

Original Article

Training Workshops and Faculty Development for Problem Based Learning

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Abstract

Objective: The objectives of this study were to report brief description of training workshops and assess the feedback of participants.

Methods: Four one-day training workshops were organized in February 8, 10, 15 and March, 2021 respectively. Feedback of the participants was taken on valid semi-structured questionnaire after the end of proceedings of each training workshop and assessed at Kirkpatrick Model of Evaluation level-1 (Reaction) and 2-a (Perception on Learning). Data analysis was done using Microsoft Excel for mean, standard deviation, t test and p-value.

Results: Out of 55 participants of four training workshops, 46 provided feedback; the response rate was 83.6%. The training workshop was rated by the participants on scale 1-10 (1= poor, 10=excellent) about usefulness (8.11 ± 1.43), content (7.36 ± 1.60), relevance (8.13 ± 1.31), facilitation (8.52 ± 1.49) and overall process (8.23 ± 1.31). Participants ratings on specific sessions, “PBL Process”; “Role of Tutor”; “Designing PBL problem package”; and “Conducting PBL Tutorial” at Likert scale 1-4 (4=extremely important, 3=moderately important, 2=slightly important, 1=not important) were 3.15 ± 0.56 , 3.24 ± 0.64 , 3.33 ± 0.56 , and 3.22 ± 0.63 respectively. No significance difference was observed between rating of male and female groups. Majority of the participants recommended for increasing duration of workshop for detailed understanding of the subject, allocate adequate time for the practice session and arrange other types of training workshops in medical education.

Conclusion: The significance of faculty development trainings is recognized by participants. Their reaction and perception on training workshops were positive. They acknowledged importance of training workshops and its' worth in implementation of PBL

Key words: Faculty development, Feedback, Kirkpatrick Model of Evaluation, PBL, Perception, Reaction, training, tutor

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Introduction

Problem-based learning (PBL), a pedagogical educational strategy is used in various fields of education including health professions education.¹⁻³ PBL has been conducted in different ways, however, there are some core features of PBL session that cut across all models. The four main features of PBL session are 1) Use of scenario (divided into triggers) as an initial point for learning, 2) Self-directed and self-regulated learning, 3) Students work and discuss in small groups tackling these triggers (tasks), and 4) The tutor who facilitate PBL process.^{1,4}

A philosophy of PBL outlooks learning as a process of

knowledge construction where students play an active role in knowledge acquisition and needs teachers to facilitate their learning. In PBL, the teacher is commonly called as tutor or facilitator who plays a unique role in students' learning process.³⁻⁵ The tutors in PBL develop problem package including real life problem or scenario, tutor guide; boost critical thinking; promote self-directed learning; supervise progress of students group; and help in creating a learning environment that motivates students of group, generate in-depth understanding, and foster teamwork.⁶

The development of teams of effective and efficient PBL Tutors or Facilitators is a critical step for imple-

mentation of PBL.^{7,8} Because of changing role of the faculty members in PBL, teachers teaching traditional curriculum feel great deal of discomfort as they are not oriented or trained about PBL an instructional method, for some the change is hard to accept, some may be not interested, and few may indirectly oppose PBL implementation. It is essential for the innovators to work together with faculty members who have been teaching traditional curriculum to develop a mutual understanding with regard to the philosophy of PBL. Hence, faculty development is critical for the implementation of PBL.^{7,9}

Bilawal Medical College (BMC) is a constituent medical college of Liaquat University of Medical and Health Sciences (LUMHS) Jamshoro, Sindh Pakistan. BMC was established in 2018 and admitted first batch of undergraduate medical students in 2019. It only admits male students. LUMHS has revised undergraduate medical curriculum and started its implementation from 2021. The curriculum is "Integrated Modular-Based Hybrid Curriculum". Problem-based learning is one of the instructional strategies incorporated in the curriculum.¹⁰

In January 2021, BMC decided to implement PBL instructional method for the teaching learning of students and conduct one PBL session during implementation of each module for 3rd Batch of undergraduate medical students from new academic year starting from February 2021. BMC has faculty members teaching traditional curriculum but they are not formally trained to implement PBL. So, BMC decided to train the faculty members for smooth implementation of PBL. For this purpose, BMC organized Training Workshops on PBL for Tutors. The objectives of this study were to report brief description of training workshops and assess the feedback of faculty members participated in training workshops.

Methods

This descriptive study was conducted at BMC, LUMHS Jamshoro, Sindh Pakistan with the objectives to report brief description training workshops and assess the feedback of faculty members participated in training workshops.

Description of Training Workshops on PBL for Tutor (Objective 1 of the study)

Four one-day "Training Workshops on PBL for Tutors" were organized on February 8th, 10th, 15th and March 3rd, 2021 respectively at BMC. The program schedule of all training workshop was same. The prototype program schedule is shown in table I.

The general objective of the training workshops was to train the faculty members for conducting PBL in Basic Sciences Phase/Spiral of undergraduate (MBBS) study. The specific objectives were to: explain the PBL process to faculty members (tutors), differentiate the role of tutor in conducting PBL session and design and develop PBL package including scenario, triggers, tutor guide and orient the students about PBL process.

The workshop was conducted by resource person Dr. Rano Mal Piriyani Professor of Pulmonology and Medical Education and Dr. Nudrat Zeba, Assistant Professor of Community Medicine and Coordinator for Module Implementation from BMC facilitated the workshop proceedings.

The session conducted in workshops were: 1) PBL Process (Basics of PBL, Characteristics of PBL and Basics of PBL process), 2) Role of Tutor in designing problem package, conducting PBL tutorial and orienting the students about PBL. 3) Group Work: A-Develop Scenario, Triggers, Learning Objective and B- Develop Tutor Guide and 4) Mock Session: Conducting PBL Tutorial.

Table 1: Program Schedule of "Training Workshop on PBL for Tutors"

Time	Session	Resource Person Facilitator
09.30-09.35	Opening	-
09.35-09.40	Introduction of the participants	Dr. Nudrat Zeba
09.40-09.45	Expectation of the participants	Dr. Nudrat Zeba
09.45-09.50	Objectives, Methodology & Assessment	Dr. RM Piriyani
09.50-10.30	PBL Process: Basics of PBL, characteristics of PBL & basics of PBL process.	Dr. RM Piriyani
10.30-11.30	Role of Tutor: Developing PBL package (Scenario, Learning Objectives and Tutor Guide) and orient students about PBL	Dr. RM Piriyani
11.30-11.45	Tea Break	
11.45-13.00	Designing problem package for PBL (Group Work)	Group A: Develop Scenario, Triggers, Learning Objective Group B: Develop Tutor Guide
13.00-14.15	Conducting PBL Tutorial: Mock Session	Group A & B
14.15-14.30	Feedback and Closing	Dr. RM Piriyani

Interactive Tutorial, Brainstorming, Small Group Work Discussion and Presentation by the participants in Plenary Session were the methods used for conducting training workshops. The written feedback of the participant faculty members was taken as an assessment.

Total 55 faculty members participated in four training workshops; sixteen in first, fifteen in second, ten in third and fourteen in fourth. Forty-five faculty members were from basic sciences departments while ten from clinical sciences departments.

Assessment of the feedback of faculty members (Objective 2 of the study)

After the proceedings of each training workshops, feedback of the participant faculty members was taken on the valid semi-structured questionnaire.¹⁰ There were four parts of questionnaire:

Part A. Demographic information: Info was taken regarding age in years, sex, year of graduation and post-graduation, and participation in any training related to PBL earlier.

Part B. Overall feedback on training: This part contains one close ended question on the rating workshop on scale 1-10 (1=poor, 10=excellent) for usefulness, content, relevance, facilitation and training as overall.

Part C. Feedback on specific sessions: This part covered four closed ended questions on specific sessions conducted in workshop: session on “PBL Process”, session on “Role of Tutor”, session on “Designing problem package for PBL (Group Work)” and session on “Conducting PBL Tutorial (Mock Session)”.

Part D. Feedback for improvement: This part had 3 open ended questions; first one was on good-points/ strengths of training, 2nd on areas for improvement and 3rd for additional comments.

Out 55 participants of four workshops, 46 provided feedback. The response rate was 83.6%. Institutional review committee of BMC granted the ethical approval for the study and the informed consent was obtained from the participants.

The feedback of the tutors on training workshops was assessed at level I (Reaction) 2a (level 2a: perceptions on learning) of Kirkpatrick Model of Evaluation which has 4 levels; level 1: evaluation of reaction; level 2: evaluation of learning (level 2a: attitudes/perceptions and level 2b: knowledge/skills); level 3: evaluation of change in behavior; and level 4: overall impact of training (level 4a: organizational practice, level 4b: student benefit and level 4c: patient benefit).¹¹⁻¹⁴

The collected data was entered in Microsoft Excel and analyzed for the central tendency (mean and standard deviation) and means of male and female groups of the participants were compared using t test and p-

value was computed for significance.

Results

The findings are mentioned under headings of objective 1 and objective 2.

Objective 1 of the study: Brief Description of Training Workshops on PBL for Tutor

The Description of Training Workshops is briefly described in methodology section.

Objective 2 of the study: Assessment of the feedback of faculty members

Out 55 participants of four training workshops, 46 provided feedback. The response rate was 83.6%.

The findings are described in four sub-headings according to parts of questionnaire.

Part A. Demographic information

The age of the tutors was 42.12 ± 11.93 years (range 28-64 years); 19 were males and 2 females. Nine faculty members were lecturers having MBBS degree and 46 were assistant, associate and full professors. The year of their graduation was between 1980-2018, while post-graduation 1996-2019. Only eleven participants received PBL related short training before while 31 faculty received at least one short training related to medical education such as Supervisor Training, Evaluation Training, Modular System Curriculum Training, Development of MCQs Training, Research Methodology Training, Communication Skills Training, Leadership Skills Training, Teaching Skills Training.

Part B. Overall feedback on training workshop

The participant tutors rated “Training Workshop on PBL for Tutors” on scale of 1-10 (1=poor, 10= excellent); the rating was notable. (Table II)

Table 2: The rating of the Participant Tutors on “Training Workshop on PBL for Tutors”

S. No	Item	Rating (Mean \pm SD)
1a.	Usefulness (Scale 1-10)	8.11 \pm 1.43
1b.	Content (Scale 1-10)	7.74 \pm 1.60
1c.	Relevance of session & content (Scale 1-10)	8.13 \pm 1.31
1d.	Facilitation (Scale 1-10)	8.52 \pm 1.49
1e.	Overall (Scale 1-10)	8.23 \pm 1.31

Part C. Feedback of Tutors on specific sessions

The rating of the participant tutors on specific sessions conducted in “Training Workshop on PBL for Tutors” was remarkable. (Table III)

Table 3: Rating of the Participant Tutors on Specific Session of "Training Workshop on PBL for Tutors"

S. No	Item	Rating (Mean±SD)
2	Rate session on "PBL Process" conducted in workshop on Likert scale 1-4?	3.15±0.56
3	Rate session on "Role of Tutor" conducted in workshop on Likert scale 1-4?	3.24±0.64
4	Rate session on "Designing problem package for PBL" conducted in workshop on Likert scale 1-4?	3.33±0.56
5	Rate session on "Conducting PBL Tutorial" conducted in workshop on Likert scale 1-4?	3.22±0.63

1=not important; 2=slightly important;
3=moderately important; 4=extremely important,

Part D. Feedback for the improvement

a. The strengths/good points of workshop shared by the participants

- Training workshop was very interactive, well arranged and managed
- It fostered better understanding of PBL, improved skills in PBL, made to know "how to make PBL package such as activity of creating scenario, sorting triggers, identifying ques, developing learning needs and learning objectives, provided new ideas and new concept, about teaching learning and elucidated about the role of tutor as a facilitator.
- Presentation was good and delivered within time and group work sessions were very interesting.
- Resource person and facilitator were experienced, humble, clarified queries, made to learn step by step and booted confidence in participants.

b. Suggestions provided by the participants

- More emphasis may be on designing the problem-based scenarios.
- These and other types of training workshops in medical education should be conducted regularly.
- More time may be allocated for practice session and group work.
- Hours of training workshop may be increased.
- Resource person may not repeat the slides in presentations.
- Handouts may be provided to participants.
- Role of tutor may be explained little bit in detail.

c. Additional Comments of the participants

- Overall good experience of workshop for better-

ment of our departments

- Description needs to be explained through videos rather than lectures
- Training Workshop should be of 2 days

Comparison of rating of Male and Female groups of participants on training workshop

No significant difference was observed in overall rating (Table IV) and rating specific sessions (Table V) of "Training Workshop on PBL for Tutors" between male & female groups of participants.

Table 4: Comparison of rating of the male and female group of participants on "Training Workshop on PBL for Tutors"

S. No	Item	Rating		p-value
		Mean±SD	Mean±SD	
		Male	Female	
1a.	Usefulness (Scale 1-10)	8.11±1.37	8.11±1.50	0.99
1b.	Content (Scale 1-10)	7.68±1.42	7.78±1.74	0.84
1c.	Relevance of session & content (Scale 1-10)	8.26± 1.45	8.07± 1.27	0.65
1d.	Facilitation (Scale 1-10)	8.58± 1.43	8.48± 1.55	0.83
1e.	Overall (Scale 1-10)	8.18± 1.25	8.26± 1.38	0.85

Table 5: Comparison of rating specific sessions conducted in "Training Workshop on PBL for Tutors" by male & female groups of participants

S. No	Item	Rating		p-value
		Mean±SD	Mean±SD	
		Male	Female	
2	Rate session on "PBL Process" conducted in workshop on Likert scale 1-4?	3.16±0.50	3.15±0.60	0.95
3	Rate session on "Role of Tutor" conducted in workshop on Likert scale 1-4?	3.21±0.54	3.26±0.71	0.79
4	Rate session on "Designing problem package for PBL" conducted in workshop on Likert scale 1-4?	3.37±0.50	3.30±0.61	0.66
5	Rate session on "Conducting PBL Tutorial" conducted in workshop on Likert scale 1-4?	3.26±0.56	3.19±0.68	0.67

4=extremely important, 3=moderately important,
2=slightly important, 1=not important

Discussion

For the effective implementation of PBL, faculty development is critical step. Training workshops for tutor enhances knowledge about PBL, foster understanding the tasks within PBL process, nurture developing PBL package and improve core facilitation skills required for interactive learning, self-directed learning and group learning during PBL tutorial process. The training workshop varies in duration from one day minimum of 5 hours to three days.^{5,13,15,16}

We conducted four Training Workshops on PBL for Tutors; each workshop was of five hours duration covered essential elements of PBL required for the teacher to become PBL Tutor or Facilitators. Summary description of Training Workshops is given in methodology section. The participants recognized the importance of training workshops.

The tutor training courses for PBL Tutors assessed at the end of the course either orally or both orally and by an anonymous questionnaire at schools of the different universities.⁵

We took the feedback from the participant faculty members (PBL Tutors) of "Training Workshops on PBL for Tutors" "on semi structured valid questionnaire and assessed at Kirkpatrick Model of Evaluation level 1 (Reaction) and 2 a (Perception on Learning).¹¹⁻¹⁴

The participants' rating on training workshops was noticeable with respect to usefulness, content, relevance, facilitation and overall process of training workshops. Their rating on specific sessions "PBL Process", "Role of Tutor", "Designing problem package for PBL" "Conducting PBL Tutorial". conducted in workshop were also remarkable. There was no significant difference observed in ratings of the male and female groups of participants.

Participants shared that training workshops fostered better understanding of PBL, improved skills in PBL, made to know "how to make PBL package such as activity of creating scenario, sorting triggers, identifying ques, developing learning needs and learning objectives, provided new ideas and new concept about teaching learning and elucidated about the role of tutor as a facilitator. Resource person and facilitator were experienced, humble, clarified queries, made to learn step by step and booted confidence in participants. They suggested "more emphasis may be on designing the problem-based scenarios", "more time may be allocated for practice session and group work", "duration of training workshop may be increased", "role of tutor may be explained little bit more, and other types of training

workshops in medical education should be conducted regularly.

Majority of the tutor of the training workshop for PBL Class Tutor at The Faculty of Medicine, Suez Canal University reported that organization of workshop was excellent; overall, they were satisfied from the training workshop; their understanding of PBL, tutorial group dynamics and assessment of PBL improved and they better understood the role of tutor.¹³ The participants of PBL courses for tutors in PBL at four Swedish Universities mentioned that all four courses prepare them for the tutor role and they suggested to organize programs for continued educational support for them.⁵ The findings of three studies conducted in Nepal with regard to the tutors training for implementation of PBL in 2010 at BP Koirala Institute of Health Sciences Dharan, in 2015 Patan Academy of Health Sciences Lal tpur and in 2019 in Universal College of Medical Sciences Bhairahawa are consistent with the findings of this study.^{11,17,18} Training workshops in PBL conducted in Medical Colleges in Pakistan Foundation University Medical College (FUMC), Islamabad positively influenced the faculty members regarding understanding of PBL and participant faculty members recognized the role of tutor as a facilitator.¹⁶

Conclusion

The significance of faculty development trainings is recognized by the participant tutors as faculty development training programs provide exposure to the latest educational innovations in health professions education. The findings of this study indicate positive reaction and perception of the participants on Training workshops on PBL for Tutor. They recognized the importance of training workshops and its' worth in conduct in PBL. The tutors acknowledged their role in implementation of PBL process. This will facilitate smooth implementation of PBL.

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Conflict of Interest	None
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