

Introducing Problem-Based Learning, Experience at the Faculty of Medicine, King Abdulaziz University

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Abstract. To report on an experience in introducing Problem-Based Learning as an instructional strategy at the Faculty of Medicine, King Abdulaziz University, Jeddah, Saudi Arabia. The steps in approving the introduction of Problem-Based Learning at the Faculty Curriculum Committee and preparations for implementation are reported. The transfer from a traditional, teacher-centered curriculum to a more student-centered learning environment has to deal with a lot of resistance on the side of the teachers. Staff development workshops, good preparation of case scenarios, and provision of good facilities are crucial for the successful introduction of Problem-Based Learning. In the presence of good Problem-Based Learning facilitators, students retain relevant knowledge and enjoy the learning experience.

Keywords: Problem based learning, experience, King Abdulaziz University

Introduction

For over 25 years, the Faculty of Medicine at King Abdulaziz University in Jeddah has been following the traditional Subject-Based curriculum

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model. In response to curriculum reform, a decision was made to introduce the Organ-System-Based curriculum. Other curricular models were felt to be less favorable, given the present facilities, staff numbers, and expected numbers of students.

As part of the preparation for the new curriculum a staff development committee was formed. This committee has the following tasks:

1. To implement symposia introducing the new curriculum.
2. To prepare workshops about new instructional methods, like Problem-Based Learning (PBL), student directed learning (SDL), clinical presentations (CP).
3. To prepare workshops on new methods of assessment (OSPE, OSCE, OSLER, EMQs).

After many symposia and workshops, the new curriculum was introduced in the academic year 2007/2008. The central curriculum committee also made a decision to introduce the PBL as one of the instructional methods within the new curriculum. PBL fosters clinical thinking, allows for integration of many concepts, increases relevance, improves retention of knowledge, and allows students to take responsibility for their learning. It encourages cooperation and the development of group work^[1-3].

It was clear that the move from the lecture based teaching in the old curriculum to the new curriculum, and to introduce PBL as part of the instructional methods was a major undertaking. It became one of the main objectives of the staff development committee to prepare staff at our Faculty for the implementation of PBL.

The Curriculum Development Task Force (Dean, Vice Deans for Academic Affairs, Chairperson of the Medical Education Department, and Chairperson of the Clinical Skills Center) assigned a PBL management committee consisting of a manager and 3 supporting members, all well trained in PBL.

In this study we report on the methodology followed to introduce the PBL. There are 5 tasks to report on:

1. Preparation of the PBL facilitators.
2. Writing of the PBL case scenarios.
3. Preparation of the learning environment.

4. The implementation.
5. Supervision of the implementation.

As part of the post-implementation surveillance, the PBL management committee distributed questionnaires to students and facilitators to have their feedback, but it is not an objective of this paper to report on the results of these questionnaires.

Preparation of the PBL Facilitators

Because of the key role of the facilitators in the PBL, it was obvious that major effort had to be put on the preparation of these facilitators. The PBL manager communicated with every department chairman to send a list of members who will be working as PBL tutors. A manual about PBL was prepared and distributed to all trainees. Dates for training courses were announced well in advance. The training courses were applied in 4 stages: Tutor demonstration; explanation; practice under supervision; and feedback. Stress was put on development of certain skills and attitudes by the students:

Respect

- Listen, and indicate so with appropriate verbal or non-verbal behavior.
- Allow others to express opinions and give information without "putting down" (degrading) anyone.
- Acknowledge others' contributions.
- Apologize when late, or give reasons for being so.

Communication

- Speak directly to group members.
- Present information clearly.
- Use open-ended questions appropriately.
- Identify misunderstandings between self and others, or among others.
- Attempt to resolve misunderstandings.
- Non-verbal behavior (body posture, facial expressions) should be consistent with the tone and content of verbal communications.
- Recognize and respond to group members' non-verbal communication.

Responsibility

- Attend all the sessions.
- Be punctual.
- Complete assigned tasks.
- Present relevant information.
- Identify irrelevant or excessive information.
- Take initiative or otherwise help to maintain group dynamics.
- Advance discussion by responding to or expanding on relevant issues.

Self-Awareness/Self-Evaluation

- Acknowledge your own difficulty in understanding.
- Acknowledge your own lack of appropriate knowledge.
- Acknowledge your own discomfort in discussing or dealing with a particular issue.
 - Identify your own strengths.
 - Identify your own weaknesses.
 - Identify means of correcting deficiencies or weaknesses.
 - Respond to fair negative evaluative comment without becoming defensive or blaming others.
 - Respond to fair negative evaluative comment with reasonable proposals for behavioral change.

Writing of the PBL Case Scenarios

Since it was a decision of the Faculty Curriculum Committee to introduce PBL as a learning strategy into all system-based modules, the PBL manager organized meetings with each module committee to write a PBL case scenario. Learning issues were identified and formulated. A tutor guide was prepared with the intention to make the tutors aware of important learning issues to be covered. These learning objectives were not communicated to the students as they had to develop them during case discussions.

Preparation of the Learning Environment for the Training Courses

Within the Clinical Skills Center (CSC), the facilities needed for the tutor training were provided: A large room for lectures and instructional sessions and 3 small rooms for training sessions. All rooms needed to be

equipped with the necessary audiovisual aids, flip charts, and comfortable seats and tables.

The Implementation of PBL Sessions

Each case was to be discussed over 4 sessions. During each of the first 3 sessions, a specific part of the case scenario was presented. Students discussed the information given and identified learning objectives for the next session. If students were not able to identify any of the important learning issues set forth by the case writers, the tutor was advised to lead them to the important points. The fourth session was intended to discuss the learning objectives of the third session, and to wrap up the case. After each session, students were given 2 hours for self-directed learning related to the learning issues.

The PBL case carries 15% of the total mark of the module, and 7% are assigned to attendance and participation. The remaining 8% are assigned to knowledge and skills related to the case (tested within the MCQ paper and OSPE test at the end of the module).

Supervision of the Implementation

During the actual PBL sessions, members of the PBL management team attended some of the activities to critique the tutors and make general comments and suggestions. Observers did not interfere in any of the activities.

Analysis of the Experience

The overall evaluation was very good. Students were far keener on this learning strategy than some staff members. As already mentioned above, the author will report in another paper in more detail about the results of the questionnaires. Our present analysis will be presented in 3 categories: Process; resources; and outcome.

The Process

Students who are used to spoon-feeding teaching have obvious difficulty in engaging actively in discussions and in attending to such activities on time. It was not before the third session in the first module that students realized these points and became enthusiastic. In the following modules, attendance and participation was good, as seen on the mark distribution.

The training courses for the facilitators included simulation and role play sessions, in which the trainer took the role of the tutor and the trainees took the role of the students. Because the trainers have experience from different medical schools, some differences in applying the course were expected to occur. While most trainees enjoyed the experience, there were some trainees who voiced negative criticism about this point.

In spite of the workshops and training sessions, there was no uniformity in the performance of the facilitators. As some of them were not keen on participation, but were assigned by the department chairman, they performed with carelessness. It reflected negatively on the students, who compare themselves with other subgroups.

Clinicians, whether seniors or juniors, have many other responsibilities; and urgent matters arise more than wanted. Missing sessions did occur. The PBL manager had to bring in standby staff on a short notice to cover for such occurrences as rescheduling of PBL sessions was not possible. Sometimes it was necessary to distribute students among other groups in spite of many obvious disadvantages, like having big groups and losing the dynamics of the original group.

The Resources

Because of the big number of students, many subgroups had to be formed. A 20 male and 20 female subgroups were formed. It was not an easy task to provide enough well equipped rooms for this big number of subgroups. Also, the PBL management team had the task to make sure audiovisual aids and flip charts were readily available.

Also, it was realized that it was a significant disadvantage that there was no facility for internet access in these tutorial rooms.

Because there was no assigned secretary for the PBL training and implementation, it was on the part of the enthusiastic PBL management team to organize the timetables for the training courses and even partly for the actual PBL sessions.

Backup data shows and laptop computers were not available. Some sessions were scheduled outside of the working hours of the IT personnel. No other support staff was available to solve occurring problems.

The Outcome

Until now, no tool to measure the impact of the training courses on the performance of the facilitators is available other than the opinion of the students. As already mentioned above, the process of analyzing the questionnaires for students and staff is presently being conducted. Therefore, reporting on the results will be provided later.

In spite of positive subjective comments on students' performance after the PBL sessions, the impact of this learning strategy on knowledge, attitude and beliefs of the students was not objectively explored

Conclusions and Recommendations

Introducing new learning strategies, like PBL, into a school that has followed the traditional spoon-feeding teaching with the dominance of the expert teacher is not an easy task^[4,5]. Although, we faced the expected resistance from some teachers, reflecting insecurity and fear from loss of power, it was rewarding to see many staff members participating actively in the training courses and later in the implementation of the PBL sessions. Enthusiastic and knowledgeable trainers are a key to success.

Secretarial support for the PBL management team is mandatory. There are too many organizational issues to be taken care of in the communication with departments, IT support staff, and students. Having the responsibility only by the PBL manager is prone to cause problems.

Back-up of audiovisual aids with secure storage areas is also mandatory and necessary.

Poor performance of some facilitators comes obviously from poor motivation, either due to wrong beliefs or due to many other responsibilities. It is important to choose facilitators who are willing to put time and effort. Constraints due to large number of students should not result in utilization of non-motivated facilitators. The complete release from other duties during the training course and also during the implementation of the sessions is mandatory.

Retraining and recertification of facilitators should be done, at least in the first years of implementation.

Well written case scenarios using clinical presentations are the key to motivating students as they will then realize the relevance of the learning objectives^[5].

Scheduled times for student directed learning in the teaching timetable, internet access and good library resources are very important.

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تطبيق أسلوب التعليم المبني على العضلات، خبرة كلية الطب بجامعة الملك عبد العزيز

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المستخلص. اتخذت كلية الطب خطوات جادة في إعادة هيكلة المنهج الدراسي لدرجة بكالوريوس الطب والجراحة، وذلك لتوائم المتطلبات العالمية لخريجي كلية الطب، ونتيجة لذلك قامت كلية الطب بتطبيق نظام التعليم المبني على العضلات لكي تنمي الفكر الإكلينيكي لدى الطلاب والرغبة الذاتية للتعليم، وزرع روح العمل الجماعي، وتحسين طرق التواصل بينهم وبين أعضاء هيئة التدريس والتمريض والمرضى. وقد قدمت كلية الطب عدة ورش عمل لتدريب أعضاء هيئة التدريس على التدريس بطريقة التعليم المبني على حل العضلات. ويتميز التعليم المبني على العضلات بأنه طريقة تدريسية تعتمد على الدمج بين المقررات الدراسية، ويمكن أعضاء هيئة التدريس ومعاونيهم من تنمية روح التفكير العلمي بين الطلاب، وتقديم التقييم المستمر للطلاب دون أن يتأثر تقديرهم.