

## Perception of 4<sup>th</sup> year Medical students about Problem Based Learning

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### ABSTRACT

**Objective:** To describe perception of 4<sup>th</sup> year medical students about comparison of problem based learning with traditional method of teaching.

**Methodology:** The study was conducted on March 2006 at college of medicine in Al Ahsa, King Faisal University (KFU). Students filled a self administered structured questionnaire containing 13 items, on a five point Likert scale where five equaled PBL generally better and one equaled traditional generally better.

**Results:** Fifty two (52) out of 54 students submitted their forms as two students were absent on the day of survey. Majority of the students rated PBL better than traditional method in all 13 aspects. Improvement in team work, ability to communicate, ease of remembering a topic, interest- enthusiasm and self directed life long learning were outcomes with highest perceived benefit of PBL compared to traditional method.

**Conclusion:** PBL was perceived as better learning method, especially in enhancing team work and communication skills.

**KEY WORDS:** Problem based learning, Student perception, Undergraduate teaching.

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### INTRODUCTION

College of Medicine in Al Ahsa at King Faisal University (KFU), Kingdom of Saudi Arabia (KSA), was founded in 2002. The undergraduate medical curriculum comprises of six years of education. In first year the courses focus on premedical subjects (physics, chemistry, biology, English etc). Subsequent two years comprise of basic medical science (anatomy, physiology, pathology, pharmacology, biochemistry, behavioral sciences etc). Fourth year is the transitional year from basic medical sciences to clinical medicine. The last two years are clinical years with clerkships in different specialties. The clinical transition (4<sup>th</sup> year) is facilitated by an interim period of learning in simulated environment. This includes learning basic clinical methods in skill laboratory and problem based small group discussion for integrated health science module.

Selection of teaching mode (traditional lectures, Problem Based Learning etc) in a curriculum is based on defined learning outcome. A teaching mode can

be used as a mainstay for entire curriculum or for delivery of individual courses.<sup>1</sup> PBL encourages development of the problem-solving abilities of the students. PBL approach motivates the students to actively control the direction of their learning needs and encourage them to acquire self-learning skills and also improves their clinical skills.<sup>2</sup> PBL is more effective than traditional lectures in development of generic skills and attitudes such as communication skills, team work and independent learning. However, there is no significant difference in acquisition of knowledge.<sup>3</sup> Therefore, traditional lectures with PBL in a curriculum will be more effective than without it in achieving generic skills and attitudes mentioned above.<sup>1</sup> Traditional lectures are the major mode of teaching in the college of medicine in Al Ahsa. Integrated health science module is the only course in which students learn by a problem based approach.

In PBL a small group (8-10) of student is provided with a case scenario (problem). They read and discuss the terms in first session named Introduction. During discussion existing knowledge is used and learning objectives (LOs) are identified. In second session called mid session, the LOs are modified and important learning resources are shared. In the third, Debriefing session, students discuss each LO in details. Any point requiring elaboration is put forward in final Wrap up session. The wrap up session is conducted in large class format by a subject matter

expert. This study intended to describe the perception of fourth year medical students about PBL after participating in a six weeks course of integrated health science.

## METHODOLOGY

A cross sectional descriptive study was conducted in college of Medicine, KFU Al Ahsa, KSA. The study subjects were 4<sup>th</sup> year under-graduate medical students attending PBL sessions as part of integrated health sciences course.

A self administered structured questionnaire was designed in English for students' perception. A total of 13 questions focused on comparison of PBL with traditional method of teaching. The questionnaire was distributed and collected at the start and end of the debriefing session respectively, in 6<sup>th</sup> week of Integrated Health science course. A written informed consent was signed by participants of the study. Students recorded their responses on a five point Likert scale where five equaled PBL generally better and one equaled traditional generally better. The responses were analyzed using SPSS version 12. Basic descriptive statistics are presented on each of the 13 items of the questionnaire.

## RESULTS

A total of 54 fourth year male undergraduate students participated in PBL sessions. Fifty two students submitted their forms as two students were

Table-I: Students' perception of PBL compared to traditional mode of teaching.

	<i>Traditional generally better</i>	<i>Traditional slightly better</i>	<i>Both the same</i>	<i>PBL slightly better</i>	<i>PBL generally better</i>
	N (%)				
1. Your interest and enthusiasm in learning.	1 (1.9)	0 (0)	2 (3.8)	15 (28.8)	34 (65.4)
2. Knowledge of basic sciences. <sup>1</sup>	6 (11.5)	7 (13.5)	6 (11.5)	15 (28.8)	17 (32.7)
3. Efficiency of learning.	2 (3.8)	1 (1.9)	4 (7.7)	23 (44.2)	22 (42.3)
4. Identification of your learning needs.	5 (9.6)	3 (5.8)	8 (15.4)	20 (38.5)	16 (30.8)
5. Fulfilling your learning needs.	1 (1.9)	2 (3.8)	8 (15.4)	24 (46.2)	17 (32.7)
6. Encourages self directed life long learning.	1 (1.9)	0 (0)	6 (11.5)	14 (26.9)	31 (59.6)
7. Your reasoning ability. <sup>2</sup>	0 (0)	1 (1.9)	7 (13.5)	23 (44.2)	19 (36.5)
8. Improves ability to communicate with your colleague and faculty.	1 (1.9)	0 (0)	3 (5.8)	10 (19.2)	38 (73.1)
9. Improves your ability to work in a team. <sup>+</sup>	1 (1.9)	0 (0)	0 (0)	6 (11.5)	43 (82.7)
10. Makes it easier to remember a topic.	1 (1.9)	1 (1.9)	1 (1.9)	14 (26.9)	35 (67.3)
11. Preparation for professional life. <sup>*</sup>	0 (0)	2 (3.8)	4 (7.7)	19 (36.5)	26 (50.0)
12. Your personal satisfaction. <sup>*</sup>	1 (1.9)	1 (1.9)	5 (9.6)	21 (40.4)	23 (44.2)
13. Overall value to you	0 (0)	2 (3.8)	4 (7.7)	20 (38.5)	26 (50.0)

absent on the day of survey. In all 13 items of questionnaire, majority of the students rated PBL better than traditional method (Table-I).

Students perceived that improvement in team work (Fig-1), ability to communicate, ease of remembering a topic, interest- enthusiasm (IE) and self directed life long learning were outcomes with highest benefit of PBL compared to traditional method (Fig-2).

The students' opinion varied most in response to questions regarding learning need and knowledge of basic science. Eight (15.4%) students rated PBL and traditional learning equally effective for identification (ID) and fulfillment of learning needs. Thirty six (49.3%) students favored PBL and eight (15.4%) favored traditional method for ID of learning. (Table-I).

### DISCUSSION

Majority of students clearly favored PBL over traditional method of learning. This is similar to perception reported in other studies. Nandi PL et al published review of PBL versus traditional method of learning, stating that students found learning to be "more stimulating and more humane" and "engaging yet difficult, and useful" in PBL, whereas "non-relevant, passive, and boring" in conventional curriculum.<sup>4</sup>

Al Damegh SA et al conducted a comparative study between PBL and traditional system of education at two campuses of King Saud University (Al-Qassem and Riyadh respectively). Majority (75%) of the students were satisfied with PBL system of

education. On the other hand only 20% students were satisfied with traditional system of education.<sup>5</sup>

Khoo HE et al reported lack of physical resources as one of the difficulties when PBL was first incorporated in National University of Singapore.<sup>6</sup> In our study students' responses for all 13 items of the questionnaire were in favor of PBL. One of the possible reasons is standards of physical resources provided during this course. The course was conducted in a well equipped new building with small number of student (total of 8-10 in each group). Each room had adequate space and comfortable seating arrangement with high speed internet access and multimedia projectors available for the students.

Students perceived that improvement in team work, ability to communicate, ease of remembering a topic, interest- enthusiasm and self directed life long learning were outcomes with highest benefit of PBL compared to traditional method. Similar perceived benefits have been reported from previous studies.<sup>7,8</sup>

In this study majority of the students perceived knowledge of basic science to be better in PBL. However, substantial number of students (n=13) favored traditional method for basic science knowledge (7 slightly; 6 generally). A study from Singapore reported tutors perception that students focused too much on clinical issues rather than basic sciences, as problem triggers in all cases were related to patients. In our college a group of PBL experienced clinicians designed problem cases that might have overlooked triggers for basic sciences. However all faculty attended tutors' workshop before participating in the course.

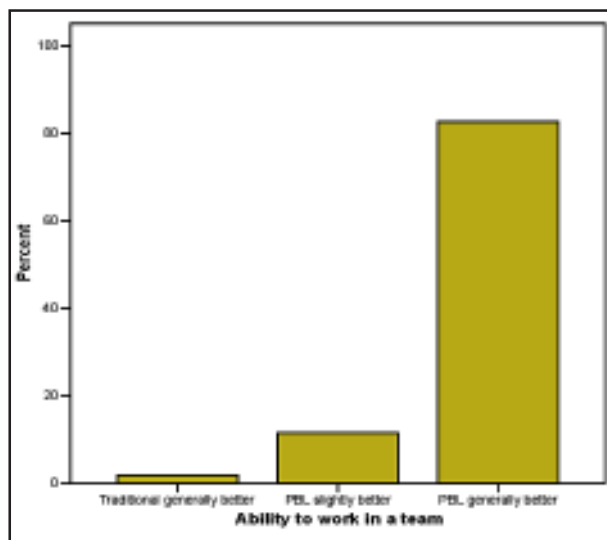


Fig-1: Bar chart showing perception of students about team work.

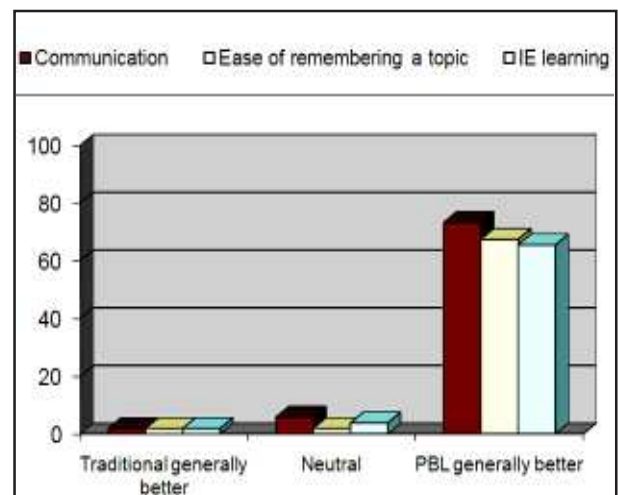


Fig-2: Students perception comparing PBL and traditional method

Prince KJ et al conducted a study to identify differences in perceived and actual levels of knowledge of anatomy between PBL and non-PBL students. The results of this study showed that PBL does not result in a lower level of knowledge than more traditional educational approaches.<sup>9</sup>

**Limitations:** Efforts were made to develop a questionnaire that was easy to understand and complete in a short amount of time. However this was not a standardized validated questionnaire. There was no comparison group.

### CONCLUSION

PBL was perceived as better learning method by medical students. It can specially enhance team work and communication skills. PBL can be extended as a mode of learning in other courses as well. Variation in student perception points towards areas of modifications in existing PBL process. Impact studies should be designed to check differences in actual and perceived benefits of PBL.

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