How well did I do? Students' Self-Evaluation in a Problem Based Learning Session

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ABSTRACT

Background: Problem Based Learning (PBL) is centered on real life problems, which are solved, by way of an inquiry process and brainstorming. Self-assessment is the judgment of the quality of one's own work, which helps the learner to develop understanding and judgment of the quality of the work they have done.
Aim: To identify if the students achieved their learning goals and initiated reasoning skills or not in a PBL session.
Methods: This is a cross-sectional research in which 60 BDS students were given a peer- reviewed questionnaire on "PBL Process Evaluation" developed by University of South California Dental PBL Program. The questionnaire had 6 items on likert scale and 2 open ended questions.
Results: Student evaluated their learning skills as good (52%), magnificent (30%), average (16%) and poor (2%). Their reasoning skills as magnificent (44%), good (32%), average (22%) and poor (2%). Students' reported they did a good job in, discussion (53%) and leadership (18%) and could do better in teamwork (36.5%), being confident & leadership (30%). This study investigated self-evaluation of students about their learning and reasoning skills in PBL tutorials. PBL enhances self-learning skills in which students are responsible for their own learning and are expected to initiate brainstorming and critically analyze information.
Conclusion: Students' self-evaluation score in this study for learning and reasoning skill suggests that PBL helps them achieving their learning goals, initiates and develops reasoning skills and brainstorming among the students
Keywords: Problem based learning, self assessment, brainstorming

INTRODUCTION

Across the globe various medical colleges have adapted the new problem based student centered curriculum[1]. This new educational strategy "Problem Based learning" has many benefits such as information retention along with problem solving and analytical skills[2,3].

According to Barrows[4], an "Authentic Problem-based learning session" focuses on the following learning objectives:

1. Acquirement of integrated information from different subjects in such a way that will help in retention and application of that knowledge to solve other problems and diagnosis of patient related issues.
2. Developing and improving skills required for improved teamwork and enhancing of self-directed learning among the students.
3. Development of inquisitiveness to become lifelong learners

PBL helps in overcoming the difficulties and restraints that were associated with traditional educational strategies. PBL is a an interesting and motivational methodology for learning as it involves students in solving the problems that they encounter in their existing situations, they also realize the importance of the knowledge required to resolve the existing issues[5].

The main aim of PBL is to demonstrate the subject significance by applying it in an appropriate real-world setting. Moreover, Problem-based learning helps in achieving the following learning goals and outcomes, such as, facilitation in developing knowledge, promotion of development of skills required for problem solving and development of self- directed learners.

Problem-based learning has been applied in various programs and is one of the education innovations in practice since 1960[6]. Learning in the PBL-based program offers students with the essential tools to become active problem solvers, and methods of student assessment should include means to measure this outcome. PBL learning process has three fundamental constituents that should be integrated in order to allow the development of an inquisition based environment, these components are, learner oriented environment, problems or triggers and small group discussion. The ability to appraise self-work is referred to as self-evaluation, which encompasses a sincere and honest verdict of the task that have been completed and attainment of skills that are required for the accomplishment of a particular work, it enmeshes reflection on action.

In self-evaluation process, the student provides answers to a list of questions that will help in evaluation his or her academic performance or skills. This self-assessment process helps in directing the focus to various aspects of his or her performance both in academics and clinical setting. The student is encouraged to consider all the aspects of his or her performance that are required to attain the objectives which will help him or her to excel in their respective fields. Moreover, this self-evaluation process motivates the students to communicate with their teachers, and also in help the students in reviewing their goals, assessing their progress as they move along the course and giving a considerate thought to areas in which they can excel[7].

The University College of Dentistry has adapted problem-based learning as an educational strategy in the integrated modular curriculum. This current research study aims to identify whether the PBL process helped the

students in achieving the learning objectives or not and whether it helped in initiating their reasoning skills or not.

METHODOLOGY

This is a cross-sectional research in which 60 BDS students were given a peer- reviewed questionnaire on "PBL Process Evaluation" developed by University of South California Dental PBL Program. The questionnaire had 6 items on likert scale and 2 open ended questions.

The dental program at The University College of Dentistry is a four years program, with first two years involving basic sciences and transition to clinical sciences from basic sciences. In the third year, the curriculum at the University College of Dentistry is integrated horizontally. Teaching methodologies that have been adapted include practical, large class interactive lectures, tutorials, team based learning and PBL. Scenarios given in PBL sessions are integrated and are based on real issues. Students meet once weekly for the PBL sessions followed by a follow up session. In the initial session they are given the trigger and they identify their learning issues and prepare learning objectives, in the follow up session they give answers to the learning objectives identified. In between the initial and follow up session students do the required self- study.

Data collection: Students were given complete instruction on how to fill the questionnaire. The objective of the study was clearly communicated with the participants. The confidentiality was maintained. The study was approved by ethical review committee of the University College of Medicine and Dentistry.

Data analysis: Data was analyzed using SPSS version 20. There were 6 closed ended questions and their responses was recorded on 5-point likert scale, 0- very poor, 1-poor, 3-average, 4- good and 5 magnificent, while thematic analysis was done for the 2 open ended questions.

RESULTS

The results of the current study depicted that the problem based sessions were useful in achieving their learning goals, Students evaluated that they were able to identify their own and their group's learning needs and appropriate learning resources in order to achieve their learning goals as good (52%), magnificent (30%), average (16%) and poor (2%), they evaluated that they were able to critically analyze the available information as magnificent (44%), good (32%), average (22%) and poor (2%). The students also reported that they could improve their team work (36.5%) and in being confident (30%), according to the results students believed that they did a good job in discussing the scenario (53%), in order to identify their learning issues.

DISCUSSION

The current research is centered on the student's self-evaluation of a PBL session. This self-evaluation process plays a vital role in identifying the areas that require improvement[8].

Our study has identified that PBL process plays a vital role in teaching and learning, this finding is supported by the prior research according to which students learning process is enhanced and their skills regarding problem solving also improve. It was also identified that there is better understanding of the subject[9].

Students also reported that the PBL sessions helped them in identifying their learning needs and their reasoning and analytical skill also improved, a similar research was conducted in which it was identified that PBL sessions helped in identifying analytical skills[10].

PBL inculcates the importance of team work. Students narrated in open ended questions that they do better when they work as a team and felt more confident, a study was conducted according to which students worked as a team and they felt confident while solving the given problem[11,12].

Students can identify their full abilities through self-evaluation and at the same time self-evaluation helps in improving cognition and skills and motivates the student. It also helps in determining the existing gaps between information gained and the skills they perform.

This self- evaluation score in this study showed that the students were able to achieve their learning goals and it also contributed towards their brain storming and reasoning skills

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