

## **Opinion of Medical Students regarding Problem Based Learning**

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### **Abstract**

**Objective:** To assess the process of problem-based learning (PBL) as perceived by the medical students and their opinions regarding the process.

**MethodS:** A cross-sectional study was conducted at Karachi Medical and Dental College. One hundred and four medical students of fourth year MBBS (52 each of batch 2004 and 2005) were selected for their responses and feedback on problem-based learning in small groups. Data was collected through a closed-ended questionnaire.

**Results:** Seventy nine percent (82 out of 104) of medical students liked the PBL sessions. Overall 85% of students were motivated towards self learning while liking for PBL was 82%. Activation of prior knowledge was observed by 83% students.

**Conclusion:** Students supported problem-based learning (PBL) as an effective method of learning. Majority of students were motivated towards self- learning. They were convinced that PBL helped them in building up communication skills, interpersonal relationship and problem solving capacity (JPMA 56:430;2006).

### **Introduction**

Problem based learning (PBL) has become an integral component of medical curricula around the world and partially experienced in Pakistan.<sup>1</sup> The students find problem based learning not only an interesting methodology but also as one that promotes problem-solving and communication skills. All these advantages also accrue from PBL as seen in many other studies.<sup>2</sup>

Since PBL learning styles are different from those of traditional, didactic, lecture-based courses, there is a need to take feedback from the students and to develop the tools for analysis and assessment of this strategy. Mc Gaghie defined feedback as "information that gives learners knowledge of the results of their study and clinical work".<sup>3</sup> Through feedback, individuals recognize areas of deficiency in their knowledge and skills and seek to rectify them. Studies have shown that feedback can improve performance in interviewing skills<sup>4</sup>, verbal and written histories<sup>5</sup>, technical skills<sup>6</sup>, resident's teaching ability<sup>7</sup> and physical examination skills.<sup>8</sup>

Assessing the performance of PBL group enables students to build their attitude towards self-criticism and group evaluation and that ultimately stay helpful for such self-directed lifelong learners in professional life. A multi-center study was carried out in Asian schools on PBL perceptions and it was analyzed that 90% of respondents were convinced to be motivated in self learning and 85% liked it regardless of intercultural differences.<sup>9</sup>

Medical students use PBL in each of the core

module of their respective professional training period, having an overall theme. Each PBL group comprises of 8-10 students supervised by a facilitator. The problems used by the students have been constructed to raise issues related to the core content of the curriculum, and provide a guide for defining their learning goals.<sup>10</sup>

The tutors assess the performance of the group and award marks to each group, which is based on an appraisal of the group's function according to four domains: commitment; interpersonal relationships; group interaction and problem-solving abilities.<sup>11</sup> It is of utmost importance to take the perceptions of both students and of faculty because the implementation of PBL approach in an institution depends upon strong support from the academic head, modification of students' behaviour and better score records.

The objectives of our study were to assess students' perceptions of the process of working in-groups while doing PBL and to assess their opinion regarding PBL design and its effect on their attitudes and interpersonal skills.

### **Subjects and Methods**

A cross-sectional study was conducted on 104 medical students of 4th year MBBS (Batches of 2004 and 2005) from Karachi Medical and Dental College during the year 2004 and 2005. Data was collected through a closed-ended questionnaire having two parts. In part 1, the students were asked to rate, a series of statements regarding assessment of the PBL process. In part two, 12 different

close-ended questions were asked regarding the opinion of the medical students on PBL.

Two batches of 2004 and 2005 of 4th year M.B.B.S. of Karachi Medical and Dental College were conveniently selected as participants of this study. Both of these batches were exposed to problem-based learning right from 1st year of their medical school.

The data was entered and analyzed on SPSS statistical package. Percentages and proportions were used to assess their opinions.

## Results

Out of total 104 students, 79% (82) liked PBL sessions. Out of PBL supporters, 74% (61 out of 82) were motivated for self-learning; 76% (62 out of 82) were stimulated to do research after undergoing PBL sessions; 77% (63 out of 82) felt that they could improve their communication skills while 78% (64 out of 82) students were able to identify gaps in their knowledge after attending PBL sessions

Overall motivation of the group was 83% while liking for PBL is 82% and activation of prior knowledge was observed by 83% students.

Eighty two percent (81 out of 104) responded that PBL helped in developing inter personal relationships or modified their attitudes while 86% were of the opinion that PBL helped them in improving their communication skills as shown in Table 1.

Table 1. Opinion of students regarding PBL (n=104).

Opinions	Responses	Batch 1(2004) n=52		Batch 2 (2005) n=52	
		Freq	%	Freq	%
		Motivated in self-learning	Yes	40	76.9
	No	12	23.1	7	13.4
Identified gaps in knowledge	Yes	41	78.8	42	80.8
	No	11	21.2	10	19.2
Improved problem-solving skills	Yes	45	86.5	38	73.1
	No	7	13.5	14	26.9
Stimulated in doing research	Yes	33	63.5	40	76.9
	No	19	36.5	12	23.1
Improving communication skills	Yes	43	82.7	46	88.5
	No	9	17.3	6	11.5
Helped in managing patients	Yes	36	69.2	30	57.7
	No	16	30.8	22	42.3
Activated prior knowledge	Yes	40	76.9	41	78.8
	No	12	23.1	11	21.2
Increased Confidence in discussing medical problems	Yes	38	73.1	44	84.6
	No	14	26.9	8	15.4
Liking for PBL	Yes	40	76.9	42	80.8
	No	12	23.1	10	19.2

Table 2. Rating of the assessment process of P.B.L. by the students (n=104).

Statements	Disagree		Neither		Agree		Strongly Agree	
	n	%	n	%	n	%	n	%
The group assessment mark should be used towards the semester examination marks (semester use).	52	50	6	5.8	29	27.9	20	19.2
The group assessment mark should be used for guiding the group and not towards the summative semester examination mark.	33	31.7	4	3.8	36	34.6	31	29.8
Awarding an individual mark to each student would be a fairer reflection of an individual's performance in the group.	21	20.2	4	3.8	37	35.6	42	40.4
The group should evaluate themselves against the objectives they set early rather than by the tutor.	51	49	10	9.6	33	31.7	10	9.6

The rating of the assessment process of PBL by the medical students revealed that 40.4% (42 out of 104) students agreed that awarding an individual mark to each student would be a good quality reflection of an individual's performance. Whereas 31.7% (33 out of 104) disagreed for including these PBL marks in semester and half of the students were of the opinion that the evaluation should ultimately be a job of the tutor and not of the students (Table 2).

## Discussion

In this study, group learning was strongly appreciated by most of the students. There have been various theories on group learning, which tend to emphasize either motivational or cognitive aspects of co-operative learning.<sup>12</sup> Motivational explanations focus on how individual goals are achieved indirectly via group's optimal operation. Other motivational theories centered the role of social relationships, conceptualizing that a collective team spirit encourages the members to care about the group.<sup>13</sup>

These motivational explanations of group learning are in parallel with the results of this study, where students emphasized the need for building up of interpersonal relationships that facilitate the group's working. Dolmans et al, obtained similar results in the study.<sup>4</sup> Though our students supported group learning but were not comfortable with peer evaluation and preferred individual marking. Overall, the PBL liking is not significantly different but our students are less motivated towards self-learning as compared to that of other Asian schools. This suggests that more practice of PBL process and perhaps profound training of the tutors are required to activate self-learning

good group in terms of how they interacted with each other and how they discussed and worked through the problems. We felt that our students understood the role played by PBL process of collaborative work in small groups with relation to the development of a learning culture, which encouraged both teamwork and self-directed learning. Students felt that group relationship was the biggest motivator in their PBL group work.

The students agreed that group working motivated them to learn and assessment played no role. A study done in Dow Medical College also revealed that students found problem based learning significantly better ( $p < 0.05$ ) than conventional learning in promoting community awareness, group interaction, motivation in self study and clinical relevance while 69% of the students liked problem based learning more than conventional lecture based learning ( $p = 0.001$ ).<sup>14</sup>

The internal motivator demonstrated that the students knew the educational goals of the curriculum such as the importance of being self-directed in their learning. Self-assessment skills are crucial for the development of lifelong learning habits.<sup>15</sup>

Previous studies have shown that students had a positive attitude towards PBL<sup>16</sup> and the same was proved by this study.

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