



H115 Simulation-Based Learning in Forensic Medicine: The Use of 3D Photogrammetry

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Learning Overview: After attending this presentation, attendees will have a better understanding of the potential applications of 3D photogrammetry in the field of forensic medicine teaching.

Impact on the Forensic Science Community: This presentation will impact the forensic science community by providing useful insights and practical examples about 3D photogrammetry technology in a simulation-based teaching context.

Simulation-based learning in medicine concerns educational activities that use an artificial representation of a real-world medical situation. It allows the students to acquire different skills in a safe environment, contrary to in a real-life experience. This methodology is commonly used in various disciplines, such as aviation or economics. It was recently developed in a dematerialized format in the medical field but is not widely used in forensic medicine.

3D photogrammetry is a technology that makes it possible to create a 3D digital model of an object. It is based on the recording and interpretation of photographic images taken from different points of view, to obtain spatial data of the object. 3D photogrammetry was used in different fields, such as engineering, archaeology, or architecture, and was also developed in a wide variety of medical applications. The recent progress of this technology and its algorithms currently enable a large-scale use at low financial costs. This work presents potential applications of 3D photogrammetry at different stages of forensic medicine education.

The detail quality concerning the study of a body, an injury, or a pathological condition is particularly important in forensic medicine courses. Photographs are commonly used for that purpose; however, they are limited by the quality of the image, the perception of colors, the lighting, and the two-dimensional format. Video footages could also be used but are restrained in terms of interactivity with the students. The examination of real bodies could provide the best conditions, but the accessibility to the bodies for pedagogic purposes would be an issue regarding the number of students. 3D photogrammetry enables a capture of a whole organ, injury, or even a whole body in three dimensions, with good image quality. It also allows a good interactivity with the user thanks to its suitability for a touchscreen. The key features of 3D photogrammetry make it a powerful, low-cost, and user-friendly tool to improve teaching to a small or large group of students and for remote learning.

During this presentation, the use of real organs and bodies modeled in 3D with a photogrammetry software will be displayed for first, second, and third cycles of studies, post-graduation, and continuing education courses.

Photogrammetry, Education, Simulation