergraduate programs offered in the U.S.<sup>3</sup>

**TABLE 2: Number of U.S. Forensic Accounting Programs**

	<b>Undergraduate</b>	<b>Graduate</b>	<b>Total</b>
<b>Degree</b>	<b>8</b>	<b>7</b>	15
<b>Certificate</b>	<b>4</b>	<b>19</b>	23
<b>Minor or Concentration</b>	<b>35</b>	<b>23</b>	58
<b>Total</b>	47	49	96

As shown in Table 3, one undergraduate forensic accounting program received a score of 5 based on our thematic analysis, indicating excellent conformity with the model curriculum.<sup>4</sup> Another three undergraduate programs received a score of 4, and eight programs received a score of 3, representing good or some conformity with the model curriculum, respectively. Eight undergraduate programs received a score of 1, indicating essentially no conformity. The majority of undergraduate programs – 27 out of 47 – received a score of 2, indicating little conformity. Thus, 74.5% of the undergraduate forensic accounting education programs we found show little or no conformity with the quasi- narrow NIJ-funded model curriculum. They are following an even more narrower approach.

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<sup>3</sup> In addition to the data reported in this paper, we found over 400 universities and colleges in the U.S. that offered one separate course in forensic accounting or fraud investigation, usually titled “Forensic Accounting,” or “Fraud Examination”. We did not include these schools or the additional 19 “fraud examination” programs we found in our analysis.

<sup>4</sup> Monroe College in New York has a bachelor degree in accounting with a minor in forensic accounting.

**TABLE 3: Undergraduate Forensic Accounting Programs' Conformity with NIJ-Funded Model**

**Curriculum**

<b>Rating (Conformity)</b>	<b>5 (Excellent)</b>	<b>4 (Good)</b>	<b>3 (Some)</b>	<b>2 (Little)</b>	<b>1 (None)</b>	<b>Average</b>
Degree	0	1	2	2	3	2.1
Certificate	0	2	0	1	1	2.8
Minor/Concentration	1	0	6	24	4	2.1
Total (%)	1 (2%)	3 (6%)	8 (17%)	27 (58%)	8 (17%)	

Graduate forensic accounting program results are shown in Table 4. Three graduate forensic accounting programs received a score of 5, indicating excellent conformity with the model curriculum, while another three graduate programs received a score of 4, representing good conformity.<sup>5</sup> A total of 19 graduate forensic accounting programs received a score of 3, representing some conformity with the model curriculum, while 14 programs received a rating of 2 (little conformity) and another ten graduate programs received a score of 1 (essentially no conformity). Nearly half of the graduate programs – 24 of the 49, or 48.9% – show little or no conformity with the narrow NIJ-funded model curriculum.

**TABLE 4: Graduate Forensic Accounting Programs' Conformity with NIJ-Funded Model**

**Curriculum**

<b>Rating (Conformity)</b>	<b>5 (Excellent)</b>	<b>4 (Good)</b>	<b>3 (Some)</b>	<b>2 (Little)</b>	<b>1 (None)</b>	<b>Average</b>
Degree	1	2	3	0	1	3.3

<sup>5</sup> The three graduate programs assessed a rating of 5 are: Georgia Southern University (Master of Accounting with Concentration in Forensic Accounting); Webster University in Missouri (MS in Forensic Accounting); and West Virginia University (Graduate Certificate in Forensic Accounting & Fraud Examination).

Certificate	1	1	8	6	3	2.5
Minor/Concentration	1	0	8	8	6	2.2
Total (%)	3 (6%)	3 (6%)	19 (39%)	14 (29%)	10 (20%)	

In general, the undergraduate and graduate programs receiving the lowest ratings had weak coverage of two of the five general topics as identified by the TWG: a) fraud and forensic accounting in a digital environment, and b) forensic and litigation advisory services. This finding may be due to the multidisciplinary nature of the forensic accounting field. For example, valuation of losses and damages is a niche area within the field of forensic accounting and requires specialized skills and knowledge. Similarly, digital forensics is not something that forensic accountants would necessarily be expected to do; in fact, the TWG recommend that as part of the forensic accounting education in this area, students should be able to recognize situations that require information security or computer forensic specialists, and be able to identify situations where a forensic computer specialist must be employed, including understanding how legal proceedings against a perpetrator can be jeopardized if evidence is gathered by an investigator who lacks appropriate digital forensic skills. Consistent with this idea, Pope and Ong (2007) discuss how forensic accounting teams can benefit from the expertise of a forensic technology specialist. Consequently, it is possible that the faculty involved with programs with limited conformity to the model curriculum may believe they lack the expertise to adequately offer all recommended topics. However, as noted by the TWG:

*This subject area interfaces with related disciplines: law, computer science, criminal justice, intelligence, economics, business administration, and information systems. This interface provides an opportunity for collaboration with other colleges, divisions, and departments across campus, and coordination with such other programs should be beneficial to all parties involved (WVU, 2007, p. 46).*

Our analysis finds that most forensic accounting programs have fairly good coverage of the remaining three general topic areas recommended by the TWG: a) asset misappropriation, corruption, false representations, and other fraud acts, b) financial statement fraud, and c) criminology, legal



environment, and ethics. These general topic areas are more consistent with “traditional” accounting topics. Consequently, accounting faculty may feel more comfortable teaching such topics, which could account for this finding. But when will accounting faculty develop their own lectures about litigation services and valuation rather than relying on videos and invited practitioners?

Generally, graduate programs are more in conformity with the model curriculum, with 25 of the 49 programs (51%) showing at least some conformity. In contrast, 12 of the 47 undergraduate programs (26%) show at least some conformity. Graduate education is typically more demanding than undergraduate education, so it is possible that this finding is due to faculty intentionally including in their graduate programs broader and deeper coverage of many of the forensic accounting subtopics from each of the five general topic areas.

We also found that generally minors/concentrations in forensic accounting show the least conformity to the model curriculum. At the graduate level, 14 out of 23 (61%) programs offering a minor/concentration in forensic accounting show little or essentially no conformity, while at the undergraduate level 28 out of 35 (80%) of these programs show little or essentially no conformity. Typically a minor or concentration in an area requires fewer classes than a degree and consequently, it might be expected that less in-depth coverage of forensic accounting topics would be included, which may explain this finding. However, this is not necessarily always the case when a minor/concentration is offered. We found two programs – one each at the undergraduate and graduate levels –that indicate excellent conformity with the model curriculum.

## **V. CONCLUSION**

Currently there seems to be no consensus on how to integrate forensic accounting topics into the accounting curriculum; however, our research finds that a very strong and positive momentum exists in that significantly more forensic accounting education is available to students today than even just one decade ago.

Our analysis of U.S. forensic accounting programs finds that a large majority of undergraduate programs and nearly half of the graduate programs have little or essentially no conformity with the narrow forensic accounting model curriculum as developed by a variety of experts, both in practice and in academia. The “forensic accounting” programs with little/no conformity generally lacked in-depth coverage of subtopics identified by the TWG in the areas of fraud and forensic accounting in a digital environment, and forensic and litigation advisory services, but contained some coverage of financial statement fraud, asset misappropriation topics, and/or criminology, legal environment and ethics (e.g., courses are even more narrow than the recommended model). Our results are consistent with Smith and Crumbley (2009), who found that the fraud/forensic curriculum is being defined as fraud examination, in that we found a majority of U.S. forensic accounting programs currently lack in-depth coverage of several topics recommended by the TWG, but do cover topics more closely related to fraud examination. However, some U.S. forensic accounting programs are truly “forensic accounting” programs as defined by the TWG, offering courses in a variety of the wider-ranging forensics areas.

When accounting faculty develop and revise their forensic accounting curriculum, they make choices about what to include based on program goals and objectives, given their resources. As they make these choices, they may wish to evaluate whether their forensic accounting program should be changed by reviewing the recommendations of the TWG.

More importantly, accounting faculty should also consider the implications of their curriculum choices on their stakeholders and the accounting profession. Arguments can be made that the \$614,000 grant was a colossal sum of money to merely develop a model curriculum – so colossal, that among objective observers, it might be considered “pork,” given the reputation of the long-time West Virginia senator in office at the time of the grant (e.g., CBS News, 2010; Clymer, 2010). Therefore, it is not certain exactly how much credibility should be attributed to this model curriculum, despite the participation of individuals representing different stakeholder groups, and therefore, we make no claim as to what extent accounting departments across the U.S. should conform to this model curriculum.

### ***Limitations***

We developed our ratings using thematic analysis from a program's course titles and subsequent evaluation of the courses' online description, which may not be fully indicative of the course content. However, given the vast volume of data gathered, it is not feasible to obtain and analyze syllabi for each course at each school to ascertain specific content, not to mention the difficulty caused by syllabi providing differing amounts of detail.

Further, it is impossible to judge the instructional quality provided in each course at each institution. Some schools with less convergence to the model curriculum may be fortunate to have stellar faculty teaching their courses. If one were somehow able to judge the overall quality of such a program when considering the faculty performance, it could be outstanding.

### ***Directions for Future Research***

Our results show that few U.S. forensic accounting programs conform closely to the NIJ-funded model curriculum as developed by nearly four-dozen subject-matter experts from a variety of stakeholder organizations. This forensic accounting model curriculum was developed with a substantial grant funded by U.S. taxpayers. Future research might examine why educators made their curricula choices – were the choices driven by resource constraints, faculty expertise, student applicants' backgrounds, recruiters' preferences, available job opportunities for graduates, impact of the ACFE group, and/or other reasons? How can future research grants funded by U.S. taxpayers pertaining to accounting curriculum have more impact?

Little research exists pertaining to international forensic accounting education. Future research could examine how forensic accounting programs offered by universities and colleges outside the U.S. merge with or differ from the NIJ-funded model curriculum as developed by the TWG, and what, if any, cultural differences may explain any lack of conformity.

In addition, what are the international educators' views on obstacles and successes in offering such education, their best practices, and how does this compare to U.S. educators? Further, how do educators' opinions compare to those of domestic and international forensic accounting practitioners? Such an examination could reveal useful insights about how to enhance forensic accounting education worldwide.

Research regarding the job placements, including starting salaries, of graduates from forensic accounting education programs both emulating and differing from the model curriculum could provide helpful information about the usefulness of the model curriculum. What do recruiters of forensic accounting program graduates find to be the strengths and weaknesses of their new employees?

Finally, our data was obtained via a search of Internet information that will change, and as such, it is a snapshot at a moment in time. A future study could examine if the quantity and content of forensic accounting programs has changed.

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