



Guest Editorial

Learning physiology without animal experiments: A paradox

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“I Hear and I Forget, I See and I Remember, I Do and I Understand” said the Confucius. All these things are present in the teaching-learning cycle. Medical profession is all about doing and hence doing – the practicals assume great importance. In the practicals, there are certain things which cannot be practiced on human beings because of ethical consideration. Hence, our founder fathers of medical education included animal experiments at different levels of learning. The experimental physiology in the medical schools is invincible. Now, it is almost in the phase of extinction barring few centres. I am living witness to see the extinction of the experimental physiology decade after decade. I have been silently and helplessly observing over the past 40 years.

There are several factors responsible for this extinction. First, disinterest of physiologists. Second, the so-called animal welfare group and animals ethical committees have prescribed stringiest measures for the use of animals to perform the experiments. However, these experiments are not banned and there is always an opening for newer experiments. Think about the twitching of frog muscles of Galvani, milieu interior of Claude Bernard, vagus stuff of Otto Loewi, diabetic dog of Banting and Best, the salivating dog of Pavlov, decerebrate cat of Sherrington, and the list is endless. Third, physiologists are hanging on to the outdated methodologies, and the medical educationists and regulatory bodies live with it. It is now high time that we change to the newer techniques and equipment. Fourth, generation Z, this generation is digitized and is impatient to understand the older methods. Fifth, the regulatory bodies (Medical Council of India/National Medical Commission) are showing the blind eyes for the experimental physiology labs and half-heartedly mentioning about the virtual physiology labs. Sixth, there is gross deficiency of the trained faculty and personnel in the experimental physiology because the previous generation who were trained have faded into oblivion. Seventh, the administrators of medical schools/colleges are not interested to support the experimental physiology laboratories be it private or government institution. Each of them has number of reasons and stories to tell to shun the practicals. Eighth, the students are not interested to learn as it does not excite them. Ninth, the criteria of PG selection have closed the door for the interested people and the unwanted take the postgraduation in physiology as a last priority. Tenth, the PG training in number of medical colleges is completed without even touching the experimental animal. Only some voyeuristic questions were asked about the graphs and instruments without really caring or knowing about them.

Doing practicals develops skill, thinking, understanding, designing and innovations. This is a higher order of learning. The virtual physiology experiments cannot replace them as they are

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no good either. They are very expensive and captured by some commercial vendors. These do not match with actual experiments on animals. The animal experiments will answer the mechanistic questions of a research rather than just cataloguing the observations. The evidences with animal experimentation, one can explain the phenomenon without speculations. Therefore, it is high time to revive the animal experiments with state of art contemporary techniques so as

to keep the experimental physiology alive and enhance our learning experience. In addition, create an environment of research to answer the question why to be at par with the best laboratories in the world.

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