



Change's Times in Teaching/Learning Human Anatomy

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Letter to the Editor

Human anatomy is and will be the most essential of the basic sciences of Medicine. It is the science on which all other sciences related to human beings, their diseases and their treatment are based, as well as a fundamental part of the medical language. Teaching/learning human anatomy provides a basis for procedural and clinical skills in patient care for medical doctors [1]. For centuries, the complete idea of human anatomy study is all about anatomical dissection, lectures and traditional textbooks. But in the first decades of the 21st century human anatomy teaching/learning is confronting a remarkable change driven by novel technological innovations. Human anatomy is no longer considered a dissection-based, research-led discipline. And circumstances such as the increasing number of medical students, limited resources, and lesser time devoted to human anatomy teaching/learning process per the new curriculums have compelled every professor of human anatomy to use new educational techniques [2]. The medical education evolution has been demanded by the need for improved teaching/learning methods to understand the human body's complexities. Therefore, there is an increased need for the use of innovative technologies in anatomy education by digital resources, such as virtual reality simulations, augmented reality, 3D models online resources, Artificial Intelligence applications and others [3, 4]. These tools offer interactive and immersive experiences, allowing medical students to visualize and manipulate 3D models of anatomical structures without the ethical and logistical challenges associated with cadaver use [4, 5]. These innovative technologies can be repeated without the need for multiple cadavers, provide a safe environment, cost-effective and customize to cater to different learning paces, enabling students to revisit complex concepts at their convenience. Also these emerging technologies can isolate different anatomical structures in 3D form, reconstruct, zoom in and out, and transect them in order to appreciate anatomical form and relationships. Pausing, rewinding, and revisiting different structures and systems by creating presets that helps to provide personalization to the learners [6, 7]. Novel technological innovations offer a huge amount of supporting and reinforcing information to learners so that undergraduate medical students, residents and specialists can work with them at their own pace. But a possible disadvantage of emerging technologies concerns the absence of tactile feedback. Innovative technologies in teaching/learning human anatomy are providing a more immersive and engaging learning experience than anatomical dissections, lectures and traditional textbooks. Emerging technologies may not replace human interactions as lectures and anatomical dissection, but can supplement them and certain change the profile of human anatomy teaching/learning.

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Received Date: 20 Apr 2025

Accepted Date: 28 Apr 2025

Published Date: 30 Apr 2025

Citation:

Rafael Romero-Reveron. Change's Times in Teaching/Learning Human Anatomy. *WebLog J Anat. wjat.2025. d3002.* <https://doi.org/10.5281/zenodo.15978076>

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References

- Emadzadeh A, Eidi Baygi H, Mohammadi S, Eteazpour M, Yavari M, Mastour H. Virtual Dissection: an Educational Technology to Enrich Medical Students' Learning Environment in Gastrointestinal Anatomy Course. *Med Sci Educ.* 2023;33(5):1175-1182. doi: 10.1007/s40670-023-01867-z.
- Romero-Reveron R. Human anatomical dissection in the generation Z's medical syllabus. *Anatomy journal of Africa.* 2022; 11(1):2029-2032. doi:10.4314/aja.v11i1.1
- Evans L, Singer L, Zahra D, Agbeja I, Siobhan M, Moyes S, Optimizing group work strategies in virtual dissection. *Anatomical Science Education.* 2024; 17(6): 1323-1335. doi.org/10.1002/ase.2473
- Lee, J. W. Y., Susanto, J., Lai, S. H., Cheow, P. C., Low, L. X. T., & Bello, F. What Faculty and Students Value When Evaluating Human Digital Anatomy Platforms: A Mixed-Methods Study. *Journal of Medical Education and Curricular Development.* 2024; 11. doi.org/10.1177/23821205241256043
- Kalthur S, Pandey A, Prabhath S, Benefits and pitfalls of learning anatomy using the dissection module in an indian medical school: A millennial Learner's perspective, *Translational Research in Anatomy,* 2002; 26:100159, doi.org/10.1016/j.tria.2021.100159.

6. Rosario M. Virtual Dissection Table: A Supplemental Learning Aid for Head and Neck Anatomy in a Physical Therapy Program. *SchInt J Anat Physiol*,2024; 7(2): 17-24.
7. Sangam M, Deka R, G V, et al. Perception of First-Year MBBS Students Toward Virtual Dissection in Learning Anatomy: A Comparative Study Between High and Low Academic Achievers. *Cureus*. 2024;16(10): e72508. 10.7759/cureus.72508.