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# TEN REASONS WHY RENOVATING FORENSIC MEDICINE TEACHING AND LEARNING METHODS

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## ABSTRACT

knowledge of legal issues is necessary to practice medicine because all physicians may encounter medico-legal challenges. In Egypt, Forensic medicine have taught over decades, and the curricula have changed several times. However, teaching and learning methods mainly taught by traditional methods. **This review outline the importance of reforming teaching& learning methods in undergraduate curriculum in Egypt to prepare medical graduate students for better understanding their medico-legal duties as doctors in promoting the wellbeing of their patients**

**Key words** Forensic medicine, teaching & learning methods, undergraduate curriculum

### 1-INTRODUCTION:

Forensic medicine is the medical specialty that links medicine with law, incorporating forensic pathology, clinical forensic medicine, and forensic toxicology (*Eriksson, 2016*). Of all the different medical specialties, forensic medicine offers one of the most alluring opportunities. It is concerned with finding answers to legal issues such as the causes of death, the identities of the living and the dead, the effects of different injuries, the consequences of violent crimes, and the impacts of sexual offences.

In forensic medicine, the pursuit of truth is the only goal; theory and ambiguity have no place there. That is why forensic medicine is one of the most fascinating subjects that can very easily attract students. However, teaching this subject is not an easy task.

Globally, students are influenced by various TV shows and movies like CSI, FBI Files, and CID (*Ritesh2021*). As a result, it is challenging for a teacher or instructor to respond to students' questions solely using standard teaching methodologies. Additionally, it is difficult to convey fundamental and applied knowledge on the subject within the constrained time frames of traditional teaching methodologies.

**In this review**, the importance of reforming teaching& learning methods in undergraduate curriculum in Egypt will be outlined.

### 2-Forensic Medicine in undergraduate curriculum between the past and the present:

Forensic medicine was first taught as a part of internal medicine sallybus in school of medicine by Dr Clot Beck . Then in **1870**, it was taught as a separate subject in the school of medicine by Dr. Ibrahim Pasha Hassan. Professor Dr. Sidney Smith was the first chairman of the

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Department of Forensic Medicine, followed by Professor Dr. Mohamed Emara who was the first Egyptian to chair the department of forensic medicine at Cairo University (*Ramzy, 1992, Magdy et al., 2011*).

Nowadays, the number of faculties of medicine in Egypt is 47, accredited by the Supreme Council of Universities and the Ministry of Higher Education and Scientific Research, including 24 in public universities, 15 in private universities, and 8 faculties in private universities.

Forensic medicine departments at these universities teach forensic medicine and clinical toxicology. These two disciplines are taught as a fair part of the medical curriculum usually consisting of a large theoretical course with limited practical content.

**In Cairo university**, for example, forensic medicine and clinical toxicology was taught in the fourth year throughout the year one lecture /week, with practical sessions and museum visits. Autopsy teaching was removed from the curriculum . Then, it was taught for 8 weeks duration. Currently, it is taught in third year for 6 weeks duration with 60% of the teaching hours devoted to theoretical teaching. The practical content involves interpreting death certificates, interpretation of injuries, age estimation and sex identification from bones and teeth, identifying and commenting on poisonous seeds, interpretation of ABG, and ECG and Basic life skill lab training Writing a wound report, and death certificates was modified to their interpretations through case bases scenarios due to huge number of students and short course duration and limited resources.

Although practical sessions teaching methodology were recently renovated, it is still insufficient to prepare the students for better understanding their medico-legal duties as doctors in promoting the wellbeing of their patients.

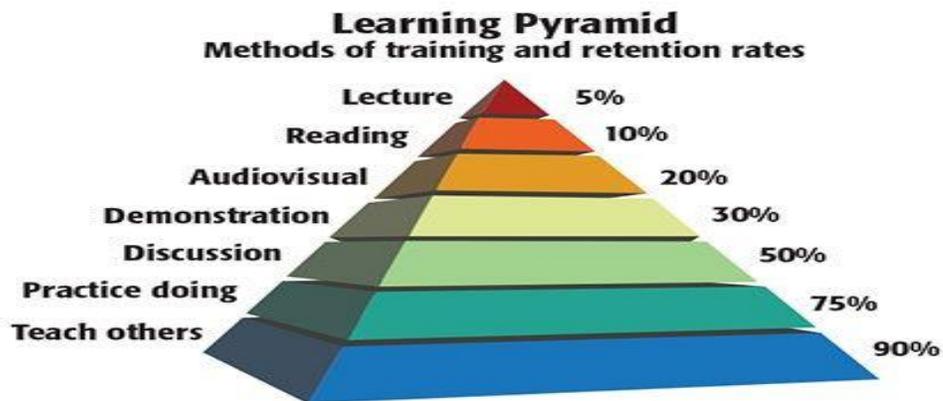
### **3- Teaching and learning methods:**

Principles and techniques teachers employ to promote student learning are known as a teaching methodology. These methods are influenced by the subject matter to be taught and the learner in different ways. A teaching strategy must consider the learner, the nature of the subject matter, and the sort of learning it is intended to foster to be effective (*Westwood 2008*).

**Teacher-centered** and **student-centered** methods to teaching can be broadly categorized. Authoritarian approach: teacher-centered, teachers are the primary player. The function of students in such approach is to passively receive information (through lectures and direct instruction) with the intention of testing and assessment. Teachers' main responsibility is to provide knowledge and information to their charges. Teaching and assessment are seen as two distinct entities in this model. While teachers serve as the model's authority figures, both teachers and students are equally involved in the learning process in the student-centered approach to learning. This strategy is also known as authoritative (*Burger et al., 2015*). The teacher's main responsibility is to guide and aid in students' learning and overall subject comprehension. Formal and informal methods of evaluation, such as group projects, student portfolios, and participation in class, are used to assess student.

According to several evidence, adult learners can benefit from active participation in the teaching-learning process (*Tiwari et al., 2006, Costa et al., 2007*).

*Figure 1* shows the learning pyramid which indicate 90% of training and retaining information is gained through teaching and training others (*letrud 2012.*)



Source: National Training Laboratories, Bethel, ME

*Figure 1: the learning pyramid*

#### **4- Teaching and learning methods of forensic medicine:**

Since decades, little has changed teaching-learning, and assessment techniques in response to the changing requirements of students and society. Forensic medicine teaching and learning methods lean more towards the traditional methods, such as classroom lecture, chalk-talk, and practical sessions, where the students are not sufficiently engaged, and learning is primarily teacher led. Traditional methods can become monotonous and boring, which makes it difficult for the student to understand some topics explicitly (*Sanjay Gupta et al., 2017*).

Additionally, due to the extensive course material and short deadlines, teachers and instructors are unable to implement new teaching and learning techniques. There isn't much room in the curriculum for project- or problem-based learning techniques, except from the practical classes.

#### **5-How to renovate teaching and learning methods in forensic medicine curricula**

The usefulness of numerous teaching and learning approaches is well-documented in medical education. For a better result in terms of the students' grasp of the subject, those novel teaching techniques must be used when teaching forensic medicine. Clinical teaching will improve the quality of medico-legal work in medical graduates. Case scenario method is a powerful student-centered teaching method that can impart students with critical thinking, communication, and

interpersonal skills and allows students to develop a collaborative, team-based approach to their education. The introduction of innovative modalities such as films, videos will improve reasoning ability, and memory skills of the students. Conducting interdisciplinary research between Forensic medicine & different subject branches could be enhance teamwork and research abilities of the student. Hands on training

in medico legal cases will making them more efficient in handling medico-legal aspects, and more aware of their rights, duties, patient's rights, and their limitations in practice. This might decrease number of litigations against doctors. Involving students in journal clubs, seminars will enhance their presentation skills, and critical thinking.

The cornerstone for renovation is the development of staff members' skills in new teaching and learning techniques, encourages them to regularly update their expertise, go to conferences, and engage in continuing medical education (CME). Furthermore, the Course contents need to be modified to include more relevant information, empathizing on real life encounters.

**In conclusion:** It is increasingly important to update the forensic medicine curriculum and make it more practical, research- and experiment-oriented, rather than to just theoretical. The introduction of a new teaching-learning approach provides a better understanding of the topics/course and develops the curiosity, skill, critical and innovative thinking in the learners. These new strategies may also be helpful in continuously engaging the students and provide effective learning.

## REFERENCES

- Burger, C., Strohmeier, D., Spröber, N., Bauman, S., Rigby, K. (2015).** "How teachers respond to school bullying: An examination of self-reported intervention strategy use, moderator effects, and concurrent use of multiple strategies". *Teaching and Teacher Education*. **51**: 191–202. doi:10.1016/j.tate.2015.07.004. ISSN 0742-051X.
- Costa M.L., L. Rensburg, N. Rushton(2007)** :Does teaching style matter? a randomized trial of group discussion versus lectures in orthopaedic undergraduate teaching *Med Educ*, 41 (2) , pp. 214-217 *Med Educ*, 40 , pp. 547-554
- Eriksson, A. (2016).** "Forensic Pathology". *Forensic Epidemiology*. pp. 151–177. doi:10.1016/B978-0-12-404584-2.00006-
- Letrud, Kåre (2012),** "A rebuttal of NTL Institute's learning pyramid", *Education* (133): 117–124
- Magdy Abdel Azim Kharoshah , Mamdouh Kamal Zaki, Sherien Salah Galeb , Ashraf Abdel Reheem Moulana Elsebaay Ahmed Elsebaay( 2011):** Origin and development of forensic medicine in Egypt *Journal of Forensic and Legal Medicine* Volume 18, Issue 1, Pages 10-13

**Ramzy, A.M. (1992)** The history of forensic medicine, in *Forensic Medicine Between Prosecution and Defense*, Eds. A.M. Ramzy et al., Lawyer's Library Publisher, Cairo, Egypt, pp. 58–61.

**Ritesh Kumar Shukla (2021)**: A new systematic approach of teaching and learning of forensic science for interdisciplinary students: A step towards renovating the forensic education system. *Forensic Science International: Synergy* Volume 3, , 100146 <https://doi.org/10.1016/j.fsisyn.2021.100146>

**Sanjay Gupta , Utsav N. Parekh , Jaishree D. Ganjiwa (2017)**: Student's perception about innovative teaching learning practices in *Forensic Medicine Journal of Forensic and Legal Medicine* Volume 52, , Pages 137-142 **Tiwari, P. Lai, M. So, K. Yuen(2006)**: A comparison of the effects of problem-based learning and lecturing on the development of students' critical thinking

**Westwood, P. (2008)**. What teachers need to know about Teaching methods. Camberwell, Vic, ACER Press