

Anatomy Education becomes “Alive”

Anatomy is the important first big subject in medical school. It is a true basic science, because all the other later subjects are dependent on the knowledge of what are the different parts of the body. Gross anatomy looks at the body parts as we observe them in actual life. Histology looks at what are the types of tissues that form these body parts, and how these structures get to work together. Biomolecular studies now look at the basic cellular components and functions at even smaller aspects. Having a firm understanding of what the body parts are gives us better knowledge of how they function, how and where disease develops, and how to manage them.

The basic structure of the human body does not change, at least in our lifetimes. Thus, there was the belief and understanding that the science of anatomy may be static. There may not be much excitement in the study of anatomy and thus in the teaching of it. Competent clinicians, however, particularly those in the surgical specialties, need a deep understanding of anatomy for safe clinical procedures. Students may have had very limited exposure to anatomy during clinical training. There is a concern that medical students are ill-prepared in anatomy when entering clerkships and residency programs.¹ It was thus very challenging to teach it and to learn it. A literature review and analysis by Kumar et al. showed that there were deficiencies in anatomical schedule, curriculum, teaching methodologies, and evaluation system in present medical education programs.² In recent years, the development of technology and the creative crop of faculty members have made the teaching and learning of anatomy very exciting.

This special issue is about the teaching of Anatomy, with articles based on the experiences and research of the faculty of the Department of Anatomy of the University of the Philippines (UP) College of Medicine. A lead article describes a short history of the department, which was actually one of the first departments established in the medical school. The article focuses on its rich experience in the teaching of anatomy which has definitely evolved through the years (Genuino et al., The Department of Anatomy in the University of the Philippines College of Medicine: Dissecting the History).

Gross anatomy, for many of the past generations of medical students, involved dissecting cadavers preserved in formalin and found in the third floor of the main building of the college. Cadaver-based instruction has survived as the main instructional tool for hundreds of years.¹ In the UP College of Medicine, one of the most unforgettable memories for most of the older batches, was the sound made during the practical exams in gross anatomy, where your next movement was signaled by a loud metallic bell sound. It was not actually from a bell. One of the urban legends of the College was that this piece of heavy metal may have come from the remains of weapons found nearby, a short time after the war ended. This piece of metal should be preserved for posterity.

Present students can now develop new memories in the learning of anatomy. The faculty presently use better preserved cadavers and body parts, using the Thiel embalming, which makes them soft and more lifelike, and without the strong smell of preservatives (Constantino et al., Evaluation of Modified Thiel Soft-embalmed Cadavers as a Novel Teaching Model for Musculoskeletal Ultrasound and Anatomy among Rehabilitation Medicine Residents). The increasing difficulty of getting cadavers for the growing number of medical and para-medical students have led to the use of newer learning sources, such as plastinated models and simulated models (Seng et al., Perceptions of Selected Undergraduate Medical Students in the Philippines on the Effectiveness of the Combined Use of Plastinated and Formalin-preserved Brains in Neuroanatomy Education: A Cross-sectional Study; Carillo et al., Task-oriented Learning in Head and Neck Anatomy Using Virtual, Formalin-preserved, Soft-embalmed, and Plastinated Cadavers). There are also articles on the evaluation of innovation in learning, such as the use of instructional dissection videos, self-directed manuals, and virtual instruction. These were evaluated not only in lectures but also in small group discussions. (Taladtad et al., Perceptions on the Use of Dissection Videos in Learning Gastrointestinal Anatomy among Medical Students; Rubio et al., Learner Preference on the Teaching Modalities in Musculoskeletal Anatomy in the New Normal: A Cross-sectional Study Comparing Dissection Educational Videos and Self-directed Manual to Proctor-assisted Cadaver Dissection; Carillo and Dumlao, Peripheral Brain Access in Small Group Discussion in Anatomy; Dizon et al., The Rotator Cuff Footprint in Filipinos: A Cadaveric Study).

The COVID-19 pandemic that started in March 2020 came as a big challenge to the College in general, and to the Department most particular. How would the usual teaching of practical anatomy, which generally used a hands-on approach, be done in the period of strict quarantines, and social and physical distancing? The pandemic caused an abrupt transition from face-to-face to online anatomy teaching, learning, and assessment. Although online education has ensured the continuity of anatomy education during the pandemic, its implementation has been challenging, and its effectiveness has been questioned.³ The Department developed Learning Enhancement in Anatomy Program or LEAP which would address this great need, and prevented any major delay in the teaching and learning activities of batches of medical students (Tecson et al., Student Evaluation of a Learning Enhancement in Anatomy Program (LEAP) during the COVID-19 Pandemic: A Retrospective Study). Online classes for lectures, demonstrations, and group discussions were conducted. A survey among students looked at their impressions and satisfaction when studying histology using virtual and actual light microscopy (Mantaring and Tecson, Satisfaction of Medical Students in Studying Histology Using Virtual and Light Microscopy: A Cross-sectional Study). An overall assessment of the teaching and learning experiences of faculty and students during the pandemic period was also conducted and reported (Mantaring et al., Students and Faculty Experiences, Perceptions and Knowledge on Distress during the COVID-19 Pandemic: A Descriptive Cross-sectional Study).

The innovations, changes, and adjustments made either intentionally or serendipitously during the pandemic have made good progress in improving Anatomy education in the Department. There were innovations in teaching materials, using better or different models and specimen. It cannot be thought anymore of as a “dead” subject dealing with “dead people”. There were also innovations in teaching strategies and approaches, using various platforms and technology. Learning has now become more interactive, more exciting, and definitely more interesting. It has become an “alive” teaching experience. The best way to teach modern anatomy is by combining multiple pedagogical resources to complement one another. Students appear to learn more effectively when multimodal and system-based approaches are integrated.¹ The Department is on the right track with the modern trends in anatomy education. The traditional anatomy education based on topographical structural anatomy taught by didactic lectures and complete dissection of the body with personal tuition, has been replaced by a multiple range of special study modules, problem-based workshops, computers, plastic models, and many other teaching tools.⁴

With a set of motivated, creative, and dedicated faculty in the Department of Anatomy, new approaches were established, more research on using new types of models and innovations in teaching/learning were done, much to the benefit of the students. Significant landmarks can now be added to the history of the Department.

Mario Philip R. Festin, MD, MSc, MHPEd

Professor

Department of Obstetrics and Gynecology,

College of Medicine and Philippine General Hospital,

University of the Philippines Manila

Department of Clinical Epidemiology,

College of Medicine, University of the Philippines Manila

REFERENCES

1. Estai M, Bunt S. Best teaching practices in anatomy education: A critical review. *Ann Anat.* 2016 Nov;208:151-7. doi: 10.1016/j.aanat.2016.02.010. PMID: 26996541.
2. Kumar R, Singh R. Model pedagogy of human anatomy in medical education. *Surg Radiol Anat.* 2020 Mar;42(3):355-65. doi: 10.1007/s00276-019-02331-7. PMID: 31612273.
3. Gasmalla HEE, Mossa AH, Taha MH, Wadi MM, Shehzad K, Abdalla ME, et al. Promoting more future-ready anatomy education after the COVID-19 pandemic: A scoping review. *Anat Sci Educ.* 2022 Nov;15(6):1120-37. doi: 10.1002/ase.2227. PMID: 36205041.
4. Older J. Anatomy: a must for teaching the next generation. *Surgeon.* 2004 Apr;2(2):79-90. doi: 10.1016/s1479-666x(04)80050-7. PMID: 15568432.