

# Problem-Based Learning

## General

Problem-based learning is a constructivist instructional strategy. One of the first and most commonly cited examples of problem-based learning was introduced in **1960s** medical education in Canada. It suggests learning will be more effective if **learners are faced with a real-life practical problem** they need to solve and

- *"empowers learners to conduct research, integrate theory and practice, and apply knowledge and skills to develop a viable solution to a defined problem."*<sup>1)</sup>

## What is problem-based learning?

In the 1960s at the McMaster University in Canada it was noted that medical education students were mostly bored during their classes, until they reached a stage where they were supposed to work with patients and try to help them solve their problems. It was then decided that biomedical problems, analyzed in small groups would be introduced into whole educational process, what remained a practice until today<sup>2)</sup> and has also spread to other medical schools as well as other fields like nursing, law, engineering, management, business administration and other<sup>3)4)</sup>.

Although problem-based learning can be implemented on a variety of ways, its main **characteristics** are the following<sup>5)</sup>:

- Problem-based learning is a **learner-oriented approach**. *"Under the guidance of a tutor... the students must take **responsibility for their own learning**, identifying what they need to know to better understand and manage the problem on which they are working and determining where they will get that information..."*<sup>6)</sup>
- Learning occurs in **small groups** with usually less than ten members and collaboration with other learners is necessary.
- Teacher has the role of a facilitator. Not by correcting students or providing them knowledge and guidance but by **asking questions** that the learners should be asking themselves in order to better understand the subject and by encouraging them to **apply their knowledge**.
- New (possibly interdisciplinary) information is acquired through **self-directed learning** and has to be applied on the problem.
- The **problem** learners are dealing with must be similar to **real-world** problems, **motivating** and **ill-defined** to enable multiple hypotheses to be constructed.

A possible **flow** of a problem-based learning course includes the following tasks from the students:

- be **presented with a problem**
- **discuss**, clarify the problem and develop a plan for further working on the problem
- **work on the problem independently**
- **share and discuss** their individual approaches and work together
- **present their solutions**
- **review** what they have learned

Problem-based learning can be a helpful method in the educational process, but it can also be viewed as a **total education strategy**<sup>7)</sup>.

Different experimental results have been obtained using problem-based learning, but generally showing not much difference in declarative knowledge in students learning through problem-based design and those using classical teaching methods. Still, there is evidence that problem-based learning **supports development of reasoning skills, problem-solving skills and self-directed learning skills**<sup>8)</sup>.

## What is the practical meaning problem-based learning?

### Criticisms

### Keywords and most important names

### Bibliography

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### Read more

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8)

For details see: [Hmelo-Silver, C. E, R. G Duncan, and C. A Chinn. "Scaffolding and achievement in problem-based and inquiry learning: A response to Kirschner, Sweller, and Clark. 2006](#)

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