

## **A Brief Summary of Discovery Learning**

**Discovery Learning** is a method of [inquiry-based instruction](#) and is considered a [constructivist](#) based approach to education. It is supported by the work of learning theorists and psychologists [Jean Piaget](#), [Jerome Bruner](#), and [Seymour Papert](#).

[Jerome Bruner](#) is thought to have originated discovery learning in the 1960s, but his ideas are very similar those of earlier writers (e.g. [John Dewey](#)). Bruner argues "Practice in discovering for oneself teaches one to acquire information in a way that makes that information more readily viable in problem solving" (Bruner, 1961, p.26). This philosophy later became the discovery learning movement of the 1960s. The mantra of Discovery suggests we should '[learn by doing](#)'.

Discovery learning takes place in problem solving situations where the learner draws on his own experience and prior knowledge and is a method of instruction through which students interact with their environment by exploring and manipulating objects, wrestling with questions and controversies, or performing experiments.

### **A Critique of Discovery Learning**

Several groups of educators have found evidence discovery learning is a less effective as an instructional strategy for novices, than more direct forms of instruction (e.g. Tuovinen and Sweller, 1999). While discovery learning is very popular, it is often used inappropriately, to teach novices (Kirschner et al, 2006). According to Kirschner et al, learners should be given some direct instruction first, and then later, be allowed to apply what they have learned.

People can "learn by doing." A debate in the instructional community now questions the effectiveness of this model of instruction (Kirschner, Sweller, & Clark, 2006). Bruner (1961) suggested students are more likely to remember concepts if they discover them on their own. This is as opposed to those they are taught directly. However, Kirschner, Sweller, and Clark (2006) report there is little empirical evidence to support discovery learning. Kirschner et al suggest that fifty years of empirical data does not support those using these unguided methods of instruction.

### **A Selection of URLs on Discovery Learning:**

<http://www.learning-theories.com/discovery-learning-bruner.html>

<http://www.nwlink.com/~donclark/hrd/history/discovery.html>

[jolt.merlot.org/.../Self%20Discovery%20Learning%20Spaces.ppt](http://jolt.merlot.org/.../Self%20Discovery%20Learning%20Spaces.ppt)

@@@ Piaget: <http://www.sk.com.br/sk-piaget.html> @@@

## A Brief Summary of Inquiry Teaching & Learning

**Inquiry-based learning** describes a range of various philosophical, curricular and pedagogical approaches to teaching. Its core premises include the requirement that learning should be based around student questions. [Pedagogy](#) and curriculum requires students to work independently to solve problems rather than receiving direct instructions on what to do from the teacher. Teachers are viewed as facilitators of learning rather than vessels of knowledge. The teachers job in an inquiry learning environment is therefore not to provide knowledge, but instead to help students along the process of discovering knowledge themselves.

Inquiry-based learning is an instructional method developed during a popular [discovery learning](#) movement of the 1960s. It was developed in response to a perceived failure of more traditional forms of instruction, where students were required simply to memorize fact laden instructional materials (Bruner, 1961). Inquiry learning is a form of [active learning](#), where progress gained by students is assessed by how well students develop experimental and analytical skills rather than how much knowledge they possess. Inquiry instruction is popular, but like other approaches, its effectiveness is open to debate.

### Characteristics of inquiry-learning

The teacher does not communicate knowledge, but is rather helps students to learn for themselves. Teachers are facilitators of Learning not dispensors of Learning.

The problem to be studied, and methods used to answer this problem are determined by the student and not the teacher. Teachers guide the students to self-learning and life-long learning.

Inquiry learning emphasizes [constructivist](#) ideas of learning. Knowledge is built in a step-wise fashion. Learning proceeds best in group situations. Groups might be better known as Teams.

### A Selection of URLs for Inquiry Teaching and Learning:

@ <http://www.thirteen.org/edonline/concept2class/inquiry/index.html> @

@ [www.biosciencednet.org/portal/files/Inquiry.ppt](http://www.biosciencednet.org/portal/files/Inquiry.ppt) @

@ [http://en.wikipedia.org/wiki/Inquiry-based\\_learning](http://en.wikipedia.org/wiki/Inquiry-based_learning) @ <http://inquiry.uiuc.edu/> @

@ <http://www.queensu.ca/ctl/goodpractice/inquiry/strategies.html> @