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# CLASSROOM AUDIT: STUDENT SELF-PERFORMANCE, GROUP PERFORMANCE, AND TUTOR PERFORMANCE IN A PROBLEM-BASED LEARNING TUTORIAL

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**Abstract**
The educational industry has been the subject of a number of enquiries throughout this century. Although some changes have been made in medical education in recent years, many improvements are still needed. Problem-based learning (PBL) is one of the innovative changes that have been made in many universities all over the world; the Universiti Kebangsaan Malaysia (UKM) Medical Centre has also adopted it as one of its major teaching modalities. A fundamental aspect of the effectiveness of PBL is classroom interpersonal skills. To investigate these interpersonal skills in terms of self-, group, and tutor performance, a questionnaire survey was administered to a group of ten first semester medical students at UKM Medical Centre during mid-2009. In terms of self-performance in decision making, this study revealed that the students made decisions by consensus, while 80% of the students understood other team members and asked questions to clarify. Furthermore, 70% of the students were aware of differences in thinking styles, while 90% were patient listeners. In regard to group performance, 90% of the students felt the group was discussing knowledge, and 100% felt that the group was sharing knowledge. Regarding tutor performance, all students were of the opinion that the tutor established rapport, demonstrated the ground rules of PBL well, and created a non-threatening learning environment. The characteristics of interpersonal skills required in PBL were maintained in this classroom. However, many more students should be aware of the differences in thinking styles among themselves to avoid conflict, and the role of the tutor is very important in this regard. This study reflects the audit of a single PBL classroom. Further audits involving other classrooms are recommended in order to promote organisational performance.

**Keywords:** classroom audit, problem-based learning, Students' performance, tutor's performance

## INTRODUCTION

The educational industry, particularly the medical field, has been the subject of a number of enquiries throughout this century. Over the last three decades, while some changes have been witnessed in medical education (Engel, 1992; Richards & Fulop, 1987), many improvements are still needed (Barbero, 1995). Internationally, it is accepted that undergraduate medical education must adapt to the field's changing needs (Salam & Rabeya, 2010; Brown, 2008).

Problem-based learning (PBL) is one of the innovative changes that have been extensively adopted across various disciplines around the globe, including professional education (Hung, 2009). It is now widely accepted that PBL is one of the best methods of interactive learning (Salam, 2004; Smits et al., 2002). To provide students with maximum benefit from PBL, PBL tutors must play a collaborative-facilitative role that is different from the role of a tutor in a conventional teaching format (Charlin et al., 1998; Das et al., 2002). In the current teaching scenario, learning by tackling problems in PBL, one out of five tutors showed a deficiency in only one key aspect: they did not stimulate students towards active participation for learning. These rated as the least effective tutors (Dolmans et al., 2006). The facilitation of PBL demands a shift from teacher-centred to student-centred instruction (Nabishah et al., 2009). Changing roles from teaching to facilitating or tutoring can create discomfort and insecurity among PBL tutors (Nabishah et al., 2010; Mpofu et al., 1998). The challenges faced by tutors range from handling group dynamics to ensuring that learning outcomes are achieved (Nabishah et al., 2010; Azer, 2005). Tutors' skills in structural design of problems and problem facilitation are the key elements for an effective PBL curriculum (Salam et al., 2009). While medical professionals must undoubtedly be well equipped with medical science knowledge, they must also develop core holistic doctoring skills (Salam et al., 2010). Evidence-based studies show that doctors' interpersonal and communication skills have a significant impact on health (Salam, 2010) and learning outcomes.

Barrows and Tamblyn (1980) described PBL as a method of learning that results from the process of working towards understanding a problem. The problem is encountered first in the learning process and acts as a stimulus for the development of problem solving or reasoning skills, and for the search for information needed to understand the mechanisms responsible for the problem and how it might be solved.

The Universiti Kebangsaan Malaysia (UKM) Medical Centre has adopted PBL as one of its major teaching modalities. Central to the effectiveness of PBL is classroom interpersonal skills (Virtanen et al., 1999): the ability of students to work together and the ability of the tutor to nurture the students in order to solve problems. The most important interpersonal skills necessary for solving problems are consensual decision making, dialogue and discussion, teaming, and conflict management. Lack of these skills causes PBL outcomes to be compromised. The objective of this study was to investigate the students' perceptions of interpersonal skills used in PBL in terms of self-, group, and tutor performance in order to promote educational development.

## MATERIALS AND METHODS

A cross-sectional questionnaire survey about interpersonal skills was administered to a group of first semester medical students at UKM Medical Centre during July and August 2009. The group consisted of ten students. Data were collected by the tutor at the end of the last PBL session by administering a questionnaire about various aspects of interpersonal skills that were used in terms of self-performance, group performance, and tutor performance. The questionnaire was prepared based on extensive literature reviews and was validated by a group of first semester UKM medical students from the 2008 academic session. The attributes of self-performance used in the questionnaire were decision making by consensus, understanding team members, asking questions to clarify other points of view, knowing the differences of thinking styles among group members, and patiently listening to the discussion. The group performance attributes were active participation, focusing the discussion on making decisions about a problem, sharing knowledge in the discussion, and consensus on a decision to solve the problem. The attributes

of tutor performance were stimulation of students to address specific learning issues; assisting in distinguishing between major and minor issues; establishing rapport; demonstrating the ground rules of PBL; and the creation of a supportive, non-threatening learning environment. A 5-point Likert scale was used in the questionnaire for each of the attributes, ranging from 'strongly disagree' (SD) to 'strongly agree' (SA). The data were compiled and analysed using SPSS (version 15), and the results were presented as a number distribution.

## RESULTS

Table 1 shows the distribution of students' self-performance in PBL. Regarding consensual decision making, all ten students strongly pointed out that they made decisions by consensus, while eight understood what the other team members meant and eight team members asked questions to clarify. Seven out of ten students recognised the differences in thinking styles among students, while nine students were of the opinion that they were listening to the discussion with patience.

Table 1 Distribution of students' self-performance in PBL, n = 10

| Self-performance | SD | D | U | A | SA |
|---|---|---|---|---|---|
| I participated in decision making by consensus | - | - | - | - | 10 |
| I understood what other team members meant | - | 1 | 1 | 5 | 3 |
| I asked questions to clarify other points of view | - | - | 2 | 7 | 1 |
| I knew the differences in thinking styles among our group members | - | 1 | 2 | 4 | 3 |
| I listened to the discussion with patience | - | - | 1 | 7 | 2 |

Table 2 shows the distribution of group performance in PBL. In regard to group skills, eight students stated that they actively participated in the group discussion and that the discussion was focused on making decisions relevant to a problem. Nine students agreed that the group was carrying on a discussion. All ten agreed upon the decision made to solve the problem.

Table 2 Distribution of group performance in PBL

| Group performance | SD | D | U | A | SA |
|---|---|---|---|---|---|
| The group actively participated in the discussion | - | - | 2 | 6 | 2 |
| Discussion focused on making decisions about a problem | - | - | 2 | 6 | 2 |
| The group was holding a discussion | - | - | 1 | 5 | 4 |
| The group shared knowledge | - | - | - | 7 | 3 |
| The group agreed on a decision to solve the problem | - | - | - | 7 | 3 |

Table 3 shows the distribution of tutor performance in PBL. Nine students agreed that the tutor stimulated the generation of specific learning issues and eight pointed out that the tutor assisted the group in distinguishing major issues from the minor. All the ten students were of the opinion that the tutor established a rapport, demonstrated well the ground rules of PBL, and created a non-threatening environment that was supportive for learning.

Table 3 Distribution of tutor performance in PBL

| Tutor performance | SD | D | U | A | SA |
|---|---|---|---|---|---|
| The tutor stimulated the generation of specific learning issues for self-study | - | - | 1 | 5 | 4 |
| The tutor assisted in distinguishing between major and minor issues | - | - | 2 | 5 | 3 |
| The tutor established a rapport | - | - | - | 4 | 6 |
| The tutor demonstrated the ground rules of PBL | - | - | - | 3 | 7 |
| The tutor assisted in the creation of a non-threatening supportive learning environment | - | - | - | 8 | 2 |

## DISCUSSION

Consensual decision making is an important interpersonal skill, and one that is required to obtain maximum benefit from PBL. To reach a consensus, every participant in PBL has to understand the same meaning, both individually and in a group. In order to identify learning issues, the learners have to understand what other members of the team mean, and they have to ask and clarify other points of view, keeping the discussion relevant to the problem, and arrive at a consensus (Sheive and Metivier, 1994; Metivier, 1990). To achieve consensus, students should know the differences in thinking styles among group members; they should also be good listeners. This study reveals that 8-10 of the students possessed the interpersonal skills required for individual and group performance (Tables 1 and 2).

Different students have different thinking styles and cognitive strategies that determine how they gather information and utilise it to solve problems. Conflicts can arise due to differences in information-gathering skills among the learners. For example, while analysing information, a more insightful student is likely to consider several options simultaneously or jump from one step to another. On the other hand, an organised or methodological thinker is more likely to work through the steps systematically. If students are not aware of one another's style and method of data analysis, the methodological thinker may view the insightful thinker as inconsistent, while the insightful thinker may view the methodological thinker as slow.

Metivier (1990) indicated that many possible conflicts could be minimised when students are aware of the various cognitive styles of individuals in the group. The tutor's role is to clarify the different cognitive styles of the individuals. Seven out of the ten students in the present study recognised the differences in thinking styles among the group members (Table 1).

Hitchcock and Anderson (1997) and Spice and Keleman (1985) suggest that ground rules can prevent conflict. The establishment of ground rules of norms and behaviour by clear explanation and expectations at the beginning of PBL can act as a reference point for the process of diagnosis when problems do occur. It is also important for tutors to be competent in establishing a rapport before they can be expected to train students. All the respondents in the present study felt that the tutor established the ground rules of the PBL at the beginning and created a rapport that facilitated a non-threatening supportive learning environment (Table 3).

Webb (2009) identified several dimensions of the tutor's role in promoting useful group dialogue, including preparing students for collaborative work, forming groups, structuring group work, and influencing student interaction through tutors' conversations in small groups and with the class. An effective collaboration requires careful planning, coordination, and preparation of both students and facilitators (Salam et al., 2009; Soekartawi 2006).

The twenty-first century is a time of rapid development in science and technology, which enables people to continuously improve, to add to their knowledge and ability (Salam, 2010). All medical professionals need to develop general competencies such as management and organisation, teamwork, communication, and problem solving (Salam, 2009; Salam & Rabeya, 2004). Role modelling, especially by teachers, is vital in conveying professional values, attitudes, and behaviour towards tomorrows' doctors (Salam et al., 2010). Policy makers and curriculum planners should put significant effort into developing faculties' skills through adequate faculty development training programmes (Salam, 2010), with particular attention to problem development and problem facilitation for PBL.

## CONCLUSION

The interpersonal skills required in a PBL curriculum have been maintained in this classroom. However, all students should be aware of the differences in thinking styles among themselves. This will help them prevent further conflict; the tutor plays an important role in this regard. This study reflects the audit of a single PBL classroom with a group of students and one tutor. Further research involving the evaluation of several other classrooms is recommended to conduct need analysis and plan appropriate faculty development training programmes in order to improve organisational performance.

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