Letter to the Editor:

Response to 'Learner perception regarding the lecture and the small group discussion as Teaching/ Learning methods in Physiology'

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In response to the recently published article on 'Learner perception regarding the lecture and the small group discussion as Teaching/Learning methods in Physiology' authors conclusions on both lecture and small group discussions are well accepted by the student groups as very important methods of learning. According to the cognitive domains of learning, the pyramid of learning insists on the remembering, understanding, applying, analyzing, evaluating and creating are the fundamentals of learning curve¹. Development of learning skills is not solely on information gathering as in the present day of information overload due to the availability of internet, every learner/student are better accessed to the new information. In a lecture teaching, student mostly learns passively² without an interactive opportunity with the lecturer during a delivery. Lectures need to bridge the gap between information gatherings, to understanding of core knowledge of the subject of study in a meaningful simplified way because of the experience of a teacher that provides a systematic understanding of the complex principles. Gone were the days, where a teacher was the sole provider of knowledge in a more simplified way, usage of black board and systematic black-board drawings by the teacher was exemplary in the process of learning. The basis of simplified understanding of a complex subject by an expert teacher makes a deep understanding of a topic available in text books. Text books, though written by experienced teachers,

cannot simplify the basic concepts as a teacher only is able to explain them in a lecture class; textbooks cannot replace teachers though they are written by teachers themselves. But the entry of power-point based teaching has totally taken away the systematic concept unleashing by a teacher and many a time the foundation year student of year 1 medical course with Anatomy, Physiology and Biochemistry were totally confused in terms of information overload and content overload. In the entire medical fraternity of teaching/learning, 'teacher' cannot be replaced by any of the modern day smart tools and internet of things (IoT). Many a time, it was universally perceived that, learning as a mental or intellectual function only but far beyond its belief, one can also learn skills, attitudes and behaviors. In the affective domain receiving, responding, valuing, organizing and characterizing also are the important steps in learning. As the authors confirm through their research study that, both lecture based learning and small group discussions are the corner stone's of medical school learning³.

According to the student feedback, for delivery of basic concepts of a subject content in a lecture in the study, student preferred lecture teaching is the best mode as a teacher simplifies the complex concepts systematically which paves the way for further analysis, interpretation and evaluation. Definitely, in a medical school, teacher-based lecture is the backbone which needs to be highlighted as the

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fundamental basis of learning. In the same study, role of SGD promoted the active participation of student and teacher-student interaction with a prolonged student grasp of knowledge enhancing the interest in learning. Instead of considering, physiology chapter per se as a learning subject, in this study if a case based scenario on the principle of problem based learning if provided, it would have been much more interesting to the student cohort as a holistic integrated anatomical, physiological and biochemical principles would have been more practical as the student are prepared for a future clinical learning environment. Philosophy of education, 'learn by doing' and 'change is the only constant in life' by Greek philosopher Heraclitus is apt during the present industrial revolution -4era, where the smart tools add more on the learning concepts bridging the gap of remoteness in learning and sharing the knowledge and information is on a finger-tip which makes the present generation of student well informed about the rapid changes across the globe. It is welcome to the modern gadgets that bring a lot of impact on every sphere of human interactions and achievements but the timely study by Paul et al., $(2019)^3$ is an eye-opener and insists the teacher role in the student learning. Digital campus system concepts are making their entry into the higher education where students can access every information related to their academic activities⁴ that may once again may bring the current information in real time but may not be able to make the basic foundation student to understand the fundamentals

of structure, function and metabolic pathways unless were crafted by a teacher with simplified steps. In conclusion, lecture and small group discussions both uphold the principles of learning and fulfills the criteria of Blooms Taxonomy of learning and in addition the modern day's internet and smart tools are the media that bring teacher-student, studentstudent (peer) closer from any part of the World, though virtually but the knowledge transfer in reality. Nowadays simulation based medical teaching is gaining relevance as it fulfills the criteria of 'learning by doing' which is well proved in a 'train the trainer workshop' in a Malaysian study⁵. It also insists on the assessment part at the end of learning, be it by lecture mode or small group, PBL or Case based learning. Assessment followed by a feedback on learners understanding on the topic shall help in the reinforcement as the very concept of 'assessment drives learning and learning drives practice' 6, be it a lecture based or small group discussion based teaching among the medical students.

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