

Pre And Post PBL Meetings In Ensuring The Quality Of Facilitators In Problem Based Learning

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Background: Problem based learning (PBL) is a student - centered curriculum delivery tool believed to promote active student participation. Though the PBL is student - centered, the facilitator plays an important role in maintaining the integrity of this system by providing balance in group interaction and discussion of learning issues. In International Medical University (IMU) one of the strategies to ensure the quality of the facilitators was the pre and post PBL meetings. This study aimed to gauge its usefulness in ensuring the quality of PBL facilitation.

Method: The questionnaire to study the perceptions of PBL facilitators on the pre and post PBL meetings included close ended questions on pre and post PBL meeting's attendance and their scored opinion in improving PBL facilitation skills, open ended questions inviting suggestions to improve these meetings and PBL facilitation in IMU as a whole and self-evaluation as an effective PBL facilitator using a six point Likert scale to a list of statements.

Results: 84.2% of facilitators agreed the meetings were beneficial. Self-evaluation of their facilitator effectiveness showed on average ratings of seven out of ten indicating strong confidence in facilitating skills. Suggestions ensuring facilitator quality included content expert briefing in pre PBL meetings and student appraisals of facilitators given weightage in staff appraisal.

Conclusion: Pre and post PBL meetings enhanced facilitator comfort with the triggers, adding to their confidence and provided a venue to obtain feedback on the triggers.

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Key words: Problem based learning, PBL facilitator, Pre and post PBL meeting

Introduction

Problem based learning (PBL) is a student - centered

curriculum delivery tool. It is believed to promote active student participation giving rise to self-directed learners with group interaction and reasoning skills. The key players in a PBL are the student, the facilitator and the PBL trigger; an ecosystem in itself.

The PBL trigger is a clinical scenario that incorporates the various disciplines of basic sciences, community medicine, ethics, behavioral sciences and evidence based medicine. Each PBL trigger involves two sessions. The first session called PBL 1 introduces the trigger for the students to brainstorm and come up with the learning issues to research. During the second session which is PBL 2 the students come together to discuss the result of their research on the learning issues stipulated earlier. Both these sessions are facilitated by a PBL facilitator. Though the PBL sessions are student - centered, the quality of the facilitator also determines the successful dynamics of the PBL group. Gijsselaers and Schmidt showed that "facilitator function, through influence on student interest and motivation has a direct causal effect on group function and an indirect effect on student achievement".¹ As PBL facilitators are an important component of the PBL process, it is necessary to have ongoing mechanisms to constantly enhance and validate the quality of the facilitators.

A number of strategies were implemented to ensure the quality of PBL facilitators in IMU. They are as follows:

1. PBL facilitator training workshops
2. Shadowing the experienced PBL facilitators during their sessions
3. Facilitator evaluation by students
4. Pre and post PBL meetings

PBL facilitator training workshops for the new facilitators are held twice a year to introduce the PBL philosophy and process, PBL facilitation skills, assessment and feedback systems. These workshops are built to be interactive and hands on. Theoretical introduction on PBL is followed by a video recording of a previous PBL session in progress. The new facilitators

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are given hands on experience by taking part in a mock PBL session. Prior to facilitating their own sessions, the new facilitators are scheduled to observe at least one PBL session conducted by the senior facilitators. There is a continuous evaluation of facilitators by the students through the facilitator evaluation feedback forms. This allows for reflection and improvement of the facilitators. Some of the important areas covered in the students' feedback form include whether the facilitator maintained good group dynamics, asked questions that stimulated discussion and was not giving a mini lecture. The evaluation form is a questionnaire using a six point Likert scale and free form commentary.

Pre and post PBL facilitator meetings are held at the beginning and the end of a system course. These informal meetings are generally chaired by the concerned system's course coordinator and the facilitators go through each trigger. The content of each trigger is discussed and facilitators with prior experience have the opportunity to give feedback and share their experience regarding the trigger.

The PBL facilitator training workshops, facilitator evaluation by the students and shadowing the experienced facilitator are quality assurance tools that have been in place for many years. The pre and post PBL meeting is a recent strategy that has not been verified regarding its benefits to the facilitators. Therefore this study aimed to gauge its usefulness for the facilitators in ensuring the quality of their facilitation.

Methods

A descriptive prospective study was conducted amongst the PBL facilitators in the reproductive system course in semester four of the medical programme. These facilitators were chosen as the particular system course coincided with the timing of the research. There were 28 facilitators, a mix of both seasoned and new facilitators. A pre tested questionnaire (see Appendix I) was distributed to these PBL facilitators. The questionnaire was a study on the perception of

PBL facilitators on improving PBL facilitation skills. There were three parts to the questionnaire. The first part included close ended questions on their pre and post PBL meeting's attendance and its value in improving PBL facilitation skills. The second part was open ended questions inviting suggestions to improve these meetings and PBL facilitation in IMU as a whole. The third part of the questionnaire involved self-evaluation as an effective PBL facilitator using a six point Likert scale (strongly disagree, disagree, somewhat disagree, somewhat agree, agree, strongly agree) to a list of statements. This part was a modification from the students' facilitator evaluation form. In addition, the facilitators had to rate themselves on their overall performance in facilitating using a scale of 1 – 10 (1 = very ineffective, 10 = very effective). It was not mandatory for the facilitators to identify themselves and a week's duration was given to complete and return the questionnaires.

Results

The total number of questionnaires given out was 28 and the response rate 84.6%. The returned questionnaires all had completed first and second parts. The results showed that the percentage amongst the responders who attended the pre and post PBL meetings was 72.7%. Amongst those who attended, 84.2% of the concerned facilitators found these meetings useful.

As shown in Table I, which tabulates the self-evaluation of the different skills in PBL facilitation, the first statement had a response rate of 99.9%. On further studying the results in this section, there were differing response rates to each question as some facilitators omitted answering some statements. There was no definite pattern seen in this omission. The response rates for the individual statements are laid out in Table I. The question on whether they ensured good interaction among the group members drew the highest response rate of 99.9% where 86.9% agreed to this while 13% partially agreed. The lowest response rate of 8.6% was for the statement on whether they asked questions to stimulate the PBL discussion and the next lowest

response of 13% was for the statement on whether the group adhered to the PBL rules. In both these statements the responses were 'partially agreed'.

In their self-evaluation of their overall facilitation skills, based on a scale of 1 to 10 (1 = very ineffective, 10 = very effective), 90% of the facilitators gave themselves a score of seven and above (Table II) which indicates a high level of confidence and comfort level in their ability to facilitate a PBL.

Table III shows the suggestions from the facilitators to improve PBLs in IMU. Their suggestions were divided into three main areas. The first area is on improvement of the efficacy of the pre and post PBL meetings. They suggested that the meetings be made mandatory by tabling it into the timetable and to include the content expert as well as a senior student representative to get the users' perspective.

Secondly, to improve PBL facilitation as a whole in IMU, the suggestions were to include more hands on training during the PBL workshop and include a live demonstration of a PBL session during the facilitator training workshop. They felt that new facilitators should be allowed to tag the experienced facilitators for more than one session to gain more confidence in their facilitation skills. They also suggested that the PBL facilitator training workshop be conducted separately for new facilitators and "seasoned" facilitators to cater for the different levels of expertise. The facilitators felt that the students' appraisal of the facilitator should be given weightage in the staff appraisal. This they felt would emphasize the importance of PBL in curriculum delivery and therefore give importance to being an effective PBL facilitator. This will encourage the facilitators to put more effort in improving and reflecting on their facilitation skills.

The suggestions put forth to improve PBL trigger were that PBL triggers should be vetted by a panel familiar with the PBL philosophy and process before use and that each PBL trigger contain no more than 6-8 learning issues.

Discussion

In IMU, our facilitators for PBLs in the medical programme are a mixed company. There are clinicians, psychologists and scientists from the biological sciences. A facilitator guide is provided to help the facilitators with the trigger. Here the learning issues and outcomes of that particular trigger are identified. The guide includes explanation of the learning issues to guide the facilitators during the PBL.

With the advent of the pre-PBL meeting prior to the start of the PBLs for a particular system, there is the opportunity for the facilitators to convene and familiarize themselves with the trigger.

The systems course coordinator walks the facilitators through the trigger and facilitator guide. These meetings provide a venue for discussion of the trigger amongst the concerned facilitators.

It is a time for sharing questions and thoughts on the triggers. Facilitators who have already facilitated the triggers previously share their experience of the learning issues and thought processes the students had in a particular trigger. This input gives greater depth to the facilitator's understanding of student's issues and thoughts. This knowledge can be applied in guiding the students better in identifying the learning issues as students may not be able to correctly identify the important learning issues or go overboard with a particular issue. Dolmans reported that groups without facilitators tend to identify about 60% of the teacher's intended goals.² A facilitator who is comfortable with the trigger and secure in the expected knowledge will generally be more involved as he/she in turn does not fear ridicule from the students for not knowing anything about the trigger. An interested and involved facilitator creates an atmosphere of comfort and freedom to express and discuss which helps in learning as shown in Covey, who suggested that "stimulating, encouraging and creating and maintaining a warm, safe atmosphere in which individuals will be willing to share experiences and ideas without fear of being ridiculed, because trust

is the key ingredient to develop.³ Trust is nurtured by such an environment". Students who do not anticipate ridicule and feel free to explore and make mistakes will learn and retain the subject matter better.

During these meetings the PBL process is also revisited to reinforce it amongst the facilitators. It is usually stressed again that PBL is primarily student-centred and therefore student driven. Importance on maintaining the group dynamics and self-reflection is emphasized as they are an integral part of developing professionalism and active learning. Self-reflection on what they have learnt during the PBL and more importantly the life skills that they learn during the proper practice of group dynamics will propel them on the path of independent self-learning and modification of life skills and learning practices.

The post-PBL meetings are useful post mortem sessions to clarify and further improve the triggers. These discussions provide an opportunity to obtain feedback on the clarity and suitability of the triggers from facilitators using them and this information is subsequently used to improve on the trigger. A clear and well thought out trigger initiates good discussion which eases facilitation. Due to the involvement of multi-disciplinary facilitators, the trigger can be tweaked to be as holistic as possible. These meetings create an oasis of time for faculty integration, continued learning and sharing.

The PBL process uses skills involving problem solving, critical thinking, group dynamics, communication and listening skills which encourage lifelong learning. Facilitating this interactive process requires a different set of skills and mindset compared to lecturing. LuAnn Wilkerson⁴ identified seven important facilitation skills as listed below:-

1. Provides frequent feedback.
2. Questions and probes your reasoning process.
3. Encourages critical appraisal of information.
4. Helps students to balance basic science and clinical applications in problem discussion.

5. Encourages student direction of the tutorials
6. Facilitates and supports good interpersonal relationships in the group.
7. Promotes synthesis of multidisciplinary perspectives

During the PBL facilitator meetings and the evolving discussion amongst the facilitators, some of the skills listed above such as probing the reasoning process, encouraging critical appraisal of information, facilitating and supporting good interpersonal relationships in the group and promoting synthesis of multidisciplinary perspectives are very much in use as these meetings mimic the PBLs that are to be facilitated to a large extent. As the process of the PBL is revisited again in these meetings, the other facilitation skills such as providing frequent feedback and encouraging student direction of the tutorials is reemphasized.

The results showed that 84.2% of the concerned facilitators who attended the meetings felt that they were useful. They had a platform for discussion and sharing the past experiences of those who had previously used the trigger. The explanation by the content expert improved their understanding of the trigger and its learning issues, thereby increasing their confidence and ease to function as facilitators and Gijsselaers and Schmidt shows that "facilitator function, through influence on student interest and motivation has a direct causal effect on group function and an indirect effect on student achievement".¹

In their self-evaluation of their overall facilitation skills, 90% of the facilitators rated themselves seven and above which indicates a high confidence and comfort level in their ability to facilitate a PBL. On the contrary when asked to self-evaluate themselves on the different facilitation skills, the response rates to the different facilitation skills varied due to omissions in numbers self-evaluating that particular skill. This suggests that on closer scrutiny and self-reflection, there are areas that our facilitators are unable to evaluate themselves clearly.

As the results state, the two lowest response rates of 8.6% and 13% respectively were for the facilitation skills on asking questions to stimulate the PBL discussion and on whether the group adhered to the PBL rules. The singular response to these questions was ‘partially agree’ which is a cause for concern as our facilitators seem to be vacillating on two important facilitation skills. The only two facilitation skills on self-evaluation that had more than 50% response rate were the skills on ensuring that there was good interaction among the group members (99.9%) and normally ending PBL on time (52%). The rest of the skills had a response rate of less than 40%. This infers that our facilitators appear to be less confident in the finer skills of facilitation and is a matter that should be addressed in the PBL facilitator training workshops and reinforced in the pre and post PBL meetings.

Conclusion

This study showed that the pre and post PBL meetings had a role in ensuring the quality of our PBL facilitators.

They did enhance facilitator comfort and knowledge with the triggers and were productive in improving the triggers. The study also captured that there is a need to assist our facilitators to be more confident about the finer facilitation skills to ensure that PBL as a curriculum delivery tool is an effective one. The drawbacks of the study is that only one third of the faculty were involved as we used only those involved in the reproductive system which was at that point of time running. This study was also useful as feedback was obtained from the facilitators on ideas to improve the PBL system in IMU.

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Table I:-

A. Facilitation skills.

Please evaluate yourself as a facilitator by placing a tick (✓) in the appropriate box using the Likert scale below.

- 1. Strongly disagree
- 2. Disagree
- 3. Somewhat disagree
- 4. Somewhat agree
- 5. Agree
- 6. Strongly agree

| Required skill of facilitation | % of facilitators that answered the question | % of facilitators | | | | | |
|--|--|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|
| | | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 | <input type="checkbox"/> 6 |
| 1. Ensured that there was good interaction among the group members | 99.9 | | | | 13.0 | 65.2 | 21.7 |
| 2. Intervened where appropriate | 34.6 | | | 4.3 | 8.6 | | 21.7 |
| 3. Did not give mini lectures during PBL | 17.3 | | 4.3 | | 13.0 | | |
| 4. Encouraged all group members to participate | 21.7 | | | 4.3 | 17.4 | | |

| Required skill of facilitation | % of facilitators that answered the question | % of facilitators | | | | | |
|--|--|-------------------|-----|-----|------|-----|------|
| | | □ 1 | □ 2 | □ 3 | □ 4 | □ 5 | □ 6 |
| 5. Asked questions that stimulated discussion | 8.6 | | | | 8.6 | | |
| 6. Normally ends PBL on time | 52.0 | | 4.3 | 4.3 | 21.7 | | 21.7 |
| 7. Ensured that the PBL ground rules were adhered to | 13.0 | | | | 13.0 | | |

Table II:-

B. Overall self-rating score.

On a scale of 1 to 10, how do you rate yourself as a facilitator? (1 = very ineffective, 10 = very effective)

Rating score were as below:-

| Rating score of 1-10 (1 = very ineffective, 10 = very effective) | Percentage of facilitators % |
|---|---------------------------------|
| 5 | 5 |
| 6 | 5 |
| 7 | 30 |
| 7.5 | 10 |
| 8 | 45 |
| 8.5 | 5 |

Table III:-

| Suggestions from the PBL facilitators | |
|---------------------------------------|---|
| 1 | To improve efficacy of pre and post PBL meetings a. meetings be made mandatory – to table in the timetable b. meetings to include the content expert c. inclusion of a student representative to get the students' perspective |
| 2 | To improve PBL facilitation in IMU a. more hands on training during the PBL workshop b. separate training for new and experienced facilitators c. new facilitators be allowed to tag the experienced facilitators for more than one session d. students' appraisal of the facilitator should be given weight in staff appraisal |
| 3 | To improve PBL trigger a. PBL triggers should be vetted by the PBL working group before use b. each PBL trigger to contain no more than 6-8 learning issues |

Appendix I:- Perceptions of PBL Facilitators on improving PBL facilitation skills

1. Feedback on pre and post PBL meetings

a. Did you attend any pre and/or post PBL meetings?

Yes No *If No, please proceed to question 2.*

b. Do you think the pre and post PBL meetings have prepared you better for PBL sessions?

Yes No

c. What are your suggestions to improve the pre and post PBL meetings?

.....

2. What are your suggestions to improve PBL facilitation in IMU?

.....

3. Self-evaluation as a facilitator

Please evaluate yourself as a facilitator by placing a tick (✓) in the appropriate box using the Likert scale below.

1 2 3 4 5 6

| | | | | | |
|-------------------|----------|-------------------|----------------|-------|----------------|
| Strongly Disagree | Disagree | Somewhat Disagree | Somewhat Agree | Agree | Strongly Agree |
|-------------------|----------|-------------------|----------------|-------|----------------|

| | | | | | | |
|---|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|
| 1. Ensured that there was good interaction among the group members. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 | <input type="checkbox"/> 6 |
| 2. Intervened where appropriate. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 | <input type="checkbox"/> 6 |
| 3. Did not give mini lectures during PBL. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 | <input type="checkbox"/> 6 |
| 4. Encouraged all group members to participate. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 | <input type="checkbox"/> 6 |
| 5. Asked questions that stimulated discussion. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 | <input type="checkbox"/> 6 |
| 6. Normally ends PBL on time. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 | <input type="checkbox"/> 6 |
| 7. Ensured that the PBL ground rules were adhered to. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 | <input type="checkbox"/> 6 |

On a scale of 1 to 10, how do you rate yourself as a facilitator?
 Rating = _____ (1 = very ineffective, 10 = very effective)