Original article

A Comparative Assessment of Problem Based Learning (PBL) verses Traditional Learning Method (TLM) from Medical Student’s Perspective of Rural Medical College, Loni

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Abstract:

Objectives: To evaluate and compare the medical student’s perception for Problem Based Method (PBL) & Traditional Learning Method (TLM) and to find out which method would be beneficial.

Methods: A cross sectional comparative study was conducted among 100 students (Male- 69, Female-31) of II MBBS of Rural Medical College, Loni. Students were undergoing both learning methods simultaneously. Duration of study was one year (August 2011- July-2012). Data was collected by means of structured questionnaire.

Results: According to 60% students, TLM was very good method to understand the topic. According to 31% students PBL was excellent method to gather the knowledge, while 49% students said PBL was very good method regarding its suitability. It was observed that 48% students PBL helped them in building up communication skills, interpersonal relationship and problem solving capacity to very good extent. While scores for creativity and interesting were almost same for both methods. According to 35% there was excellent chance for self development in PBL.

Conclusion: PBL must go parallel with Traditional Learning for better analytical approach and clarification of concepts among medical students. A combination of both the conventional and newer curricula provides the most effective training for undergraduate medical students.

Key words: Problem based learning, Learning assessment, Traditional learning method

Introduction:

Problem Based Learning (PBL) was started in 1969 by Barrows and Tamblyn at McMaster University, Canada for undergraduate medical students. Later the system was adopted by Europe, USA and rest of the world. A study carried out among 1st year medical students at Nelson Mandela school of Medicine showed that majority of the students benefited from input of other students in PBL tutorials as they were conducted in small groups. Contrary to this study, a study from Kuwait University revealed that introduction of new teaching methodologies may evoke certain factors that lead students to develop adverse perception of their educational environment. Another study showed that knowledge and power of interpretation was quite improved among students on reaching the 3rd year but their interest in the process of PBL conduction was lost and they developed shortcuts to solve the problem. It has been reported that instead of didactic communication in lecture hall, active participation of students in PBL had a bigger role to play in continuing medical education. Rural Medical college, Loni, is a pioneer in the country to introduce PBL in undergraduate medical programme. The PBL curriculum is being developed and implemented under guidance and collaboration of faculty of health sciences,
Linkopian University, Sweden. Hence the present study was planned to compare the perception of II\textsuperscript{nd} year MBBS students regarding the two teaching methodologies of Traditional Learning Method (TLM) and PBL in Rural Medical College, Loni, Maharashtra, India, as students of RMC learning by both the methods.

**Objectives:**
1. To evaluate and compare the medical student’s perception for PBL & TLM
2. To evaluate which method would be beneficial

**Material and Methods:**
A cross sectional comparative study was conducted among 100 students (Male - 69, Female-31) of II MBBS of Rural Medical College, Loni, Maharashtra, India. Students were undergoing both learning methods simultaneously. Duration of study was one year (i.e. August 2011- July 2012). In this study traditional learning method (TLM) was a teaching methodology characterized by delivery of lectures i.e. knowledge is imparted by teachers whereas in PBL, problem based scenarios were given to the students instead of delivering lectures and students were supposed to solve those problems by themselves step by step such as interpretation of scenario, brainstorming of scenario, systematization of the outcome of knowledge, defining problem/s area in given scenario, formulation of learning needs, collect the knowledge in relation to the learning needs (from books, journals, internet), use of newly acquired information & knowledge, application of the consideration & elucidation to the situation presented in the scenario and the role of teacher (Tutor) is to co-ordinate the PBL session.

Data was collected in the form of feedback by means asking students to write the score (1=Poor, 2=Good, 3=Very Good, 4=Excellent) for each quality of both methods according to their own experience of learning. The following qualities of both teaching methodology were assessed by students by providing structured questionnaire, consisting following points such as Understanding of topic; Gathering or acquisition of knowledge; Chances given to improve communication skill; Opportunities to clear the doubts; Suitability; Creativity; Interesting; Chance to self development; Students were also asked to answer the following questions; Which method was time consuming?; Which method requires more efforts to learn the subject or topic?; Which method was enough to learn the topic or subject?

Results were analyzed in the form of percentage and proportions whenever appropriate.
Results:

Out of 100 students, 69 students were male and 31 students were female.

Table 1: Percentage feedback of both learning methods

<table>
<thead>
<tr>
<th>Qualities assessed</th>
<th>Traditional Learning Methods (TLM)</th>
<th>Problem Base Learning (BPL)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Good (%)</td>
<td>Very Good (%)</td>
</tr>
<tr>
<td>Understanding of topic</td>
<td>10</td>
<td>60</td>
</tr>
<tr>
<td>Gathering or acquisition of knowledge</td>
<td>22</td>
<td>51</td>
</tr>
<tr>
<td>Suitability</td>
<td>14</td>
<td>48</td>
</tr>
<tr>
<td>Chances given to improve communication skill</td>
<td>35</td>
<td>33</td>
</tr>
<tr>
<td>Opportunities to clear the doubts</td>
<td>19</td>
<td>41</td>
</tr>
<tr>
<td>Creativity</td>
<td>30</td>
<td>48</td>
</tr>
<tr>
<td>Interesting</td>
<td>22</td>
<td>44</td>
</tr>
<tr>
<td>Chance to self development</td>
<td>27</td>
<td>44</td>
</tr>
</tbody>
</table>

As shown in table no.-1, according to 60% students, TLM was very good method to understand the topic. According to 31% students, PBL was excellent method to gather the knowledge, while 49% students said PBL was very good method regarding its suitability. It was observed that, 48% students PBL helped them in building up communication skills, interpersonal relationship and problem solving capacity to very good extent. According to 46% students, there was very good opportunities to clear the doubts in PBL. While scores for creativity and interesting were almost same for both methods. According to 35% there was excellent chance for self development in PBL. None of the student has given zero (poor) score to any of the quality for both methodologies. According to 29% students PBL was time consuming method and needs lots of efforts. According 33% students TLM is enough method to learn the subject, but 64% students have experienced that both methods were helpful should occur simultaneously. While, according 3% students PBL was enough method to lean the topic and there was no need of lecture based teaching.

Discussion:

In present study, majority of the students (64%) were in the favor of both PBL parallel with TLM. Some of them are easily understood by self learning while comprehension of some topics needs the help of tutor for better understanding. A study
on teaching methods in Shifa College of Medicine showed that 67% of the students wanted Lecture Based Learning and PBL going on side by side. A cross-sectional study by Habib F et al showed that 79% of the medical students liked PBL sessions and it was observed that PBL helped them in building up communication skills. In 1899, Sir William Osler realized that the complexity of the medicine had already progressed beyond the ability of teachers to teach everything that student to need to know. In 1932, the Commission on Medical Education of the Association of American Colleges stated that medical education should develop sound habits as well as methods of independent study and thought, which will equip the students to continue their self education through life. Maximum students in the present study expressed that PBL leads to better understanding of subject and invokes self learning habit among students. Probably this was due to the fact that PBL scenarios in RMC are designed by the trained faculty members of the college who have full command on their respective subjects/topics. This methodology not only helps the students to understand the subject in depth but the process of PBL conductance also inculcates self learning practice among students as they have to formulate their learning objectives themselves after receiving PBL scenarios, solve the problem themselves by means of internet, consulting various books etc. and actively participate in group discussions. Rural Medical College, Loni, has a well established library that is equipped with all the latest editions of books, journals and availability of internet facilities which help students to gather the information about medical science during PBL sessions. A similar study by Alam AY et al also concluded that PBL along with Lecture Based Learning will promote independent and creative learning among medical students. In this study students claimed that tutor were well trained for conducting PBL sessions. Facilitators committed for PBL sessions have undergone through various workshops to polish their skills for PBL facilitation and educational experts from Likopian University regularly visit the institute to conduct workshops. Moreover, facilitators in PBL are not supposed to teach the students. Rather they have just to observe their performance and check them from deviation of their right track. An international study to assess the role of facilitators in PBL tutorials showed that facilitators must regularly review PBL tutorial processes and group dynamics with in tutorial settings. Students agreed that subjects’ integration helped in the clarification of concepts in medical studies. Likewise, another study revealed that integrated curriculum promoted better understanding of health sciences pertaining to common diseases and majority of the respondents (77.61%) expressed that PBL in modules assisted to great extent in interpreting the cases in their annual examinations.

**Conclusion:**
Both the teaching methodologies studied are indispensable for better understanding and more clarification of concepts pertaining to health sciences as both have their own deficient areas and together these methodologies synchronize each other. A combination of both the conventional and newer curricula provides the most effective training for undergraduate medical students.
References: