

# Neurophysiology 2020: Teaching neurophysiology in an integrated problem base learning curriculum: A KSAU-HS experience- Sheikh Abdul Saeed, King Saud Bin Abdulaziz University of Health Sciences

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Problem Based Learning in Medical Education was introduced almost 50 years ago by McMaster University. In this teaching & learning strategy students work as a team to solve complex real-world clinical problems. Today hundreds of medical schools worldwide have adopted this strategy utilizing integrated system methodology. King Saud Bin Abdulaziz University of Health Sciences opened its door for the first batch in 2004 in its Riyadh Campus & in 2010 at its Jeddah campus. University of Sydney problem-based learning integrated curriculum was employed & over the years it has been gradually amended to suit local needs. It's a six-year, three phase programme. In Phase I, emphasis is on English language & strengthening the Basic Sciences including Chemistry, Physics, Biology, Anatomy, Physiology, Pathology, Biochemistry, Microbiology, Immunology, Pharmacology, Ethics & introduction to contextual, integrated Problem Based Learning. In Phase II, students apply their Basic Medical Sciences knowledge (Microbiology, Anatomy, Pharmacology, Biochemistry, Physiology & Pathology) in a system based, contextual process revolving around Clinical cases. Didactic lectures are used to reinforce learning from the problem-based learning. Moreover, learning is strengthened by relevant Clinical Skills sessions. In the Phase III, students go through Clinical rotations in various clinical disciplines, learn clinical skills on real patients as well as on state-of-the-art mannequins & apply their Basic Medical Sciences knowledge to solve clinical cases. In this presentation we have concentrated on Neurophysiology teaching & learning in Phase II.

Problem-based learning is an innovative instructional approach which is being increasingly used in much health professional's education world-wide. This approach stimulates learning through small group discussions of a problem under the supervision of a tutor. There are many reported advantages of problem-based learning. These include increased knowledge retention, improvement of problem-solving abilities & better integration of basic science & clinical skills. In addition, it has been assumed that problem-based learning approach promotes utilization of the principles of social learning, which activates group discussion & hence contributes to the development of interpersonal, communication, & presentation skills. Problem-based learning could also contribute to the provision of a good learning environment by promoting self-directed learning & increase students' enthusiasm & motivation.

Many factors that could influence the effectiveness of problem-based learning tutorials have been recognized. These include

problems presented in the students, tutorials, tutors, & the process of the small group discussion.

The problem utilized in the problem-based learning sessions should be relevant, able to activate the students' prior knowledge, & complex enough to stimulate the students' discussion & motivation. Students, under the guidance of a tutor, conduct the problem-based learning sessions according to predetermined process. However, there is a need to further investigate the perception of medical students regarding different components of this approach.

The College of Medicine, King Saud bin Abdulaziz University for Health Sciences (KSAU-HS) has been established in 2005 & adopted problem-based learning curriculum. KSAU-HS is one of the leading universities in implementing this innovative instructional approach in Saudi Arabia. The present study was carried out to explore views of medical students about the relevance of problem-based learning in the Kingdom of Saudi Arabia local settings, & their views regarding the concept & process of problem-based learning used in the College of Medicine, KSAU-HS. Differences in students' views were examined as well.

Majority of participants were satisfied with problem-based learning approach & valued its importance in their learning process. Differences in gender, schools, & level of study have been identified in participants regarding the different features of problems & process of problem-based learning tutorials. Participants, in general, raised some concerns on the relevance of the used problems in the tutorials.

This study addressed the reaction of students toward the concept & process of the problem-based learning instructional approach. Different factors, especially those related to the local context should be further explored to improve the outcomes of problem-based learning curriculum in the Saudi setting.

In addition, studies that compare the behaviors & skills of graduates of problem-based learning & conventional curricula could help in evaluating long-term benefits & higher level of efficacy of both approaches. The comparison of patients' satisfaction & their medical outcomes of graduates from both approaches could also be considered for advanced levels of evaluation.