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# PROBLEM BASED LEARNING GUIDE

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## Definitions of new terms

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### **Problem Based Learning (PBL):**

Learning strategy which puts a problem first, and in which further learning is conducted in the context of the problem.

### **Learning Objectives:**

Statements describing what a student is expected to learn from the lesson. The learning objective provides a detailed description of what the student will be able to do when the instruction ends. A teacher uses a learning directive to help students understand how to make practical use of information learned during the lesson.

### **Learning Outcomes:**

Statements that describe significant and essential learning that learners have achieved and can reliably demonstrate at the end of a course or program. In other words, learning outcomes identify what the learner will know and be able to do by the end of a course or program.

### **Self-directed learning skills:**

Instructional strategy where the students, with guidance from the teacher, decide what and how they will learn? It can be done individually or with team learning, but the overall concept is that students take ownership of their learning.

### **Life-long learners:**

(Life-long Education) is the provision or use of both formal and informal learning opportunities throughout people's lives in order to foster the continuous development and improvement of the knowledge and skills needed for employment and personal fulfilment.

### **Team Dynamics:**

The interactions that influence the attitudes and behavior of people when they are teamed with others through either choice or accidental circumstances.

### **Tutor (Facilitator):**

A tutor is a staff assistance who facilitates the team discussion and learning rather than leading it. Also, team the tutor assists them to plan how to achieve the learning objectives form the problem. However, the tutor remains "neutral" and does not take a particular position in the discussion.

## Introduction about Problem Based Learning and the theory behind it

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### Traditional versus Problem-Based Learning

As PBL is a modern strategy of learning, its process depends on the fact that discovering the information is more effective than receiving it from a lecturer. Traditional approaches to learning often follow a linear process where the instructor dictates what is to be done: Information and details are presented first which the students then use to solve a problem. In problem-based learning, the problem is presented first after which students work in small teams to solve the problem, so the student can identify the learning objectives by himself through the problem which has been designed by subject experts in a way that the flow of the information is logical and understandable.

Once the student has identified the nature of the problems or issues, he will draw up an agreed set of learning outcomes for the PBL and use the next few days to research, using different resources to get the information which will help him to meet those outcomes before the PBL team reconvenes. At the next PBL meeting the student will have an opportunity to discuss the interim findings of his research with his colleagues and clarify any areas of further research.

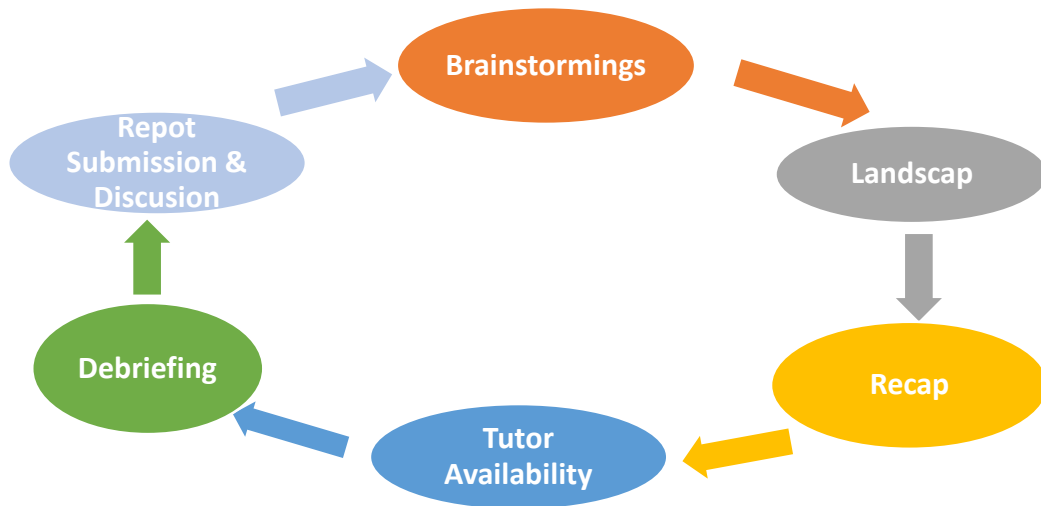
The effectiveness of the PBL session depends upon all the members and thus attendance at PBL sessions is compulsory. The process is done by composing student teams of 8 to 12 with the guidance of tutor. The students' attendance will be monitored, and disciplinary action is likely to be taken if you fail to attend a certain number of PBL sessions, as shown in faculty regulations.

#### Benefits of PBL

- Promoting deeper rather than superficial learning.
- Improving retention and recall of information.
- Increasing motivation for and enjoyment of learning by providing an active, stimulating and sociable learning environment.
- Fostering self-directed learning skills which are likely to lead to graduates becoming life-long learners.
- Helping students develop interpersonal and teamwork skills essential for the work after graduation.

## PBL Session Cycle

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### 1. Brainstorming Session

During this session the students will meet and sit down in a U shape to:

- Tutor will choose the leader and the scribe for this session.
- The leader distributes the problem to the students.
- Students asked to read Silently the problem.
- Students read Loudly the problem equally.
- Students clarify terms and concepts not readily comprehensible.
- Summarize the problem by two students.
- Define the problem after agreement of all students.
- Analyse the problem and identify the point of focus (Main Idea).
- Draw a spider shape about the essential concepts of the problem.
- Formulate learning objectives.
- Evaluate the session verbally including their performance, their partners, and the tutor.
- Tutor evaluates students' performance orally and written by specific form.

### 2. Research or Personal Study

Students collect scientific information individually to cover the learning objectives team they have to use scientific references which can be a textbook, scientific journal, website, etc.

### 3. Recap or Feedback session

At this next PBL meeting, students will have an opportunity to discuss the interim findings of the research and clarify any areas of further research. This is known as the 'recap or feedback'.

### 4. Tutor Availability

Tutor will be available for student at certain office hours to guide the confused student Who couldn't find any information about a certain objective.

## 5. Debriefing

Debriefing is a term used in experiential education to describe a question-and-answer and discussion session with participants. These talking sessions are generally thought to be a 'sit down' circle where the tutor asks questions, and the participants answer or describe the information by using different learning tools as a media, board, oral or poster presentation. team

## 6. Report

After debriefing session, students will have all the information that need to know and should have written them in an academic way of writing that will be explained in Report Writing Guide. The report should be discussed with the tutor or the subject expert to evaluate it and to evaluate your ability to explain what you collected and wrote.

## 7. Evaluation

At end of any session, Tutor & students evaluate and assess themselves, other students tutor, and team performance. Opportunities for improvement should be identified and suggestions for improvement should be provided. The PBL tutor assesses students regularly in the form of grades and detailed reports about them.



## PBL Session Main Components

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### 1. The problem

The problem is a scenario or case which promotes the PBL process, discussion, and learning by:

- Engaging student interest.
- Embedding student learning in a realistic setting.
- Triggering existing knowledge and understanding which enables students to build upon what they already know.

### 2. The Tutor

The role of the PBL tutor is to facilitate team discussion, create a healthy environment that allows all members to contribute to discussion, provide feedback and monitor the team's progress. The PBL tutor is not there to provide easy answers and it will be of no benefit to the team to try to obtain the week's learning outcomes from him/her. For PBL to be effective, students need to come up with the outcomes themselves and bypassing this part of the process will only be detrimental to your learning.

PBL tutor will encourage students to explore the breadth and depth of a subject, thereby assisting in the learning process. Thus, instead of providing the information, the PBL tutor may guide students towards recognising it.

What to expect from a Problem Based Learning Tutor

- team acts as a role model.
- Promotes students' interaction within the PBL team.
- Guides learning within the PBL team.
- Motivates the students to learn.
- Monitors the progress of each student throughout the PBL sessions.
- Monitors attendance.
- Provides feedback to the chief tutor, team, and the curriculum development committee through the chief tutor.
- Helps students to identify relevant learning resources
- Provides academic and non-academic support to students.

#### What students can do to help the Problem Based Learning Tutor?

- Remember that they are part of the team and include them in academic discussion.
- PBL students would have experience of team dynamics and the pressures of working within it. They would have developed a model of working with members with varying attributes.
- Show appreciation when they are offered constructive and helpful advice.
- Be specific about the assistance you need – don't ask for answers, ask for contributions to the discussion.
- Be positive and creative and willing to contribute.
- Abide by the faculty of pharmacy code of conduct that regulates the PBL sessions.

### 3. The PBL Team

Teams usually consist of 8 to 12 students. Each member of the team maintains a particular role throughout the PBL session. The three roles are:

## **1. The Leader**

At each PBL session one of the students will be the leader who will be responsible for leading the discussion and controlling the PBL session. It is important that everyone has a chance to be a leader and experience the challenge of leading a team. Accordingly, the leadership should be rotated between team members.

### **Roles of Leader**

- Distributes the problem to the team member.
- Invites and encourages team members students participate and ensures that everyone is contributing equally and that no one is too quiet or too dominant.
- Asks for summarises.
- Oversees and time manage of PBL session and moves discussion when necessary.
- Ensure team members stick to the task on hand according to the right sequence.
- Contributes in the discussion as a team member.

### **Tips for Successful Leadership**

- Try to find a balance between keeping people focused on the task. This can be a challenge but produces the most enjoyable and productive working environment.
- Set an example: If you believe it is important that the Firm members say what they want to say, take the first step and say what you think and feel. This can stimulate others to say what they think and express their feelings as well as their thoughts.

## **2. The Scribe**

The function of the scribe is to write in an account of the team discussion on the board) and to order ideas and problems as they are raised. The scribe needs to capture the interlinking ideas which have been discussed a using of 'spider diagram'. The scribe role should be rotated between team members.

### **Roles of the Scribe**

- Listens carefully.
- Notes down ideas and concepts after team members agreements.
- Organises the notes by categorizing concepts.
- Checks the accuracy of the notes with other team members.
- Continues to contribute to the team discussion as a team member.
- Writes the learning outcomes the team has decided on the board.

### **Tips for a Scribe**

- Don't try to write down everything. This will slow the session down too much. Try to develop a succinct way of making clear notes on what has been said.
- Do not be afraid to tell the team to slow down.

## **3. Team member**

Although the roles of PBL tutor, the leader and scribe are important in the context of running a PBL session, each individual firm member must recognise their equal responsibility to contribute as fully as they can. PBL works exceedingly well if all firm members are committed



to the task and the process. Problems can occur, however, if some students are disengaged or not contributing properly. Being a member of a firm can be a rewarding but sometimes difficult role. It is important to try to develop the habit of regularly reflecting upon your own contribution to the firm. No matter how hard you prepare yourself academically for the PBL sessions, the work you do will only pay off fully if you and the rest of the students are functioning as a unit.

Different students have different learning capacities, strengths and weaknesses. An important challenge is to identify your own learning needs and experiment with the techniques and time that will enable you to address them.

### **Key Points for Team Members**

- The success of each meeting is the responsibility of all team members.
- All team members must respect the roles of the scribe and the leader and assist them in their roles.
- Try to keep a balance between dominating the discussion and sitting on the side-lines saying nothing. Neither of these positions will help you or the team.
- Students should not be hesitated to contribute ideas, especially during the brainstorming session.
- All team members should accept the feedback.

### **Tips for Self-Directed Learners**

- Be patient with the adaptation process that it may take you some time to settle in fully to teamwork and self-directed learning.
- Do not be afraid to try new learning techniques.
- Try to develop consistent and disciplined timetable for your study, it will help you on the long run and make the weekly work more enjoyable.

## The Seven Steps of PBL session

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### **1. Clarify**

It should take very little time. It is simply a matter of making sure that every student understands all the words that are used in the written case.

### **2. Define**

Define what the problem is about. There is usually a very strong clue in the problem scenario.

### **3. Analyze**

This takes most of the time and cannot usually be done in less than an hour. The problem should be discussed by all of members of the team. Work out what you already know about the various components of the problem and try to link concepts together. Most teams find this easiest to do with a "Mind-Map" or "Concept Map". Students should challenge themselves to explain how things work and why they think what they think. It is essential that you do not just say "We did that in the last module". They only can actively use their prior knowledge by articulating it. In other words, they shouldn't say that they know, instead they should state what they know. Don't be afraid to say something "naïve" or "doesn't make sense", this is a safe environment in which they can learn from each other.

### **4. Sift & Sort**

After an hour or so, they should have sufficient relevant information on the board. Then, they should work out which concepts are linked, and which they as a team feel they need to focus on.

### **5. Identify Learning objectives**

Make sure that you take note about the team objectives which posted on the whiteboard at the end of brainstorming session.

### **6. Go and learn**

Everyone in the team should research all the learning objectives individually, use all of the resources and try to understand what they are reading. At first, they may find it difficult to work out how deep they need to go team.

## Professional Behavior in PBL meetings

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### Respect

1. Listens, and indicates so with appropriate verbal or nonverbal behaviour.
2. Verbal and nonverbal behaviours are neither rude, arrogant nor patronizing.
3. Does not humiliate or denigrate group team members for their opinions or information.
4. Differentiates the value of information from value of person.
5. Acknowledges group team members' contributions.
6. Does not interrupt inappropriately.
7. Participates in discussion of differences in moral values.
8. Apologizes when late or gives reason for being so.

### Responsibility

1. Is punctual.
2. Completes assigned tasks.
3. Presents relevant information.
4. Identifies irrelevant or excessive information.
5. Takes initiative or otherwise helps to maintain team dynamics.
6. Takes initiative or otherwise helps to define team goals.
7. Advances discussions by responding to or expanding on relevant issues.
8. Identifies own emotional or physical state when relevant to own functioning or team dynamics.
9. Accept priority of tutorial time over other activities.
10. Identifies lack of honesty in self or others that interferes with team dynamics or attainment of team goals
1. 11. Describes strengths and weaknesses of team members in a supportive manner.
11. Gives prior notice of intended absence.

### Self-Awareness/ Self-Evaluation

1. Acknowledges own difficulty in understanding.
2. Acknowledges own lack of appropriate knowledge.
3. Acknowledges own discomfort in discussing or dealing with a particular issue.
4. Identifies own strengths.
5. Identifies own weaknesses and how to improve.
6. Responds to fair negative evaluative comments without becoming defensive or blaming.
7. Responds to fair negative evaluative comments with reasonable proposals for behavioural change.

## **Communication Skills**

1. Speaks directly to team members.
2. Uses words that team members understand.
3. Presents clearly.
4. Uses open-ended questions appropriately.
5. Uses non-judgmental questions.
6. Identifies misunderstanding between self and others or among other team members.
7. Attempts to resolve misunderstanding.
8. Able to express own emotional state in appropriate situations.
1. Non-verbal behaviours are consistent with tone and content of verbal communication.
9. Verbal or non-verbal behaviours indicates that statements have been understood.
10. Recognizes and responds to team members' non-verbal communication.