

DESIGN, IMPLEMENTATION AND EVALUATION OF A FACULTY DEVELOPMENT PROGRAM IN PROBLEM-BASED LEARNING CORE SKILLS IN FACULTY OF MEDICINE, ALEXANDRIA UNIVERSITY

Soha Rashed Aref Mostafa¹, Aly Mohamed Abdelmohsen², Hoda Mahmoud Khalifa³, Iman Hassan Diab⁴, Nouran Nader Elnemr⁵

Department of Community Medicine¹, Pediatrics², Histology and Cell Biology³, Medical Biochemistry⁴, Medical Education⁵, Faculty of Medicine, Alexandria University.

Introduction

Alexandria Faculty of Medicine (AFM) is adopting a problem-based learning (PBL) approach in the new joint Alexandria/Manchester program. PBL is one of the innovative approaches that promotes students' self-directed learning and clinical reasoning skills. Success of the learning process in PBL is largely dependent on faculty members' acceptance and commitment to the role of facilitators. This role differs substantially from tutor's role in the traditional approach. Since it's the first time to apply PBL at AFM, adequate training of faculty members is needed to support their transformation into PBL facilitators.

Aim of the work

The aim of this study was to design, implement and evaluate a faculty development program in PBL core skills. This study was conducted to:

- Evaluate the effect of PBL training workshops on improving faculty members' knowledge about- and attitudes towards PBL.

Subjects and Methods

This study was conducted on 112 faculty members and teaching assistants from different basic and clinical sciences' departments (attendees of six consecutive workshops) who applied for the PBL faculty development program during the academic year 2020 / 2021 at AFM. Voluntary application / participation in the program was open to all faculty at AFM.

An interventional quasi-experimental (single group pre-test post-test) design was adopted in this study. The study used a mixed approach. A series of one day training workshops were designed based on principles of experiential and adult learning theories. Participants were introduced to rationale, process, roles, and assessments in PBL tutorials using a lecture and a video of a recorded PBL session. They simulated a PBL session and reflected on their learning through discussions. A WhatsApp group was used to facilitate communication with participants. Participants' knowledge about and perception of PBL were assessed before and after conducting the training to evaluate their learning.

Results

There was a statistically significant increase in participants' scores at the post-test as compared to the pre-test ($p < 0.001$), which pertains to their knowledge and understanding of PBL. Additionally, statistically significant increases in participants perception of PBL advantages and disadvantages were observed after the training ($p < 0.001$).

The majority of respondents believed that they would be able to be facilitators in PBL after completing the training.

Table 1: Paired-samples t-test for MCQs knowledge pretest-posttest

	Pretest Mean \pm SD (Out of 19)	Posttest Mean \pm SD (Out of 19)	t – value	p – value	Effect size(r)	95% Confidence Interval	
						Lower	Upper
MCQs knowledge test (N = 102)	10.76 \pm 2.330	14.18 \pm 1.895	-13.273	<0.001 ^a	0.797	-3.922	-2.902

^a Statistically significant at $p \leq 0.05$.

Table 2: Paired-samples t-test for attitudinal scale

	Pretest Mean \pm SD	Posttest Mean \pm SD	t – value	p – Value	Effect size(r)	95% Confidence Interval	
						Lower	Upper
PBL: the claims and the evidence (N= 102)	17.05 \pm 1.3	17.54 \pm 0.886	-3.822	<0.001 ^a	0.355	-0.745	-0.236
Disadvantages of PBL (N = 102)	10.02 \pm 2.304	11.63 \pm 2.333	-6.211	<0.001 ^a	0.526	-2.121	-1.094

^a Statistically significant at $p \leq 0.05$.

Table 3: Implications for future practice

Statement	Positive responses	Negative responses		Total
	Agree	Uncertain	Need more information / experience	
1. I believe it is my responsibility to contribute to the new integrated, problem- based learning program	100 (92.6%)	3 (2.8%)	5 (4.6%)	108
2. I understand the importance of acquiring facilitation skills to help conduct a PBL session	106 (99.1%)	0	1 (0.9%)	107 ^a
3. I would rather be a facilitator than a traditional teacher	88 (83.8%)	8 (7.6%)	9 (8.6%)	105 ^b

^a Out of the 108 participants who completed the post-test 1 participant didn't answer the second question in this section.
^b Out of the 108 participants who completed the post-test 3 participants didn't answer the third question in this section.

Conclusion

Faculty development program plays a fundamental role in facilitating the transition process during curriculum change to PBL. The results indicated that active methods such as role-playing and group discussions improved participants' knowledge, understanding as well as perception of PBL. This is particularly useful in major curricular changes which require flexibility and cooperation of faculty members.