



## Challenges in Implementing an Integrated Curriculum in Xavier University School of Medicine, Aruba

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### ABSTRACT

Xavier University School of Medicine (XUSOM), a private medical school in Aruba shifted to an integrated, organ system-based curriculum from January 2014. There is greater emphasis on problem-based learning, small group activities, early clinical exposure, and self-directed learning. In this article the author describes challenges faced while implementing the integrated curriculum. Among the challenges faced were faculty apprehensions about an integrated curriculum, faculty apprehensions regarding self-directed learning, providing early clinical exposure to the students, organizing activities and practical sessions for students, learning the art of medicine, developing student skills for critical appraisal of scientific literature and developing closer links with the community and the health system. The strategies adopted for overcoming some of these challenges is also described.

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### Introduction

Xavier University School of Medicine (XUSOM) is an off shore medical school in Aruba admitting students from the United States (US), Canada and other countries to the undergraduate medical (MD) course. Before 2013 XUSOM was a traditional medical school following a discipline-based curriculum. Since January 2013 the school has shifted to an integrated, organ system-based curriculum with early clinical exposure, use of standardized patients (SPs), medical humanities, problem-based learning (PBL) sessions, sessions on critical appraisal of scientific literature, sessions on rational use of medicines and family health visits [1]. Initially the 'normal' human subjects of anatomy, physiology, and biochemistry were

taught during the first two semesters while the 'abnormal' subjects of pathology, microbiology, pharmacology and introduction to clinical medicine were learned during the next two semesters. From January 2014, the school has shifted to a fully integrated organ system-based curriculum [2].

As chair of the Curriculum Committee I have been involved in planning and implementing these changes. In this article I briefly describe some of these challenges faced while implementing an integrated curriculum.

**Faculty apprehensions about an integrated curriculum:** In XUSOM while following a discipline-based curriculum faculty had considerable freedom regarding deciding what to

be taught and how to teach it. Student assessment is carried out using multiple choice questions (MCQs) according to the United States Medical Licensing Exam (USMLE) Step 1 format. With an integrated curriculum there are restrictions on the sequence in which various topics are taught and also on the depth to which these are covered. At XUSOM each organ system is managed by a system chair. The curriculum committee and the system chair decide in consultation with the faculty regarding facilitating student learning in an integrated manner. Though every attempt is made to arrive at a consensus there have been instances where a faculty member felt their status as a 'subject expert' had been compromised. There are also disagreements about the extent to which certain topics should be covered and the number of lecture hours which should be allotted to different subjects. Deciding on the number of questions which should be allotted to a particular subject in the exams is also often difficult. We use the number of lecture hours as a criteria for deciding the number of questions but this may not be an ideal solution.

We try to address this problem through frequent meetings with faculty and involving them in decisions regarding the material to be addressed during different organ systems. As the student number is low and the number of faculty less it is easy to meet and discuss contentious issues. All faculty meet fortnightly to discuss and finalize the teaching-learning schedule for the next fortnight.

***Faculty apprehensions regarding self-directed learning:*** During the last eighteen months there is an increased emphasis on small group activities, PBL and self-directed learning (SDL) in the institution. Accreditation agencies, licensing boards and universities emphasize the development of SDL and lifelong learning skills. Modern medical education is increasingly based on the educational philosophy of constructivism where students construct knowledge using their previous knowledge and the learning environment. However, some faculty members have misgivings about whether students will be able to learn a particular topic if they are not

'taught' the same by their teachers. At present PBL sessions are conducted once a week. During sessions faculty sometimes provide 'answers' to students (as per their 'traditional' role) rather than encouraging them to search and find answers and solutions on their own.

The school has brought in external experts to conduct sessions for faculty regarding PBL facilitation and I and the PBL director sit through certain sessions and provide inputs to the faculty regarding their strengths as a facilitator and areas to be improved.

***Providing early clinical exposure to the students:*** Early clinical exposure (ECE) has an important role in teaching different aspects of professionalism and emphasizing the clinical importance of material covered during the basic science years and can also influence career choices [3]. Also the majority of MCQs in USMLE Step 1 use a clinical scenario as the stem. Providing ECE in offshore Caribbean medical schools is a challenge as most schools do not have attached hospitals and students do their clinical rotations in the US. We have linked up with a local general practitioner (GP) and students are also posted in the local hospital for 16 hours during their basic science years. In Aruba healthcare is provided by the government and it has been a challenge to create linkages between the school and the local health system though we are slowly making progress. The hospital observership is in the evening when most doctors are not present and students mainly shadow the nurses.

We are trying to get other GPs involved in teaching our students. We also have regular discussions with the involved GP regarding the subject matter to be taught, better integration of clinical teaching with the organs systems being covered and student assessment. At certain times during the observership the faculty members coordinating the posting discuss admitted patients with the students. We have also trained SPs from Aruba and use them for both teaching-learning and assessment.

**Organizing activities and practical sessions for students:** In offshore Caribbean medical schools with the emphasis on preparing students for the USMLE Step 1, didactic lectures are the major teaching-learning method. Many schools do not have practical laboratories and rooms where small group sessions can be conducted. Also many faculties are not trained to conduct 'practical' sessions. In pharmacology we are conducting sessions for students on using essential medicines rationally using the 'Guide to good prescribing'. We also conduct sessions on analyzing and responding to pharmaceutical promotion. Simulated animal experiments dealing with the autonomic nervous and the cardiovascular system are also conducted. With the rapid growth in different software, computer simulation could offer students the opportunity to conduct experiments virtually.

**Learning the art of medicine:** During the last five semesters I have facilitated a medical humanities module for all first semester medical students. Attitudes, behaviour and professionalism are assessed using a structured rubric and a module on cultural diversity and its impact on healthcare delivery is offered to third and fourth semester students. The ability of students to show empathy, make patients feel comfortable and talk to patients is taught and assessed using SPs.

**Developing student skills for critical appraisal of scientific literature:** The ability to critically appraise the scientific literature is important for doctors. A course on research methodology had a positive impact on students' attitude towards science [4]. We have introduced a module on critical appraisal of scientific literature for undergraduate medical students. During the first semester students learn to critically appraise various parts of a scientific paper while during the second and third semesters they learn about the appraisal of randomized clinical trials. During the fourth semester students learn how to appraise meta-analysis and systematic reviews.

**Developing closer links with the community and the health system:** Recently there has been a

growing interest in social accountability in medical schools [5]. There are challenges in developing community involvement and social accountability in offshore Caribbean medical schools. Most students are not from the location where the school is situated. Community medicine and public health have not been important topics in USMLE step 1 so schools have placed less emphasis on these topics. Many students do their clinical rotations in US hospitals which admit students from a number of schools. We conduct health fairs where diagnostic tests, consultation and advice are provided to attendees and during the first and second semester a group of students are allotted two or three families which they follow up over a six month period.

Thus we have been able to partially address some of the challenges while others remain to be addressed. To further develop teaching-learning during the basic science years continuous effort towards addressing the challenges is required.

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