ORIGINAL ARTICLE

'Problem Based Learning' as a Novel mode of Information Transfer for Faculty Development in Pakistan: A Phenomenological Study

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ABSTRACT

Objective: To explore faculty experiences about 'problem based learning' used as a faculty development approach in understanding and applying the core concepts & issues in health professions education through their views and opinions.
Study Design: It was a qualitative phenomenological study.
Place and Duration of Study: The study was conducted at Islamic International Medical College, Rawalpindi, Pakistan. Data was collected in 2006, 2010 and 2013 respectively with three batches of M. Phil basic medical sciences students and data analysis done in 2013. Hence, total duration of study is three and half years.
Material and Methods: The selected study subjects were 16 faculty members (medical & dental) from three batches of M.Phil basic medical sciences course who participated in a Post Graduate Certificate Course in Medical Education. In this study, semi structured interviews were conducted and interview notes were taken, in order to explore the faculty experiences about the 'problem based learning' used as a mode of information transfer and faculty development approach. The data verbatim transcribed through interview notes, coded and thematic analysis was done manually.
Results: Results were in the form of description of faculty' lived experiences with the PBL. Findings indicated that faculty perceived problem based learning' as a very useful learning tool.
Conclusion: This study indicated that a well-constructed PBL case scenario, based on common and real teaching problems in medical education can have a substantial effect on enhancing the performance of faculty/medical teacher's performance that helps in better 'learning transfer' of teaching skill.

Key words: *Faculty Development, Problem Based Learning, Phenomenological Study.*

Introduction

Due to the ongoing globalization and internationalization in medical education, non-western countries have undertaken a pedagogical reform, by adopting new educational strategies and modes of information transfer being popular. This includes: problem-based learning, case base learning, team based learning and time efficient precepting.[1,2]Their introduction and teaching requires faculty (medical & dental teacher's) shift of role from information provider to a 'facilitator' or a 'tutor'. During problem based or case based learning sessions they need to be trained in this specific new areas of teaching skills in order to expand pedagogical understanding about their new roles in teaching and learning process.[3]Hence, faculty development is one of the essential and most important component health professions education that needs to be critically thought out for its need analysis, planning, execution with maintenance of quality assurance & evaluation of faculty at their respective workplace institutes.[3,4] Faculty development is one of the mechanism for improving the teaching competencies of faculty (medical & dental teacher's) in order to adapt the modern medical education reforms.[5,6] Up till now, diverse and various approaches of faculty development are being used by the institutions to train their faculty in order to demonstrate various competencies and roles i.e. a teacher, curriculum planner & evaluator, educational, administrator and scholar at all level of the educational continuum i.e. at micro, meso and macro levels.[7,8]It is imperative to create an environment and approach that helps faculty to see their everyday experiences as 'learning experiences' and encourage to reflect with their colleagues/peers and students on learning experiences. This is based on principles of adult learning, those which have occurred in classroom or clinical setting through formal or informal approaches to promote the 'learning transfer' of teaching skill and knowledge.[8] These approaches of faculty development need to be examined and explored out for its effects on 'learning transfer' of 'teaching skills' from individual experiences to group learning and through our research work we are aiming to achieve this. It is the

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Received: April 27, 2015; Accepted: June 11, 2015

quality of staff which forms, the most important determinant of success criteria.[9,10,11]The challenge is to deepen and enhance their cognition about an educational experience through adapting innovative faculty development approaches, which helps in learning 'transfer of skill' at workplace i.e. classroom or clinical setting. In this study we have used 'PBL' as a faculty development approach as a modern teaching & learning strategy by exploring our research question i.e.how do faculty learn and apply the core concepts in health professions education through a teaching learning approach i.e. PBL? It was a qualitative study based on 'phenomenological design', used to explore how faculty experienced the 'problem based learning' as a novel strategy to teach them about its core concepts & issues in health professions education.[12,13]We feel that, PBL is underdeveloped in Pakistan in terms of its utility at our medical and dental academics, therefore its importance and need becomesevident.[14]The main theoretical conceptual framework of our research study is embedded and based on 'theories of social learning'-constructivist socio cultural theory-Marxist i.e. it applies by using Problem based learning approach for faculty development. This theory supports the significance of social involvement of learner in the learning process, so is this problem based learning process, through which we are training our faculty to learn.[14]

Materials and Methods

It was a qualitative, phenomenological study. The study was conducted at Islamic International Medical College, Rawalpindi, Pakistan. Data was collected in 2006, 2010 and 2013 respectively with three batches of M. Phil basic medical sciences students and data analysis done in 2013. Hence, total duration of study is three and half years. The selected study subjects were 16 faculty members (medical & dental) from three batches of M. Phil basic medical sciences course who participated in a Post Graduate Certificate Course in Medical Education in 2006, 2010 and 2012 respectively and it was a 2 credit hour, one semester long course. These faculty members were from different disciplines of basic medical sciences i.e. Anatomy, Physiology, Biochemistry, Pharmacology and dentistry. The inclusion criterion was the post graduate students of M.Phil program and the exclusion criteria the students who absent on the day of PBL session. In this study, semi structured interviews were conducted and interview notes were taken, in order to explore the faculty experiences about the 'problem based learning' used as a mode of information transfer and faculty development strategy. The faculty consent was taken for the interviews and study and there was no conflict of interest raised. Faculties were asked about their experiences and reflections with 'problem based learning' used to train them in core concepts of health professions education and facilitation/tutoring skills. Faculty which we want to train was of micro (teaching the students) and meso (coordinating the courses) organizational levels of performance and teaching domains. They are involved in the development of courses and their execution, coaching of students & assessment, according to the teaching competencies.[9] The competency which we want to enhance was 'facilitation /tutoring skills' via problem based learning at 'shows how' and 'does' level. We have selected the phenomenological research approach because; we want to explore the quintessence of a social phenomenon from the perspective of faculty who has experienced it. In phenomenological research we put aside the researcher's own perspectives in order to understand the existing experiences of the respondents/ participants.[13] The data was analyzed qualitatively using psychological phenomenology. The interviews are guided by the predetermined set of open ended questions- a semi structured interview script (attached in annexure 1). The data verbatim transcribed through interview notes, open coding was done manually, results in thematic analysis. While doing the open coding, the collected data was divided into segments and these were scrutinized for commonalities that helped in reflecting the categories or themes. While doing this process they are examined for properties/ specific attributes of each category. We examined and identified the meaning of the data by asking questions, making comparisons and looking for similarities and differences between their comments. In this way, similar comments about the phenomena are grouped together to form categories. Hence, open coding helped us in reducing the data to a small set of themes that seem to describe the phenomenon that was under

investigation. Finally conclusions were drawn based on the connections about its meaning personally and theoretically. The data was validated through member checking by involving two other medical faculty members well versed and trained in PBL for analysis.

Results

Results were in the form of description of the faculty' lived experiences with the 'Problem based Learning'. Following Themes were identified;

S.no	Faculty Responses to Questions-Themes
1.	PBL acts as a trigger to explore 'real problems' in medical education through 'discussion with the peers'-P2P.
2.	PBL results in learning through 'construction of knowledge'.
3.	Faculty learned the'facilitation skills' by observing, role playing and role modelling during the session.
4.	Reflection and self-assessment helps the learners/faculty in self- regulating their own learning process.
5.	The factors that helps in 'learning transfer' of a teaching skills during the training are; • well-constructed PBL cases, • facilitator's style, enthusiasm • quality of training, • learner's motivation, • relevant learning resources • ample self-study time.
6.	PBL helps in acquiring and improving the following skills: • communication, • critical thinking, • problem solving, • presentation, • self-reflection, • team based learning • Feedback skills.
7.	By working on real problems in teaching and learning, faculty understands the concepts of health professions education in a better way, instead of reading from books.
8.	Sharing of' learning experience' of community of training with community at workplace, helps in building a bigger community.
9.	Faculty development training must be supported and encouraged by the leadership/heads of the departments to transfer this skill at respective workplaces.

Above findings indicate that, faculty responded to the PBL as a very useful learning tool to understand its process and outcomes. The answer to our research question, 'How do faculty learn and apply the core concepts in Health Professions Education' is evident in the results that they learn different skills through' construction of knowledge', by observing others, role playing and role modeling. Moreover, they experienced that they not only understand the core concepts in health professions education by solving the 'real teaching problem scenario' but they also understand the PBL process and facilitation skill as well and acquired peer feedback and reflection skills.

Discussion

In answering and discussing the different questions the faculty responses were collected and summaries with identification of themes/ main points as under; Question # 1: Could you talk and share about your experience of learning core concepts of health professions education through problem based learning? Most of the faculty members find it as a very useful tool to understand the core concepts and issues of health professions education by using real medical education problems as triggers[15] and then exploring themselves during the discussion with their peers. One of the faculty member responded that;' hmm well, usually we were getting trained through the 'workshops' comprised of lectures followed by some activity but learning core concepts of health professions education by involving myself in problem based learning really helped me enhancing my knowledge, skill and attitude in health professions education through interaction with my peers." Question # 2: 'How did you learn during the process of problem based learning? Please relate with your example'. Faculty members responded to this question that they learn during the problem based learning from each other i.e. the peers, self-direction, by identifying their prior knowledge and

building new knowledge based on their existing one and constructs their meanings, through reflection and constructive feedback of the facilitators and peers. Question # 3: What is your understanding about the factors which helps in 'transfer' of teaching skill during the workshop? In response to this question faculty members expressed that, the powerful factor are: well-constructed PBL case, facilitator style & training, students training, relevant learning resources, self-study time during the two sessions of problem based learning sessions. Student's motivation towards subject and process, facilitator's enthusiasm, constructive feedback and attitude of facilitator are also very crucial. Question # 4: What do you think in your understanding are the skills gained through problem based learning? Could you explain through examples? The faculty response to this question yielded that they acquire better communications skills, critical thinking, problem solving, and self-reflection along with feedback skills. Moreover, they also learn that, PBL enhances 'facilitation skills' by observing the role play and role modeling of facilitator during the sessions. Question # 5: Could you reflect on strengths and weaknesses of the 'problem based learning' approach to train you? The strengths identified by the faculty responses were mostly the skills they gained during the sessions. As far as the weaknesses are concerned they didn't point out any particular one but taking care of the factors identified in question (#3) / three are important to prevent its effects on learning and student's motivation. Question # 6: How does this approach helps in 'transfer of skills' learned at your workplace? Faculty members responded to this question as that; by applying the real life problems in teaching and learning they can understand the concepts better, instead of only reading from books. By sharing the learning experience from community of training to community of workplace, helps in transfer of skill i.e. by building the community of practice.3They further explains that these training must be supported and encourage by the leadership/heads of the departments to transfer this skills at workplace.

Conclusion

This phenomenological study indicated that a well-constructed PBL case /scenario based on common and real teaching problems, can have substantial effect on faculty(medical and dental teachers) performance that helps in better 'learning transfer' of teaching skill. Furthermore, it is recommended that, regular faculty development programs must be started to attain its desired results, as the need of the hour to promote medical and dental education throughout Pakistan.

Annexure 1

Interview Script	
Research Question: How do faculty learn and apply the core concepts in health professions education through a teaching learning approach i.e. Problem Based Learning?	
	Questions
1.	Could you talk about your experience of learning core concepts of health professions education through problem based learning?
2.	How did you learn during the process of problem based learning? Please relate with your example
3.	What, in your understanding are the important factors during your training through problem based learning helps in 'learning transfer' of skills?
4.	What do you think in your understanding are the skills gained through problem based learning? Could you explain through examples?
5.	Could you reflect on strengths and weaknesses of the 'problem based learning' approach to train you?
6.	How this approach does helps in transfer of skills learned at your workplace?

Annexure 2

PBL Case

Title: First day in the clinical clerkship; Amina's worries……..

Trigger # 1:

Amina- a 3rd year medical student enters the dining hall and approaches her friend Rabia, enjoying her lunch.

"You look distressed", asks Rabia. "Yes, I am!" Amina replies. "What happened, hope everything is okay?" enquires Rabia.

Amina responds, "It was our first day in the ward (surgical clinical clerkship) and I was really excited that finally I would able to see patients and shall be given an opportunity to interact with them".

"Well, the same is true for our group and trust me; we really enjoyed our first formal clinical exposure, didn't you? Asks Rabia.

"No, we had a very discouraging experience," says Amina.

Why, what happened? Rabia enquires.

"Well, there was a patient with a history of weight loss, increased appetite, heat intolerance, sweating, diarrhea and he also appeared very anxious", Tells Amina.

The teacher from surgery department was taking our clinical session asked me to relate these symptoms with the physiology of thyroid gland but I was unable to recall anything, which I remembered so well just before the exam.

As a result, he scolded me in front of everyone!" replies Amina. "In addition, he also said that my outstanding result in the first professional did not reflect my true ability because I had forgotten all information so soon!" Amina adds angrily.

My God, This is so bad! Rabia exclaimed. "Thank God we were saved as we also encountered a similar situation in the surgical unit but thankfully I remembered both relevant physiology and the applied anatomy to answer a similar question!" Says Rabia.

Trigger 2

Next day Amina was sitting alone in her room and was reflecting on the experience; she was enquiring in her mind that why she forget the information and was unable to relate the basic science knowledge with the clinical sciences?

Was there any problem in the teaching of basic sciences by the teachers? But Rabia performed well, why???

Or was there any problem in her (Amina) learning strategies? And how can she improve her memory to perform better in the future?

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