

Student perceptions of tutor skills in problem-based learning tutorials

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Objective The problem-based learning (PBL) tutor plays a role that is different from the role of a teacher in a conventional teaching format. In the Faculty of Medicine and Health Sciences, United Arab Emirates, all students are Arab nationals and tutors are expatriates with different sociocultural backgrounds from the students. This study was designed to investigate how students evaluate tutors in PBL tutorials and whether student evaluations of tutors change with the progress of students in PBL tutorials.

Methods Differences in tutor performance evaluation by male and female students were also analysed. The students evaluated 12 tutor skills in a scale of 1–3, 1 being ‘below average’ and 3, ‘outstanding’. Student responses from a total of 314 (98.1%) completed forms collected over 2 academic years were analysed statistically. A total of 14 tutors participated in the PBL programme.

Results The analysis revealed that tutors as a group were rated as having average to outstanding tutor skills

in 10 items of the evaluation form. Students and faculty perceptions were different for the tutor skills of guiding students for information management. The students expected more support from tutors, whereas the tutors tried to emphasize self-learning in the PBL curriculum. Lower scores to the tutors in the ‘problem’ bringing sociocultural and religious issues for discussion showed that a gap in sociocultural/religious understanding between students and tutors might influence tutor skills.

Conclusions Differences in tutor evaluation by male and female students indicate necessity of adopting different strategies by tutors in a different sociocultural background. The results of the study have direct implications for faculty development.

Keywords Education, medical/*methods/standards; *problem-based learning; students, medical; faculty/*standards; United Arab Emirates.

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Introduction

One of the main objectives of problem-based learning (PBL) is to help students to develop self-learning skills and to be able to learn on their own for the rest of their lives. In PBL students are put in an active learning situation by giving them clinical problems and training them to identify what they need to learn to solve those problems. They should be able to determine proper learning resources and subsequently apply what they

have learned to solve problems. The tutor’s role in PBL is to facilitate this process of active learning by students and foster the skills of critical thinking and habits of continued learning. Students who use PBL as a teaching/learning method for the first time need to be aware of the role of the tutor and not expect a situation where the tutor determines what should be learned, to what depth and in what sequence.

Student evaluation of teachers has been found to be useful for faculty development. Students’ needs and interests can be revealed and identified from the criteria they use to evaluate a teacher. For self-improvement and the benefit of students, teachers should know the criteria students use to identify effective teaching behaviours. Information on the characteristics of ideal teachers in settings other than clinical teaching has received relatively less attention in medical education.^{1,2} Characteristics that students would look for in

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Key learning points

For success of a PBL curriculum tutor development program is essential.

PBL tutors need to be aware of the sociocultural and religious backgrounds of the students.

The role of the students should be clear to them.

effective tutors in a PBL curriculum would be different as the tutor acts as a facilitator and not as a teacher. Desirable tutor skills from a faculty point of view have been described extensively.³⁻⁵ Tutors' expertise in subject matter has received considerable attention⁶⁻⁸ but there is a lack of study identifying characteristics of the effective PBL tutor.⁹ In one study students of Surgery Clerkship indicated two important skills which they would like PBL tutors to possess: (a) helping students identify important issues, and (b) providing feedback to students while encouraging feedback from the group.⁹

Background

The Faculty of Medicine and Health Sciences (FMHS), United Arab Emirates (UAE) University, UAE, follows an integrated curriculum with modules as functional units. In the Preparatory year, the first year of medical education and training, 140 hours are dedicated to the Introduction to Medicine Module. The module has been designed to provide students with insight into the health care system of the UAE and the sociocultural, psychological and environmental factors that affect health and disease prevention and health promotion. The main goals of the module are to impart knowledge by analysing medical problems, inculcate specific skills such as responsibility, the ability to process information, communicate and accomplish critical analysis and to increase student awareness of their own strengths and weaknesses. To implement the PBL programme in this module, carefully selected problems are presented to small groups of students. Each problem is associated with one theme. The PBL themes covered in this module are Health Care System (HCS), Alternative and Islamic Medicine (AIM), Family Study (FS), Infectious Diseases (ID) and Prevention and Promotion of Health (PPH). In planning the PBL programme for the module we were guided by the principles outlined by Barrows and Tamblyn.³

Each theme had 3 problems as triggers. One problem was discussed in each PBL, which lasted for approximately 2 hours. The students were divided into small

groups of 8–10 students for PBL tutorials. The students started tutorial sessions trying to clarify the meaning of any words, terms or concepts not understood on their first encounter with the problem. Next they raised a number of issues from the problem, which needed explanation, analysis and reasoning. A series of learning objectives was derived from the issues raised. At this stage critical assessment occurred and learning objectives were set into an order of priorities. The learning objectives provided the framework for seeking information. This could be sought from a variety of sources. The information gained by individual students was discussed in the tutorial group in a subsequent tutorial session.

At the end of each tutorial, time was set aside for the tutors to provide feedback to the students and vice versa. This was done informally to improve the performance of both students and tutors. At the end of each theme the tutors completed a student evaluation form, the marks of which were part of the continuous formative assessment programme. Each student was requested to complete a tutor evaluation form.

Tutor roles

In PBL tutorials one tutor worked with one group of students to facilitate the learning process. The tutors were familiar with the general and specific learning objectives of the programme. Initially the tutors took a more active role as students learned how to identify learning issues arising from the 'problems' and set goals and objectives. Gradually the students were expected to become proficient with little guidance needed. It was the role of the tutors to help students understand the objectives of each theme, identify learning resources and collect information using a variety of sources. They encouraged students to take an active and critical part in their learning. The tutors had to be aware of the learning needs of the students to stimulate learning and encourage the students' efforts and contributions. The tutors also familiarised students to the evaluation process which involved both self and tutor evaluation by the students.

Completing the tutor evaluation form was optional. The tutors were requested to go through the process of tutor evaluation for three reasons: (1) to train students to evaluate strengths and weaknesses of the tutors; (2) for self-improvement of the tutors and (3) to help in tutor development programme conducted by the Medical Education department.

The process of tutor evaluation by students has provided an opportunity to conduct a systematic study of student perceptions of the tutor skills in PBL

tutorials. To the best of our knowledge there has been no previous reporting of characteristics students value in PBL tutors in Arab countries. Student needs and their background, previous experiences and future outlook influence expectations related to teaching and learning. Medical schools in several parts of the world, including Arab countries, face an unusual educational challenge because of educational and cultural differences between predominantly expatriate tutors and local students.¹⁰ Experienced and effective tutors from a different cultural background may not prove as a good facilitator.

The aims of our study were:

- How did the students evaluate the tutors in the PBL tutorials?
- Do student evaluations of tutors' change with progress of students in PBL tutorials?
- Is there any difference in tutor performance evaluation between male and female students?
- Is there any difference in tutor skills among the tutors?

Methods

The study was conducted at the FMHS, UAE University, using a descriptive research approach. The study sample included 64 first year medical students in 2 consecutive academic years. The total numbers of students in 1997 were 27, and in 1998 were, 37 of which 17 (26%) were male and 47 (74%) were female. There were 3 female student groups and 1 male student group in each year. Each student group had 7–10 students. The groups remained the same throughout the academic year. During orientation to the PBL programme students were made familiar with the purpose and the process of tutor evaluation. The items in the tutor evaluation form were discussed with them.

A total of 14 faculty members from various departments participated in the PBL programme during the two academic years. Among the tutors 6 were from Family Medicine, 3 from Psychiatry, 2 from Medical Education and 1 each from the departments of Anaesthesia, Pharmacology and Physiology. These tutors volunteered to participate in the PBL programme. Among the 14, 8 tutors had previous experience of tutoring in PBL tutorials.

The tutors were rotated among the student groups at the end of each theme. Both male and female tutors facilitated male and female student groups. There was 1 tutor in most of the PBL groups. In few groups there were co-tutors. The co-tutor mostly joined the first tutor during the tutor-training period. When there were

two tutors students evaluated both the tutors individually. However, for this study we have excluded the tutor evaluation of the co-tutors.

Tutor training workshops were held before the PBL programme started and this was followed by more in house training sessions. Tutor meetings were held at the beginning and end of each theme to take necessary actions.

The data were collected using a Tutor Evaluation Form as the research instrument. The tutors distributed the tutor evaluation forms to the students of his/her own group and collected them. It was not necessary for students to identify themselves on the form. Students and tutors were encouraged to discuss any congruence between student evaluation of the tutors and tutor self-evaluation. The tutor evaluation was optional and tutors were free either to retain the completed forms or to forward them to the module co-ordinator. The module co-ordinator kept a record and used the information in tutor meetings and PBL workshops.

The tutor evaluation form

Adapting a tutor evaluation form previously used could have been helpful. However, the published tutor evaluation forms have been used in different settings to ours.^{9,11} It was difficult to transfer a tutor evaluation form directly from one cultural setting to another. Because of its suitability for our use, we designed a tutor evaluation form on the basis of the tutor characteristics considered essential for effective PBL tutoring by our faculty. Effective tutor skills were discussed in the PBL tutor training workshop before starting the PBL programme. Twelve tutor skills were identified which were suitable for our PBL process and for our students' requirements. Following a pilot study with 3 female and 3 male students of the second-year curriculum, and after consultation with the 4 faculty members, minor modifications were made to the original form.

There were 12 items in the form with ratings distributed as below average (1), average (2) and outstanding (3). An overall rating was asked for at the end of the form with similar rating scale. Each form also had space for comments. The items of the tutor performance evaluation form are reproduced in Table 1. Students were encouraged to make suggestions about tutor skills not included in the tutor evaluation form but which they considered important. They were also requested to give their views along with reasoning on the usefulness or otherwise of tutor evaluation in the PBL system, for which space was provided as 'comments' on the forms. The comments were collated to gauge the perceptions of

Table 1 Mean value of tutor-evaluation for each item over the five themes (1–5) in 1997 ($n = 182$) and 1998 ($n = 132$)

Tutor rating parameters	1997					1998				
	1	2	3	4	5	1	2	3	4	5
Clarified objectives	2.86	2.62	2.89	3.00	2.97	3.00	2.65	3.00	3.00	2.92
Guided students in meeting objectives	2.92	2.70	2.86	3.00	3.00	2.96	2.69	2.92	2.92	2.96
Guided students to identify learning issues	2.92	2.57	2.92	3.00	3.00	2.92	2.69	2.92	2.92	2.96
Stimulated students to participate actively	2.92	2.57	2.92	3.00	3.00	2.92	2.69	2.92	2.92	2.96
Guided about information resources	1.94	1.84	1.97	1.78	1.83	1.85	1.96	2.00	1.92	1.92
Facilitated collection of information	1.94	1.86	2.00	1.81	1.86	1.96	1.92	2.08	1.92	1.77
Stimulated evaluation of self, peers and tutors	2.86	2.86	2.91	2.94	2.97	2.92	2.73	3.00	2.92	2.96
Communicated clearly	2.92	2.78	2.92	3.00	3.00	2.88	2.62	2.92	2.92	2.96
Stimulated interest in learning	2.28	2.35	2.92	3.00	3.00	2.89	2.61	2.92	2.92	3.00
Was aware about learning needs of students	2.92	2.78	2.92	2.94	3.00	2.85	2.73	2.92	2.92	3.00
Encouraged students' efforts and contributions	2.92	2.84	2.92	3.00	3.00	2.89	2.61	2.92	2.93	3.00
Was enthusiastic about the role of tutor	2.92	2.70	2.91	2.94	3.00	2.85	2.50	2.92	2.92	2.96
Overall rating	2.92	2.67	2.78	2.76	2.80	2.89	2.50	2.92	2.92	2.96

1: Theme – HCS; 2: Theme – AIM; 3: Theme – FS; 4: Theme – ID; 5: Theme – PPH

Scale: 1 = Below average, 2 = Average, 3 = Outstanding.

the students. The organisers of the module met the students and tutors for feedback about the tutor evaluation process at the end of all the themes.

Statistical analysis

The data were coded and processed on an IBM compatible PC using the Statistical Packages for Social Sciences (SPSS).¹² Frequency distributions and one- and two-way tabulations were obtained. The data were analysed for associations between gender, academic year, themes and tutor rating. For quantitative analysis the means and standard deviations of rating parameters over five themes were calculated. Nonparametric tests (Kruskal–Wallis test and Mann–Whitney test) were used to compare student scores among themes. Differences in scores between males and females were analysed using ANOVA. Ninety-five percent confidence interval for means was used in reporting the data.

Results

The students completed a total of 314 (98.1%) tutor evaluation forms in the 2 years of sampling.

How did the students evaluate the tutors in the PBL tutorials?

Average ratings for the tutors, as a group for two years was towards outstanding (2.77–2.90) for all tutor skills except two. For the tutor skill 'guided about information resources' the mean rating was 1.87 in 1997

and 1.93 in 1998. Similarly the mean rating for the tutor skill 'facilitated collection of information' was 1.90 in 1997 and 1.93 in 1998. Mean rating in each individual year reflected similar trend as the average rating.

Do student evaluations of tutors' change with progress of students in PBL tutorials?

Scores were very high for 10 tutor skills in both the academic years from the first theme and remained high throughout (Table 1). Scores were low for all tutor skills for the theme AIM in both the years and the dip was statistically significant. As per the students' perception, tutor skills in guiding about information resources and facilitating collection of information did not improve over the time.

Is there any difference in tutor performance evaluation between male and female students?

Table 2 gives the respective mean tutor evaluation scores for the male and female students for each item. Female students gave higher scores for all tutor skills except for one. They also gave tutors an overall score which was much higher than the scores male students gave to the tutors.

Is there any difference in tutor skills among the tutors?

Among the 14 tutors statistically significant ($P < 0.001$) differences were recorded for every tutor skill except the skills of 'guiding about information

Table 2 A comparison of tutor evaluation between male and female students. Aggregate data for two years (1997 and 1998)

Tutor rating parameters	Male (<i>n</i> = 84) Mean ± SD	95% confidence interval	Female (<i>n</i> = 230) Mean ± SD	95% confidence interval
Clarified objectives	2.81 ± 0.40	2.72–2.89	2.91 ± 0.34	2.86–2.95
Guided students in meeting objectives	2.84 ± 0.38	2.77–2.92	2.91 ± 0.28	2.88–2.95
Guided students to identify learning issues	2.82 ± 0.38	2.74–2.91	2.90 ± 0.34	2.85–2.94
Stimulated students to participate actively	2.84 ± 0.36	2.77–2.92	2.91 ± 0.28	2.88–2.95
Guided about information resources	1.89 ± 0.44	1.80–1.99	1.90 ± 0.35	1.85–1.95
Facilitated collection of information	1.92 ± 0.39	1.83–2.00	1.91 ± 0.34	1.86–1.95
Stimulated evaluation of self, peers and tutors	2.88 ± 0.32	2.81–2.95	2.92 ± 0.28	2.88–2.95
Communicated clearly	2.81 ± 0.48	2.70–2.91	2.93 ± 0.25	2.89–2.96
Stimulated interest in learning	2.65 ± 0.61	2.52–2.79	2.82 ± 0.43	2.76–2.87
Was aware about learning needs of students	2.84 ± 0.39	2.76–2.93	2.91 ± 0.29	2.88–2.95
Encouraged students' efforts and contributions	2.83 ± 0.43	2.74–2.93	2.93 ± 0.25	2.80–3.32
Was enthusiastic about the role of tutor	2.77 ± 0.54	2.65–2.89	2.90 ± 0.29	2.87–2.94
Overall rating	2.69 ± 0.58	2.56–2.82	2.85 ± 0.35	2.80–2.90

Scale: 1 = Below average, 2 = Average, 3 = Outstanding.

resources' and 'facilitating information collection'. All tutors were rated between below average to average for these 2 tutor skills. One tutor was rated poorly in most of the tutor skills compared to all other tutors.

Student comments

Many students commented that they would prefer to remain with the same tutor throughout the year. At the same time they also commented about significant variation among tutors. The variations were primarily about clear communication. Some tutors spoke too much, even provided information. Students were worried about the content they had learnt. They felt there should be guidance and support for looking for information resources and collection of information. They find it difficult to know how deep they have to study a particular topic. Frequent comments were as follows:

- We are not sure whether we are learning the right information as the tutor did not tell us;
- We should get answers to all learning issues after we complete each theme;
- The tutor should provide handouts;
- We should get answers to all learning issues after we complete each theme.

Discussion

In this study we examined the student perceptions of an effective PBL tutor. It is important to note the limitations of the study before discussing the results. One of

the inherent limitations of educational research using a questionnaire is the influence of subjectivity. Efforts were made to make the language of the questionnaire as simple as possible and students were encouraged to clarify doubts. It is possible that presence of the tutor while students complete the questionnaire and evaluation of students by tutors would influence student behaviour, however when asked, students denied this. '*It does not matter,*' was the quick response from the students. The students were aware that student evaluations by tutors were used for formative purposes and the scores were not part of the summative assessment. In the FMHS approximately 90% of the faculty are expatriates and students are all UAE citizens. Students are aware of their status as they belong to the government that employs faculty and take the responsibility of evaluations objectively. Describing status of medical students of UAE, it has been said that students have no problem with giving low evaluations.¹³ Tutors evaluated highly by students are perceived as doing well. Another limitation of the study was the small number of students and tutors.

The tutor evaluation by students was adopted as part of PBL tutorial process in the PBL model of the FMHS. The student feedback was considered as an important exercise for improvement of tutor skills. The tutors had the choice to use the feedback for self-improvement without submitting the results to the module coordinator. However, all tutors returned the student evaluation forms to the module coordinator who compiled the results and presented important observations for discussion in tutor meetings.

The students viewed the PBL tutors as competent in metacognitive skills. Metacognitive skills of PBL tutors

are described as their ability of active, positive, conscious monitoring and direction of reasoning activities of students confronted with a problem.¹⁴ One tutor was ranked as inadequate by two groups of students. They commented that the tutor was very quiet and lacked enthusiasm. The tutor was given the student feedback and was encouraged to attend tutor meetings. Anecdotal evidence suggested that the tutor had a negative attitude towards PBL. There is a need for systematic follow up in dealing with tutor deficiencies as identified in tutor performance in PBL groups. In Maastricht University it is important, as student rating plays an important role in promotion and tenure.¹⁵ The same is not true in the FMHS.

Tutor skills of clear communication and awareness of the learning needs of the students had special implications in this study as student and faculty's backgrounds were different socioculturally. All students were Arabic and spoke English as a second language. Twelve out of 14 tutors were not Arabic speakers. Other than language differences, tutors had to be alert in discussing sensitive issues like drug and alcohol addiction, and sexual problems, which are often related to religion by the students. Tutors had to be equipped with knowledge about the students' lifestyles and their social and educational backgrounds, to allay any inhibitions about discussion of such sensitive medical issues.

The tutor scores for all skills were significantly lower in the AIM theme, compared to other themes. This theme dealt with issues related to the history of Islamic Medicine, Shariah law and alternative medicinal practices, which were woven into PBL triggers on 'abortion' and 'drug abuse'. From the perspectives of faculty members these subjects did not lend themselves to open and easy discussion with students. Most of the tutors were of their different cultural and educational background from the students. Cultural/religious experiences and expectations may have inhibited interaction among the students and between the students and tutors. Tutors' religious and cultural understanding and confidence to discuss these issues are necessary skills in a setting where students and faculty come from different social and religious backgrounds. Existence of a faculty-student gap in relation to cultural understanding has been described.¹³ Tutors' performance may depend on the 'problem' discussed in PBL. These are important issues for further research to improve teaching/learning in multicultural societies.

The students' dissatisfaction with tutors' effectiveness regarding two tutor skills related to information gathering reflects the students' expectations about guidance of the content that they need to learn. On the other hand tutors felt that students should be active

learners and not depend on tutors during information gathering. During tutor meetings the issue was discussed and in the second academic year emphasis was given on training information management techniques during student orientation of PBL. However, the students' attitude were the same. They wanted handouts or answers to questions from the tutors at the end of PBL. 'We are not sure if we are learning the right information' was the main worry of the students. They also had problems deciding the depth in which they needed to study. Students' inability to identify knowledge deficiencies can make them uncomfortable in a PBL curriculum.¹⁶

It is reported that tutors who were an expert on subject matter were more able to put into practice the full diversity of the tutor role in PBL.¹⁷ These tutors were identified as more able to provide support in process skills and also the subject matter content. This issue was discussed extensively during tutor meetings. Lack of motivation and lack of experience in taking responsibility for self-development were thought to be two major causes of student dissatisfaction. The students at FMHS enter medical school after completing secondary school education and one year of University education in mathematics, computers, English and Islamic studies. The teaching methods in most of the schools are didactic and instruction is in Arabic. Arab countries have been identified as collectivist, large power distance societies.¹⁸ Students in such societies expect to learn how to do instead of learning how to learn. They prefer teacher-centred education and expect teachers to outline paths for them to follow.

Lack of learning resources could be another factor for student dissatisfaction. The objectives of each PBL theme stressed the need for students to learn in the context of their community and country. The learning issues identified in most of the triggers had more emphasis on community, sociocultural and behavioural issues than on biological issues. Western literature addresses biological issues but is not very helpful in addressing community, sociocultural and behavioural issues. Most of the faculty members were not well versed with Arabic literature and were dependent on other resource. UAE, being a new country, does not yet have enough appropriate health related statistics and other community health related information. An observation unique to this study is the perceived gender difference in PBL tutor evaluation. Female students gave higher scores than the male students. In the study on group dynamics in PBL tutorials female students sought the facilitation of expert tutors, who would fill in knowledge gaps.¹⁹ Female students from the UAE have been described as more concerned than male students

about proving themselves academically.¹³ The tutors noted that male students adopted a self-confident approach and did not visit the tutors for consultation after tutorial sessions. Female students, on the other hand, sought out clarification and discussion. The literature argues that men and women do indeed have different approaches to evaluation.²⁰

In conclusion, our study identified pertinent issues to be addressed during PBL tutor training sessions. This is in keeping with the promotion of evidence based educational practices.

Contributors

MD designed the study, and lead the group in completing the study and writing the paper. DJSM implemented the PBL programme and the tutor training programme, designed the methodology, collected the data and contributed to writing the paper. MYH implemented the PBL programme, analysed the data and contributed to writing the paper. TSS implemented the PBL programme and tutor training programme and contributed to writing the paper.

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