

**Title:** Problem Based Learning: A place in the sun for radiology

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**Context and setting:** The Faculty of Medicine, Makerere University Kampala (MUK) had been running a traditional 5-year undergraduate medical curriculum since 1924. In 2003, the school changed its curriculum to adopt a SPICES model (Student centered, problem-based (PBL), integrated, community based, electives and systematic. Radiology was integrated into all courses throughout the programme.

**Why was the idea necessary?** There are 20 radiologists in Uganda serving a population of 26 million people. There is thus a great need for doctors who are able to interpret their own radiographic investigations. For this reason, undergraduate basic radiology training in the new PBL curriculum was considered essential.

**What was done:** The Cardio-respiratory course in the first year of study was identified as a suitable place in the programme to initiate basic radiological anatomy learning. The learning outcomes, content and cases were modified appropriately and relevant radiographic material for the cases were prepared. Students attended two small group sessions in which the normal anatomy of chest radiographs was discussed and demonstrated in an interactive manner. These sessions were facilitated by a radiologist and supplemented the interpretation of chest radiographs in the PBL cases. Emphasis was put on the chest radiographs since this is the most commonly radiological investigation in clinical practice in developing countries. The educational impact of this learning strategy was evaluated by determining the ability of first and final year students in the identification of normal radiological anatomy visible on a chest radiograph. In contrast to the first year students the final year students had been taught radiology in the traditional programme ( discontinued in 2003) by large classroom lectures. Students and tutors satisfaction was assessed after the course using a self-administered questionnaire scored using a likert scale (1=strongly disagree to 5= strongly agree).

**Evaluation of the results:** The use of PBL is a new approach at MUK and is aimed at conceptualizing learning and making it relevant to clinical practice. The students found integration of radiological anatomy and investigations into the PBL cases exciting and motivating and the tutors enjoyed the experience. Thus the main objective of introducing radiological anatomy and investigations to first year students was achieved. More importantly, the first year students performed just as well as the final year students in a quiz requiring the identification of 12 anatomical structures on a chest radiograph. The mean score achieved respectively were 7 and 8 out of 12 respectively. This demonstrates that early integrated exposure to radiological anatomy and investigations facilitates the learning of basic radiology by undergraduate students. This method of achieving basic competence at radiological investigation and interpretation skills is essential given the shortage of radiologists in developing countries like Uganda.

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