

Inquiry-Based Learning

General

Inquiry-based learning (also *enquiry-based learning* or *inquiry learning*) is a constructivist instructional strategy widely adopted in the **1970s**¹⁾ and based on **John Dewey**'s views on learning as **active**, **learner-centered** process which should be based on **real-world examples** instead of rote fact memorization. Inquiry represents questioning which fosters curiosity and questioning by students. During the inquiry-based learning discovery is guided by learners through **forming questions** and **finding answers** to those questions alone or in teams.

What is inquiry-based learning?

The idea of inquiry-based learning is to foster characteristics of good learners and encourage them in the educational process. These characteristics²⁾ include confidence in the ability to learn, enjoying problem-solving, trusting one's own judgement, not fearing being wrong, a flexible point of view, and respect for facts. These qualities, according to Postman and Weingartner³⁾ can be fostered through an approach in which the teacher:

- rarely tells the students what they need to know since that would reduce their excitement in finding things out on their own,
- interacts with students mostly through questioning and encourages interaction among students,
- does not accept short answers, but rather tries to deepen them by further questioning,
- rarely summarizes what students' discussion and what they have learned since learning is a continuous process.



The **inquiry-based process of learning** can be described as a cycle based on these activities mainly through following main steps:

- **Questioning** and curiosity provoked through questioning by the teacher together with taking

the responsibility for their own learning by the students starts this process of learning.

- Investigation, gathering of information and **studying materials**, observing and other related activities are then expected to be performed by the students.
- This is followed by a **synthesis** of collected information, building hypotheses and possible explanations and planning on how to prove them.
- Development and presentation of **explanations**. **New questions** may arise at this point.
- Reflection on the original question, the research path, and the conclusions. Newly arisen questions form the beginning of a new cycle.

These steps in general are quite similar to the steps of [problem-based learning](#). Differences between these two approaches are minimal according to some⁴⁾ and appear only in their origins (problem-based learning was developed in medical education and inquiry-based learning in science education), others suggest it is the role of the teacher:

- *“In an inquiry-based approach the tutor is both a facilitator of learning (encouraging/expecting higher-order thinking) and a provider of information. In a PBL approach... the tutor does not provide information related to the problem — that is the responsibility of the learners.”*⁵⁾

Some authors suggest different inquiry-based learning modes depending on the level of scaffolding⁶⁾:

- structured inquiry - when teacher presents a problem and main frames for addressing it,
- guided inquiry - when teacher provides questions to motivate students, but the research they do is self-directed, and
- open inquiry - when students formulate questions and investigate them themselves.

Advantages of inquiry-based learning are **increase in students motivation**, active approach to learning, academic skills and intellectual habits⁷⁾. Students are also encouraged to develop critical thinking, **reflect on their learning**, use different learning resources and gain **deeper understanding of the course concepts**.⁸⁾

What is the practical meaning of inquiry-based learning?

An example of inquiry-based learning is learning about language using a Star-Trek episode as a motivator⁹⁾. In the Star Trek: The Next Generation episode “Darmok” viewers are introduced to the concept of *Tamarian language* spoken by an alien civilization. Whether this invented language could be an actual human language was debated by many professional linguists. A possible instructional plan for learning about language characteristics based on this episode is the following:

- Show students the “Darmok” episode
- Pose the problem to them: could *Tamarian* be a human language?
- Provide students with resource materials or encourage them to look them up themselves.
- Assist them if necessary on how to research the question and conduct analysis of language properties.
- Analysis of results and reflection.

Criticisms

Keywords and most important names

Bibliography

Centre for Teaching and Learning: What Is Inquiry-Based Learning? Queen's University. Retrieved April 26, 2011.

Postman, Neil, and Charles Weingartner. *Teaching as a subversive activity*. Dell, 1980.

Lane, J. *Inquiry-based Learning*. Schreyer Institute for Teaching Excellence, Penn State. 15th September 2007.

Cultural Connections - What is Inquiry Based Learning.

Inquiry Page. University of Illinois. Retrieved April 26, 2011.

Spronken-Smith, Rachel, and Rebecca Walker. Can inquiry-based learning strengthen the links between teaching and disciplinary research? *Studies in Higher Education* 35, no. 6: 723-740. September 2010.

Read more

Benson, Chris, and Christian, Scott. *Writing to make a difference: classroom projects for community change*. Teachers College Press, 2002.

Brew, A. *The nature of research: Inquiry in academic contexts*. New York : Routledge/Farmer. 2001.

Allen, P. and Greeves, H. *Inquiry-based learning: A case study in Asian Studies*. HERDSA News, 21-23. April 2005.

¹⁾
Spronken-Smith, Rachel, and Rebecca Walker. Can inquiry-based learning strengthen the links between teaching and disciplinary research?" *Studies in Higher Education* 35, no. 6: 723-740. September 2010.

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Postman, Neil, and Charles Weingartner. *Teaching as a subversive activity*. Dell, 1980.

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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)*. *Educational Psychologist* 42, no. 2: 99-107. 2007.

⁵⁾

Savery, J. R. *Overview of problem-based learning: Definitions and distinctions*. *The Interdisciplinary Journal of Problem-based Learning* 1, no. 1: 9-20. 2006.

⁶⁾

Spronken-Smith, Rachel, and Rebecca Walker. Can inquiry-based learning strengthen the links between teaching and disciplinary research? *Studies in Higher Education* 35, no. 6: 723-740.

September 2010.

7)

Justice, C., J. Rice, and W. Warry. Academic skill development-inquiry seminars can make a difference: evidence from a quasi-experimental study. International Journal for the Scholarship of Teaching and Learning 3, no. 1. 2009.

8)

Lane, J. Inquiry-based Learning. Schreyer Institute for Teaching Excellence, Penn State. 15th September 2007.

9)

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