Can Forensic Accounting as a 'Science' Prevent Fraud?; Implications for the Undergraduate Accounting Curriculum in Indonesia

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ABSTRACT
This article discusses forensic accounting as a branch of accounting science that has fulfilled the criteria of a scientific discipline, with a clear object of study, systematic approach, measurable methods of analysis, and real contributions to solving practical problems, particularly in the prevention and detection of fraud. Forensic accounting is no longer merely a supplementary practice, but an applied science that integrates accounting, legal understanding, and investigative techniques based on data and scientific logic. Therefore, this article emphasizes the urgency of transforming higher education, especially the undergraduate accounting curriculum, by making forensic accounting a compulsory course, not an elective. This step is essential to equip students with critical thinking skills, investigative analysis capabilities, and sensitivity to irregularities in financial information. By formally integrating forensic accounting into the curriculum, higher education can produce graduates who are not only technically competent but also actively contribute to accelerating fraud prevention in the future, shaping accounting professionals who are ethical, critical, and responsive to the challenges of the digital era.
Keywords: Forensic Accounting; Accounting Science; Accounting Curriculum; Fraud Prevention

INTRODUCTION

In this day and age, the problem of financial fraud is increasingly difficult to detect. Many companies, both large and small, are involved in cases of financial statement manipulation, embezzlement of funds, misuse of assets, or even corrupt practices committed by their own management. Fraud does not only occur in the private sector, but is also rampant in government agencies and non-profit organizations (Maulidi, 2025). In fact, so far we have been taught various accounting courses such as financial accounting, auditing, and accounting information systems, which should be able to help detect and prevent fraud. But in reality, fraud still occurs. This raises an important question: is our accounting curriculum still relevant in facing the real challenges that exist in the world of work? Do we need to add another approach that is stronger, more focused on fraud prevention? This is where forensic accounting starts to gain attention, as it combines not only accounting and auditing knowledge, but also critical thinking, investigative logic, and an understanding of the motives of human behavior.

Forensic accounting is not really new. In developed countries, this practice has been used to help resolve legal disputes, uncover corporate fraud, and even handle cases of economic crimes such as money laundering and terrorism financing. Forensic accounting works by collecting evidence, analyzing data, and compiling reports that can be used in court (Honigsberg, 2020). Therefore, this approach not only emphasizes on the numbers, but also on the meaning behind the numbers, who was involved, why it was done, and how to prove it. Here we see that forensic accounting cannot be considered just an additional skill; it should be an important part of the science of accounting itself. A science shaped by systematic thinking, data-driven proof, and an objective search for truth. If forensic accounting is recognized as a science, then it should also have a place in the academic world, not just as technical training, but as part of students' critical thinking process.

But in reality, in many universities in Indonesia, forensic accounting is still very rarely taught. Even if it is, it is usually only an optional material or a light topic in advanced auditing courses. This is a serious problem because accounting students will eventually work in the real world which is full of risks of

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fraud and ethical deviations. If they are only equipped with basic theories without investigative skills and sharp thinking logic, then they will be easily deceived, hesitate in acting, or even unknowingly become part of a corrupt system. Our accounting curriculum is still too focused on reporting and compliance, whereas the reality on the ground is often much more complex and requires a more flexible and sharp approach. Therefore, there needs to be a serious discussion: can forensic accounting be established as a branch of science, and if so, what are the implications for the undergraduate accounting curriculum in Indonesia?

This article will discuss these big questions. First, the author will review the concept of forensic accounting as a science and compare it with the characteristics of other sciences. Does forensic accounting fulfill the criteria as a science? Does it have a systematic framework, testable methods, and repeatable and verifiable results? Second, this article will explain why the recognition of forensic accounting as a science is important for fraud prevention, especially in the context of developing countries such as Indonesia. Third, it will discuss how the current condition of the accounting curriculum is still not responsive to the needs of anti-fraud practices. Finally, a concrete proposal will be presented on how the undergraduate accounting curriculum in Indonesia can be changed to be more adaptive, relevant, and ready to face real challenges in this risky digital era. It is hoped that this article can be a material for reflection and discussion for academics, practitioners, and policy makers in shaping accounting education that is not only smart at calculating, but also able to think sharply, courageously, and ethically in preventing fraud early on.

RESULTS AND DISCUSSION

Forensic Accounting As Science?

When we talk about whether something is called a science or not, we have to look at its basis from the philosophy of science way of thinking. Philosophy of science is a branch of philosophy that discusses what science is, how science works, and what makes knowledge a science. In simple terms, science is called science if it has three things: (1) there is a clear object of study, (2) there is a systematic method for obtaining knowledge, and (3) the results can be tested and trusted by others. If we look at forensic accounting, it actually has these three things. The object is clear, namely behavior and evidence of fraud in financial statements or business activities. The methods are also there, namely investigative techniques, data collection, analysis of evidence, and reporting of results. Even the results can also be tested by others, for example by courts, other auditors, or legal institutions. In addition, in forensic accounting, for example, we make a hypothesis that a company does double recording to hide illegal expenses. This hypothesis can be tested: we can look for evidence, documents, transaction traces, or interview insiders. If no evidence is found, then our hypothesis is invalidated. But if the evidence supports it, then the hypothesis gets stronger.

Forensic Accounting and Other Sciences

Forensic accounting does show many fundamental similarities with other sciences, especially forensic sciences such as forensic medicine. Both fields are based on real problems that occur in society - suspicious deaths in medicine, and financial fraud or irregularities in accounting. Both require keen observation skills, a systematic approach, and strong deductive-inductive logic to build a narrative or explanation of what actually happened. In forensic medicine, bodies are examined for wounds, traces of toxic substances, or signs of violence, and from these findings conclusions are drawn about the cause and time of death. In forensic accounting, something similar is done but the object is financial data. Investigators will trace transaction patterns, examine supporting documents, identify irregularities, and then compile a narrative or evidence of who committed fraud, how, and what the consequences were. They are not just collecting data, but compiling knowledge based on data, and that is the hallmark of scientific work.

In addition, it is important to understand that according to Honigsberg (2020), the investigation process in forensic accounting is not just a matter of numbers and logic, but also a matter of understanding the context of human behavior, organizational structure, and pressures that exist in the work environment. This makes forensic accounting interdisciplinary, because in addition to using quantitative approaches such

as statistics or financial ratio analysis, it also uses qualitative approaches such as interviews, behavioral observations, and analysis of the perpetrator's motives. Just as in forensic medicine where the cause of death may not be immediately apparent and must be linked to the victim's health history, social conditions, or even psychological aspects, forensic accounting also needs to explore layers of invisible causes, such as conflicts of interest, pressure to achieve targets, or weak internal control systems. All this shows that forensic accounting does not only rely on techniques, but also requires interpretation, holistic understanding, and a critical approach to financial phenomena and organizational behavior. Thus, like other social and forensic sciences, forensic accounting demands mastery of scientific methods as well as sensitivity to social dynamics.

The Scientific Role of Forensic Accounting and Fraud

To prevent fraud before it happens, we need to build a system that can detect its early signs, or what is often referred to as an early detection system. In forensic accounting, this system can be created using data analytics, which is a technique for reading and understanding large amounts of financial data to look for suspicious patterns. But the way to read it is not arbitrary. It uses the scientific method, meaning that all the steps are logical, organized, and based on real evidence. For example, when there are transactions that are not reasonable in amount, or there are expenses that keep repeating at the same time without a clear explanation, then the system will give a warning sign. Forensic auditing also comes in here, as the auditor will investigate further by looking for documents, transaction evidence, or interviewing relevant people. All of this is done following the scientific way of working: collecting data, analyzing with logic, developing hypotheses, and then testing whether the suspected fraud is true or not. In this way, the early detection system is not just based on instinct or gut feeling, but is actually built on scientific knowledge that can be tested, proven and repeated. This is what makes it more reliable, more trustworthy, and can prevent huge losses because fraud can be recognized faster.

More than that, forensic accounting as a science also plays a role in developing fraud indicators (Kaur et al., 2022). This is not just a list of symptoms or characteristics based on field experience, but is based on empirical research that follows the scientific method. For example, a researcher can analyze hundreds of financial statements of companies that have been involved in fraud cases, then look for patterns that often appear, such as revenue manipulation, unnatural cash surges, or excessive use of certain accounts. From the data, conclusions are then drawn, namely indicators that often appear before fraud occurs. The more data collected and analyzed, the stronger the basis of the indicator. That way, forensic accountants can use these indicators to detect early symptoms of fraud. In fact, companies can also apply these indicators in their financial systems to be more vigilant and can act faster if signs of stealing appear.

Forensic Accounting Towards Strengthening The Legal System

Forensic accounting has the ability to create transparency in the judicial process, especially in cases involving large entities or powerful individuals. In these situations, there is often a concern in the community that the judicial process may be influenced by external forces, be it political, economic or other. This distrust can undermine the legitimacy of the legal system and reduce public confidence in the judicial process. However, forensic accounting comes with a scientific and methodological approach that allows facts related to financial fraud or abuse to be revealed in a clear and objective manner. In this context, forensic accounting serves to reduce uncertainty in the judicial process (Al Natour et al., 2025). When the evidence presented is based on valid data and has been analyzed in depth, the public can feel that justice is easier to achieve, as the process does not simply involve claims or arguments that could be influenced by certain parties. Financial data collected through forensic accounting provides a clearer and more measurable picture of a suspected event or transaction.

In the case of white-collar crime, for example, it is often difficult for the legal system to prove the guilt of the perpetrator without an in-depth analysis of financial data. Forensic accounting is here to fill that

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gap, by confirming that the offense actually occurred, the extent of its impact, and what each party's role was. With this solid data, the legal system can impose a fair punishment and also have a real deterrent effect. At this point, forensic accounting can drive reforms in sentencing policy, especially by providing new data and patterns of modern financial crimes that are increasingly complex and structured. Many cases that were previously untouched due to limited evidence or ignorance of law enforcement officials to new modes, can now be uncovered with the help of forensic accountants. Therefore, forensic accounting is not a matter of strengthening the evidentiary process in court, but changing the way legal institutions view types of crimes, approaches to investigations, and drafting laws that are more relevant to the times.

The Gap Between The Academic World and The Needs of Practice

The gap between the academic world and the needs of practice in the context of forensic accounting is still a considerable problem to this day. On many campuses, forensic accounting is often only taught in theory, without being equipped with hands-on experience or a deep understanding of the real world. Students are taught about basic concepts such as fraud, evidence, investigative auditing, or the role of forensic accountants, but they don't get training on how to apply all that in real cases. For example, they may learn that fraud can take many forms, but they are not necessarily taught how to look for suspicious data, how to read patterns of unusual transactions, or how to compile reports that can be used in court. As a result, when graduates enter the workforce, they are often surprised that what they face is very different from what they learned in the classroom. The practical world demands rigor, experience, and high analytical skills, which are not enough to get from reading books or listening to lecturers teach.

On the other hand, the needs of practice in the world of work are actually growing and complex. Many companies, government agencies, even law enforcement officials such as police and prosecutors, need professionals who can understand and investigate financial issues accurately and scientifically. Modern financial cases are no longer simple. They often involve many parties, use sophisticated technology, and are hidden by very complicated methods. The world of work needs forensic accountants who can think critically, can work in teams with investigators, and can convey findings in a language that can be understood by lawyers or judges. Unfortunately, the graduates produced by many universities do not have that provision. They are not familiar with real case studies, are not trained to write investigative reports, and have never come face-to-face with real data or financial systems. This imbalance causes the industrial and legal world to have difficulty finding a ready-made workforce, while the academic side itself has not made much effort to adjust its curriculum to the needs of practice in the field.

Absence of Mandatory Forensic Accounting Courses

The absence of mandatory forensic accounting courses in most accounting study programs in Indonesia indicates a serious gap between the development of professional needs in the field and the current academic curriculum structure. In fact, amid the increasing complexity of financial cases and rampant fraud in various sectors (ACFE, 2024), the need for accounting graduates who have investigative skills and a deep understanding of fraud is very large. When forensic accounting is not made a core part of the curriculum, students miss the opportunity to understand early on how accounting science can be used to detect, investigate and prevent financial crime. As a result, they graduate without knowledge that is relevant to the real challenges being faced by industry, government, and the legal system.

In addition, the absence of forensic accounting courses also shows that there is no full awareness of the curriculum makers about the importance of a scientific and multidisciplinary approach in shaping future accounting professionals. Forensic accounting is not just about counting and recording, but about critical thinking, analyzing suspicious patterns, and compiling evidence in a logical and structured manner - a skill set that is much needed in today's digital and complex era. Overseas, many universities have made forensic accounting part of their core courses as it is considered an important pillar in modern accounting education. If Indonesia wants to compete at the global level and produce graduates who are ready to work

in the field, then accounting learning must begin to move towards a more applicable direction and in accordance with the challenges of the times.

Lack of Integration of Research and Real Case Studies

Overly theoretical forensic accounting learning creates an epistemic distance between students and the reality they should be prepared to face. The problem is not just "no practice", but deeper. Campuses fail to build the investigative way of thinking that is at the core of forensic accounting as a discipline. When students are only invited to memorize definitions of fraud, ponzi schemes, or types of accounting fraud, they are not being trained to become future professionals who are ready to investigate and uncover complex cases - they are being positioned as passive spectators of knowledge. They understand the theory, but are never trained to doubt numbers, suspect documents, or build hypotheses based on field findings. In forensic science, these skills are at the heart of the scientific process - without them, the knowledge students acquire is flat and unable to be brought into the real world.

Not engaging students in the real dynamics of fraud cases also perpetuates the false assumption that fraud is a rare, extreme event that can only be handled by "legal experts". As a result, students do not feel responsible for being part of the fraud detection or prevention system. In fact, fraud is not just a legal offense. It is a symptom of system failure, and accountants are right at the center of that system. If students are not invited to analyze how the system collapses from within - through small manipulations that are allowed, lax supervisory policies, or conflicts of interest that are tolerated - then they will grow up to be professionals who are also permissive of irregularities. This is where the gap between theory and practice is truly dangerous. It produces graduates who are unable to recognize danger signs, let alone prevent them.

Urgency of Curriculum Reform

An interdisciplinary approach based on scientific inquiry in accounting education is an urgent need that cannot be delayed anymore. The modern world is moving in an increasingly complex direction, where the boundaries between fields of science are becoming increasingly blurred. Financial fraud cases can no longer be handled only by the ability to read numbers or understand basic accounting principles. To be able to understand and solve real problems such as financial statement manipulation, corruption, or money laundering, accounting students need to be equipped with much deeper skills: research skills. This is where the role of the scientific approach is very important - because through scientific inquiry, students are invited not to just believe in numbers, but learn to explore, question, prove, and conclude based on data and strong arguments. For example, when they find a financial report that looks unnatural, they do not immediately judge or take it for granted, but develop a hypothesis: "Is there some motive behind this number?" Then they learn to gather evidence, use statistics, even qualitative interviews to understand the broader context. This means that students need to develop legal and sociological sensitivities.

Digital Competence, Data Analytics, and Professional Ethics

In today's digitalized and fast-changing world, accounting students need to be equipped with three important things: digital competence, data analytics skills, and professional ethics. The three cannot be separated, because they are closely related. Digital competency helps students understand and use technology used in the workplace, such as accounting software, big data, and digital reporting systems. But, technology alone is not enough. Students must also have the ability to critically analyze data, be able to distinguish which data is reasonable and which is suspicious. Then all of that must be based on strong ethics, so that the abilities they have are not misused for things that harm others or violate the law. Therefore, all three must be taught simultaneously and integrated in the curriculum.

One of the best ways to build these three competencies is to include forensic accounting as a compulsory course in the undergraduate accounting program. In this course, students not only learn the

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theory of fraud or financial violations, but also directly apply it by using digital technology and data analysis tools to investigate complex financial cases. They will be invited to examine transaction patterns, analyze suspicious data, and compile a report of findings that can be accounted for logically and professionally. All of these processes train digital and analytical skills hands-on, not just in theory. But most importantly, students will also be taught how to use these skills ethically. Not accuse carelessly, not misuse data, and always uphold honesty and responsibility in the investigation process. This professional ethics is important because in forensic accounting, someone can easily misuse data or create a false narrative if they do not have integrity. So, by including forensic accounting courses in the curriculum, we are actually building a more unified learning: students do not learn these things separately, but instead practice them together in a complete and meaningful process. This not only makes learning more relevant, but also brings students closer to the real world, where financial problems and fraud do not come in the form of multiple choice questions, but in the form of real cases that require rigor, expertise, and a strong professional attitude.

CONCLUSION

Forensic accounting as part of science has an important position in building a fair, transparent, and trustworthy financial and legal system. By relying on scientific methods such as systematic data collection, hypothesis testing, and logic-based analysis, forensic accounting is not just a complementary tool in financial reporting, but turns into the main weapon in detecting, analyzing, and preventing various forms of fraud. This approach emphasizes the importance of scientific inquiry in accounting education and practice, where students and practitioners should be trained to think like researchers: framing critical questions, searching for evidence, and drawing testable conclusions.

Through this review, it has become clear that forensic accounting is not enough to be an elective or additional field in the curriculum, but should be a compulsory course that explicitly teaches the link between digital competence, data analysis skills, and professional integrity. The three are inseparable as they support each other in shaping accountants who are not only technically proficient, but also sensitive to the social and legal context of their work. Accounting curricula that do not integrate an interdisciplinary approach based on scientific inquiry risk producing graduates who are not ready to face the complexity of fraud today. Thus, accounting education in Indonesia must undergo fundamental reform, starting from incorporating forensic accounting as a scientific foundation that connects theory, practice, and law enforcement in a complete and meaningful way.

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