

'Tradition' and 'Technology' in Modern Era Anatomy learning

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Anatomy is a major subject in Preclinical set up in Medical field. It forms the base for understanding of human body, its structure and functions. Anatomy shares major bulk of learning in initial period of medical career. Anatomy has a rich history of discoveries and learning. Anatomy is commonly learned under subheadings like Gross anatomy, Histology, Embryology, Neuroanatomy and Genetics. With advancement of technology Anatomy has been sandwiched with old and new methods of teaching and learning.

Gross anatomy forms larger part of anatomy learning all over the world. Cadaveric dissection has been the backbone of Gross Anatomy since ages. In many parts regional approach is being followed; systemic approach is a difficult approach with regard to cadaveric dissections but Virtual dissections have made it possible to learn in systemic approach with enhancement of functional importance. Cadaveric dissection is the traditional way to learn the gross anatomy dating back to 300 BC and many still believe anatomy is incomplete without cadaveric dissection. Cadaveric dissection remains the gold standard to learn gross anatomy and its significance is supported by many reviews and research. In many parts people have been using Virtual body dissections, CT and MRI cross sectional anatomy to learn Gross anatomy with more functional orientation in new curricular system. A recent study from USA has proved cadaveric dissection superior to Virtual dissection. Handling of cadavers and its learned experience remains the long term memory for many in their vast medical academics. As supported by many studies Multimedia can be useful to break the monotonicity of traditional teachings but not at the cost of replacing the traditional teaching completely.

Ismail Memon (2018) from Saudi Arabia in a review study has observed that many Medical schools have restarted Cadaveric dissection in modified forms by integrating it vertically with medical training, post graduate hands on programs. Many institutions have reinstated the cadaveric dissection programs in medical curricula. Cadaveric Dissection is necessary to master the competencies in health professionals.

With research cadaveric preservation has become easy and less troublesome with various new solutions coming up and research is still going on to get a better preservation system for cadavers. Embalming is also evolving to minimize health hazards. In many developing countries availability of advanced technical resources is subjected to the financial viability of the health institutes. Cost effectiveness of various technologies is still under scanner.

Histology has progressed to the level of electron microscopy and molecular studies with special staining methods for various components in the tissues of the body. Simple microscope is still widely used in undergraduates teaching of microscopy. Handful of institutions in developing countries has latest microscopic technologies installed. The modern technology particularly immunohistochemistry and in situ hybridization allow study changes in molecular patterns of substances during tissue organization and cell differentiation. There is a need to expand the availability and training of all recent advances in microscopes and their application in Anatomy.

Embryology has seen a great progress in recent years with all the Genetic and Technical advances. Anatomical basis of various congenital anomalies can be understood with better understanding of the embryology. Embryological models of various types have been used in medical universities since long and still remain great resource of learning the human embryology. Biochemical markers and genetic investigations have come in picture in recent years to solve the puzzles of human development.

Genetics for long time has been struggling to get into right frame in medical curricula, Anatomy is still the mainstay for the basic learning of the Genetics in many countries. Genetics has seen a tremendous growth in modern era and established itself as a separate branch, anatomists are still exploring about the role of Anatomy in Genetics. Techniques such as Karyotyping, FISH, Microarray and immunofluorescence have emerged as major genetic assessment tools. Anatomy needs to spread its wings to incorporate the ever expanding Genetics.

From traditional cadaveric dissections to advanced Microscopic and Genetic technologies; everything is essential for progress of anatomy in modern era. All the necessary steps to incorporate traditional as well as new technology in Learning Anatomy should be taken at all local and administrative levels by everyone involved with Anatomy!!

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