Experiences in Teaching and Learning

Introducing problem-based learning into a Canadian-accredited Middle Eastern educational setting

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A R T I C L E   I N F O

A B S T R A C T

Background and purpose: Adaption of active learning strategies into new cultures and contexts requires careful consideration to maximize effectiveness and meet intended objectives. The aim of this paper was to describe the adaption and implementation of problem-based learning (PBL) within a pharmacy curriculum in a Middle Eastern context.

Educational activity and setting: PBL was implemented into the curriculum at Qatar University in 2014 and expanded in subsequent years to include differing courses and contexts. The process was blueprinted to align with international accreditation standards. A SWOC (Strengths, Weaknesses, Opportunities, Challenges) analysis was completed to identify cultural and contextual facilitators and barriers regarding implementation and achievement of target outcomes.

Findings: Strengths included novelty, enhancement of learning, engagement, and accreditation alignment. Weaknesses included student preparation and buy in, facilitation inconsistency, and logistical support. Opportunities included expansion, departmental support, timing, and congruency with practice skills. Challenges included student resistance, departmental engagement, assessment, expansion, and cultural norms in teaching and learning.

Discussion and summary: PBL provided benefit but also presented many cultural and contextual challenges of adaption from Western settings. Future work should focus addressing these cultural factors, to promote effectiveness of PBL as an active learning strategy.

Background and purpose

Active learning strategies are ones that tend to enhance student educational outcomes within academic institutions.[1] The importance of such strategies is recognized by various entities, including accreditation bodies.[2] Many different types of strategies exist; however, problem-based learning (PBL) is largely adapted into different settings and educational contexts, worldwide.[3] It is a process that focuses on student collaboration and independent learning. Evidence exists regarding its use as a tool to support student-learning outcomes.[1] As such, it is being promoted during curricular reform for schools in Canada and abroad that are currently implementing entry-to-practice doctor of pharmacy programs. However, curricular reform should be completed using a systematic approach and based on best evidence from local and international sources.[4]

While global experience exists regarding implementation of PBL into pharmacy curricula, there exists minimal information regarding this matter from the Middle East. Interestingly, many programs from the region have achieved or are attempting to achieve accreditation from Western-based accrediting bodies.[5] As accreditation standards are placing more emphasis on teaching and

learning strategies and environments, it is necessary to generate and report knowledge regarding implementation of active learning in these contexts. There is a major literature gap regarding this area, as it is unknown how international accreditation influences design in teaching and learning. Therefore, the objectives of this paper are to describe and critically evaluate implementation of PBL within the undergraduate pharmacy curriculum at Qatar University from a faculty perspective.

Educational activity and setting

Setting

This study was conducted on campus at the College of Pharmacy at Qatar University, which has two programs (bachelor of science in pharmacy and doctor of pharmacy) accredited by the Canadian Council of Accreditation of Pharmacy Programs (CCAPP). The student population consists of 25 female students per professional year for a four-year undergraduate bachelor's degree. Faculty members are of mixed gender and come from many countries around the world, including Qatar, Syria, Jordan, Egypt, Lebanon, India, Canada, US, the United Kingdom, Australia, Nigeria, and Ghana. Active learning strategies have been a focus for implementation throughout the last four years. Prior to this time, most sessions occurred via didactic lecturing, professional skills and basic science laboratories, and case-based discussions. A total number of four faculty members have been involved in implementing PBL within our institution. These faculty members all had previous exposure to PBL methods.

Activity

PBL was originally introduced in spring 2014 in a final year integrated case-based learning course by experienced PBL facilitators. This was the first time PBL was implemented in the curriculum. In this course, students typically work on cases facilitated by faculty members that are based on different disease states and integrate components of pathophysiology, pharmacology, pharmacokinetics, and pharmacotherapy. During this period, students were divided into small groups (four groups with six members each) and cases were administered over four days. Faculty spent approximately 5–10 hours preparing for PBL sessions (developing cases, answer keys, and facilitation notes).

The first PBL session was proceeded by an orientation day, which introduced students to the concept, roles, and expectations of the teaching style. On the day of the first session, students received the case and divided roles (chairperson, recorder, time keeper, and other group members). For some sessions, a pre-reading quiz was given to ensure students came prepared to begin case discussions. After receiving the case, students were expected to determine learning needs to solve the case and address the major drug therapy problem. Learning needs were distributed among group members to review before the next session. Students were expected to prepare responses to identified learning needs outside of class time. On the second day, students shared their key findings and then received an update to the case. The process of identifying learning needs then repeated. On the third day, students once again shared learning points and then completed an in-class assignment related to the case (care plan, chart documentation, drug information summaries, etc.). The facilitating faculty member then reviewed the case answers with the students on the fourth day.

Based on the process described above, a modified version was adapted for second and third professional year students in fall 2014 and spring 2015. However, due to mandatory topic inclusion and decreased time allocated for course content, each PBL topic was given over two sessions instead of four. This approach still allowed for independent learning initiatives between sessions.

Evaluation

Data for evaluation was obtained from multiple sources. First, faculty members kept field notes that were handwritten and uploaded to online course management software regarding the PBL process. These notes specified aspects that went well and areas for future improvement. Course change forms were also available to investigators for review. These forms outlined inclusion or modifications to the PBL process with detailed rationale as to why changes were being made. Investigators also extracted course evaluations for any course including PBL methods and hand searched for student statements relating directly to the teaching methods. These materials were supplemented with investigators' own experiences as PBL facilitators.

SWOC (strengths, weaknesses, opportunities, and challenges) analysis was used to critically evaluate the PBL process described above based on all experience to date. First, two faculty facilitators each were instructed to independently determine strengths, weaknesses, opportunities, and challenges regarding implementation of PBL at our institution for both the four- and two-week long sessions. Secondly, key points were shared during an in-person meeting and discussion ensued to reach consensus over inclusion of results obtained. A third party was available to resolve discrepancies that could not be resolved through discussion alone. The two faculty members both had exposure to PBL prior to 2014 and have been facilitating PBL within the program for at least two years. One faculty member was originally trained in a Canadian context and the other in Lebanese context. These differing perspectives helped to balance expectations and interpretations from the SWOC analysis.

This report is purely a critical appraisal of problem-based learning teaching technique done performed by faculty members within an academic institution and therefore our institution did not require ethical review.

Findings

Faculty independently identified points for the SWOC analysis and came to consensus regarding four strengths, five weaknesses,