



Short commentary

Forensic Studies for the Students of Criminal Justice, Criminology, Psychology and Law: A New Needed Area for Forensic Science Education

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Introduction

From an academic point of view, educational disciplines are roughly divided into several general categories, each consisting of a few or a dozen disciplines or branches. For example, Natural Science includes biology, chemistry, physics, or engineering. Liberal Arts consists of English, art, history, or philosophy. Social Science covers sociology, political science, economics, or law (criminal, family, or civil laws), and Behavioral Science contains psychology, criminal justice, or criminology. As a general notion or practice, the field of Forensic Science is classified under the natural science category and thus recruits its students into its workforce from the natural science branch. However, the author will argue that given the crime situations in the past 10 years, the forensic science field experiences many expansions beyond the walls of crime labs and should shift to many needed changes. The author argues for the expansions and changes from the following three aspects.

First, looking at the definition of forensic science, one of the most commonly cited definitions states, "The application of scientific principles and techniques to matters of criminal justice especially as relating to the collection, examination, analysis of physical evidence." [1] Here, the definition does not limit "scientific principles" to only natural sciences. In reality, the field of forensic science encompasses any disciplines that can serve the fact finders (jurors or judges) to understand issues at a trial.

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Second, the early stage of forensic science tasks must start from evidence discovery, collection, processing, preservation, and transportation at crime scenes and is most likely accomplished by police officers, crime scene technicians, or detectives who usually do not have a natural science education; instead, they usually have educational background with a criminal justice, criminology, or psychology.

Finally, do not forget the other main courtroom players: the defense attorneys, public defenders, prosecutors, and judges. These jobs require a law school degree and passing a state bar exam whereas forensic science is not a common course in most law school curriculums due to the shortage of faculty with related backgrounds and related lab facilities. Forensic science should not take any side, but should help the evidence demonstrate its probative value at trials without favoring either side: the prosecution or the defense.

Forensic Science vs. Forensic Studies

The word "forensic" comes from the Latin word "*forensis*," meaning "of the forum," where the law courts of ancient Rome were held. Today, forensic science or simply called forensics, refers to the application of scientific principles, knowledge, methods, and practices to the adversary process where guilt or innocence is determined in a court of law. There are three branches of learning on the subject: The lab-based examination known as lab forensics, and the field-based processing tasks known as field forensics.

Lab forensics is heavily based on the natural sciences, such as biology, chemistry, and physics, to analyze physical evidence in crime labs. Therefore, this branch of forensic science aims to educate and train science students to become lab examiners with certain specializations. Field forensics, on the other hand, employs a broader approach to include basic natural, social, and behavioral sciences. It educates students in criminal justice, criminology, psychology and law to better understand forensic science as their potential career in the justice system. The two forensic branches are different regarding their tasks and responsibilities. Yet, they are closely dependent on each other since both are designed to support law enforcement and the prosecution and also act on behalf of the public entrustment and social justice, depending on which section of job the student works on.

Medical forensics is the third branch that resides in a county's medical examiner's office or coroner's office to conduct an autopsy based on medical or pathological disciplines if there is a death involved in the crime. The office is a neutral public agency with independent jurisdiction from law enforcement and prosecution. It usually conducts its own limited death investigation and has its own crime scene team that recruits crime scene technicians with a social or behavioral science background.

Simply speaking, non-natural science students in these social and behavioral disciplines may become the first line of personnel at crime scenes. If they become police officers, they would arrive at crime scenes first to protect them. If they become crime scene technicians, they would process the scene first, preserve the evidence, and transfer

them to crime labs. Or if they become lab assistants, they would prepare the evidence first for the lab examination. If these first-liners cannot handle the evidence properly, professionally, and legally, the consequence of it will be the phenomenon called “garbage in and garbage out,” which may partially explain many thrown-out cases in recent years and many exonerated cases by the Innocent Projects nationwide since the 1990s. One of the major issues in 732 wrongful convictions classified by National Registry of Exoneration was actors within the broader criminal justice system including reliance on presumptive tests without confirmation by a forensic lab [2].

If this logical analogy makes sense, education in forensic studies should carry equal weight, if not more weight, than forensic science education. While forensic science education is an umbrella covering many disciplines focusing on the examination of physical evidence in the lab setting, forensic studies education emphasizes an application of forensic science during crime scene processing for discovering, collecting, processing and preserving evidence. In certain situations, the crime scene team also perform preliminary field examinations (fingerprints and drugs) and assist in lab examinations. Therefore, the education of forensic studies combines analyses from the crime scene and partial lab practices. The approach is gaining some practical recognition since it educates a much larger number and a broader scope of students in criminal justice, criminology, psychology, and law programs. For instance, in many situations, the crime scene team can also help criminal investigations from the behavioral and socio-legal perspectives because they come from the disciplines of criminal justice, criminology, law, legal studies, sociology, public policy, and political science and have a much better understanding of social and criminal justice issues from their education and training. However, to better conduct their tasks at crime scenes, they do need to also have a thorough understanding of the field of forensic science with its multiple disciplines and sub-disciplines to become better police officers, crime scene technicians, crime scene investigators, detectives, prosecutors, and public defenders/ defense attorneys (students from law schools). Such an inter- or multi- disciplinary approach can bring together the knowledge, methods, and techniques from different disciplines for a common goal. The combined resources, valuable experience, and network can further strengthen the collective goal for a better criminal or social justice system.

Nevertheless, all the parties involved in a criminal case can be called forensic workers, namely, police officers, crime scene technicians, lab examiners, detectives, prosecutors, public defenders, defense attorneys, and judges. These professionals should understand thoroughly and thoughtfully the importance of both forensic science education and forensic studies education for the justice system we are pursuing. Additionally, since the publication of the NRC report [3] on the validity of forensic science, many cutting-edge technologies have been employed for new devices for crime scene processing. Since these devices, e.g., the rapid DNA station and the contactless camera, require only robotic steps to operate for preliminary examinations, crime scene technicians with a few basic natural science courses are qualified to perform in-field tests. Finally, it is predicted that the future of forensic science should depend on a blending or an interdisciplinary approach and display the relationship between forensic science and forensic studies education. Such an approach may attract more international coordination and cooperation and advance the field of forensic science from a national to a global level.

As the forensic science community enters the 21st century and faces more challenges in the criminal justice system, an inter- or multi-disciplinary approach is much needed. The approach has adopted many scientific principles, theories, and methods from other disciplines. Criminal justice, criminology, psychology, and law school are the four major disciplines that are continually developing to enhance a better understanding of modern-day crimes, criminals, victims, and related laws, such as penal codes, procedure laws, and evidence laws. In sum, three questions are posed for deeper thinking:

- Which discipline of students will be more likely to become police officers, crime scene technicians, prosecutors, or judges: the students in criminal justice, criminology, psychology, law schools or in natural science areas?
- Which discipline of students will be the first line of personnel in collecting and processing evidence at crime scenes: the students in criminal justice, criminology, psychology or natural science areas?
- Which discipline of students will be more likely to become the defense lawyers, public defenders, prosecutors, or judges: the students from law schools or natural science areas?

The answer is the former. Thus, there appears to be an increasing need or demand to offer for a forensic studies minor within departments of criminal justice, criminology, psychology, and law schools. This new shifting market presents five-folded challenges for transformational forensics:

1. How to build a bridge between forensic science education and forensic studies education?
2. What course(s) should be included in a forensic studies curriculum?
3. When will a textbook on forensic studies be available?
4. How to train current faculty in criminal justice, criminology, psychology, and law school to teach such a course or courses?
5. How to encourage the two branches to engage in more collaboration and cooperation?

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