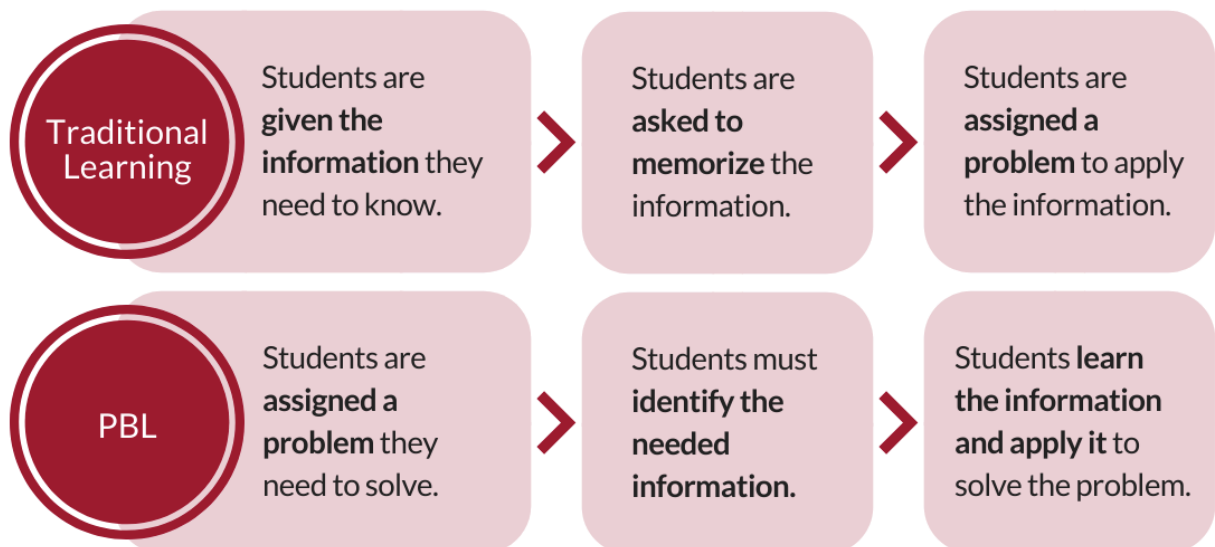


PROBLEM-BASED TEACHING AT UNIVERSITIES, HOW TEACH AND MOTIVATE STUDENTS

David Kryštof, Ph.D., PCC



WHAT IS PROBLEM-BASED LEARNING?

- Problem-based learning is a style of teaching that encourages students to become the drivers of their learning process.
- Problem-based learning involves complex learning issues from real-world problems and makes them the classroom's topic of discussion; encouraging students to understand concepts through problem-solving skills rather than simply learning facts.



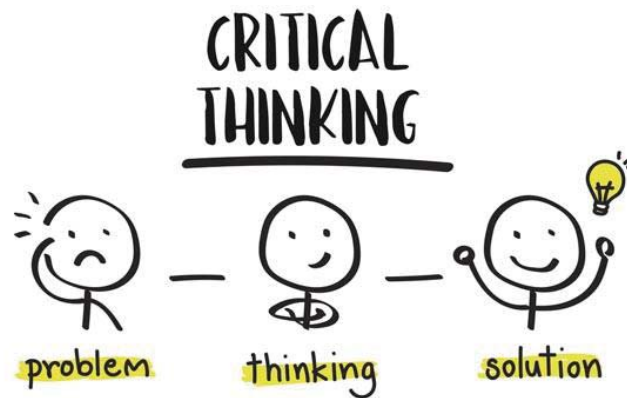
WHAT IS IT?

- It is a student-centred teaching method in which students understand a topic by working in groups.
- They work out an open-ended problem, which drives the motivation to learn.
- These sorts of theories of teaching do require university to invest time and resources into supporting self-directed learning.
- Not all curriculum knowledge is best acquired through this process, rote learning still has its place in certain situations.

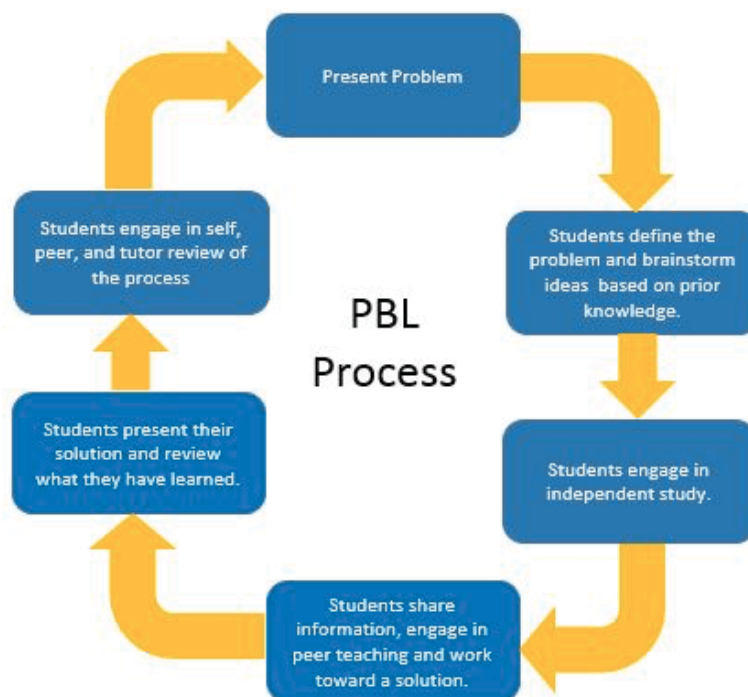


WHAT IT CAN PROMOTE?

- It can promote the development of problem-solving abilities, critical thinking skills, and communication skills while providing opportunities to work in groups, find and analyse research materials, and take part in life-long learning.



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(Source: <http://www.slideshare.net/kategukeisen/problem-based-learning-basics>)

Problem Based Learning Process.

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WHAT ARE CHARACTERISTICS?

- The problem encourages students to search for a **deeper understanding** of content knowledge;
- Students are **responsible** for their learning. PBL has a student-centred learning approach. Students' motivation increases when responsibility for the process and solution to the problem rests with the learner;
- The problem **motivates** students to gain desirable learning skills and to defend well-informed decisions;

WHAT ARE CHARACTERISTICS?

- The problem connects the **content learning goals** with the **previous knowledge**.
- Problem-based learning allows students to access, integrate and study information from multiple disciplines that might relate to understanding and resolving a specific problem—just as persons in the real world recollect and use the application of knowledge that they have gained from diverse sources in their life.

WHAT ARE CHARACTERISTICS?

- In a multistage project, the first stage of the problem must be engaging and open-ended to make students interested in the problem.
- In the real world, problems are poorly-structured. **Research suggests that well-structured problems make students less invested and less motivated in the development of the solution.**
- The problem simulations used in problem-based contextual learning are less structured to enable students to make a free inquiry.



WHAT ARE CHARACTERISTICS?

- In a **group project**, the problem must have some level of **complexity** that motivates students towards knowledge acquisition and to work together for finding the solution. This involves **collaboration** between learners.
- During the teaching, the teacher would ask questions to make sure that knowledge has been shared between students;



WHAT ARE CHARACTERISTICS?

- At the end of each problem, **self and peer assessments** are performed. The main purpose of assessments is to sharpen a variety of metacognitive processing skills and to reinforce self-reflective learning.



WHAT ARE CHARACTERISTICS?

- Student assessments would evaluate **student progress** towards the objectives of problem-based learning. Students must be assessed on both these dimensions to ensure that they are prospering as intended from this approach. Students must be able to identify and articulate what they understood and what they learned.

WHAT IS THE PHILLIPS 66 METHOD?

- Phillips 66 is one of the brainstorming methods.
- The author of this method is Donald Phillips.



HOW TO CONDUCT PHILLIPS 66?

Conducting brainstorming can be divided into 5 basic steps:

- Step 1. Divide participants from a large discussion group into smaller subgroups. If possible, separate the groups from each other so that they cannot hear the conversations and ideas of other groups.
- Note – it is best to divide the group into subgroups in advance, taking into account the personality and tempers of the group individuals.

HOW TO CONDUCT PHILLIPS 66?

- Step 2. Electing spokespersons in subgroups. The task of the team spokesperson will be to present their group's ideas and ensure that the other members of the subgroup have a voice and can express themselves freely.
- Step 3. Presentation of the problem to be analyzed in subgroups. The discussion on the solution to the problem will last 6 minutes (turn on the stopwatch).
- Note – remember not to suggest any solution to the participants. Invite brainstorming participants to discuss.



HOW TO CONDUCT PHILLIPS 66?

- Step 4. Presentation of ideas of each group by designated spokesmen. The ideas are written down in a place visible to all.
- Step 5. All written ideas are discussed and evaluated by the participants.



LET'S TRY IT

Your topic:

- How can I include problem-based learning into my teaching?



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BENEFITS AS A CONCLUSION

- **Self-learning:** As a self-directed learning method, problem-based learning encourages children to take responsibility and initiative for their learning processes. As children use creativity and research, they develop skills that will help them in their adulthood.
- **Engaging:** Students don't just listen to the teacher, sit back and take notes. Problem-based learning processes encourages students to take part in learning activities, use learning resources, stay active, think outside the box and apply critical thinking skills to solve problems.

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BENEFITS AS A CONCLUSION

- **Teamwork:** Most of the problem-based learning issues involve students collaborative learning to find a solution. The educational practice of PBL builds interpersonal skills, listening and communication skills and improves the skills of collaboration and compromise.
- **Intrinsic Rewards:** In most problem-based learning projects, the reward is much bigger than good grades. Students gain the pride and satisfaction of finding an innovative solution, solving a riddle, or creating a tangible product.



BENEFITS AS A CONCLUSION

- **Transferable Skills:** The acquisition of knowledge through problem-based learning strategies don't just help learners in one class or a single subject area. Students can apply these skills to a plethora of subject matter as well as in real life.



BENEFITS AS A CONCLUSION

- **Multiple Learning Opportunities:** A PBL model offers an open-ended problem-based acquisition of knowledge, which presents a real-world problem and asks learners to come up with well-constructed responses. Students can use multiple sources such as they can access online resources, using their prior knowledge, and asking momentous questions to brainstorm and come up with solid learning outcomes.

BENEFITS AS A CONCLUSION

- Unlike traditional approaches, there might be more than a single right way to do something, but this process motivates learners to explore potential solutions whilst staying active.

YOUR QUESTIONS & IDEAS?



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**THANK YOU FOR YOUR
ATTENTION**

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