Cognitivism

About cognitivism

One of the first criticisms of behaviorist learning approach came from gestalt psychologists during the first decades of the 20th century and was related to behaviorist dependencies exclusively on overt behavior. It was the gestalt views on learning that influenced **new approaches** extending beyond behaviorism and set the **basic principles** of what is today known as **cognitive theories**. In the 1960s behaviorism was as a dominant learning paradigm replaced by cognitivism.

Cognitive approach to learning, unlike behavioral,

- sees learning as the **active** acquisition of new knowledge and developing adequate **mental** constructions,
- sets the **learner** as the **locus of control** and not just as a passive participant in the process of learning,
- attempts to open the "black box" of his mind and **explain** complex **cognitive processes**, and
- emphasizes the role of **prior knowledge** for learning outcomes.

Cognitivist theories emphasize the **importance of the learner**, especially his **prior knowledge and experiences** as well as his role of an **organized information processor**.

Human memory system

Memory is often defined as *an organism's ability to store, retain, and recall information and experiences*[1]. Since it has a crutial role in acquisition and retention of knowledge, it was the subject of many researches and an essential part of many cognitivist learning theories.

- Overview of Human Memory Models

Learning theories:

- Gestalt Psychology - Max Wertheimer (1880 – 1943)
- Stage Theory of Cognitive Development - Jean Piaget (1896 - 1980)
- Assimilation Theory - David Ausubel (1918 - 2008)
- Social Cognitive Learning Theory - Albert Bandura (1925 -)
- Conditions of Learning - Robert Gagne (1916 - 2002)
- Schema Theory - Richard Anderson (1934 -)
- Script Theory - Roger Schank
- Cognitive Load Theory - John Sweller
- Cognitive Theory of Multimedia Learning - Richard Mayer

Instructional design theories and learning models:

- [Cone of Experience](#) - [Edgar Dale (1900 – 1985)](#)
- [Elaboration Theory](#) - [Charles Reigeluth](#)
- [Concept Mapping](#) - [Joseph Novak](#)
- [Component Display Theory](#) - [Dave Merrill](#)
- [Structural Learning Theory](#) - [Joseph Scandura](#)

Criticisms

Since the beginning of its intensive development during the 1960s various critics of cognitivism have emerged, challenging its assumption that **mental functions can be compared to an information processing model**. Some authors like John Searle or Roger Penrose claim that computation, due to its inherent limitations, can never achieve the complexity and possibilities of human mental functions and therefore cannot be successfully used to describe them. Common examples for this are:

- **Gödel's incompleteness theorem** which claims that "*within any given branch of mathematics, there would always be some propositions that couldn't be proven either true or false using the rules and axioms... of that mathematical branch itself. You might be able to prove every conceivable statement about numbers within a system by going outside the system in order to come up with new rules and axioms, but by doing so you'll only create a larger system with its own unprovable statements.*"[2] or **Turing's halting problem** are often held as proves for this point of view, showing how some things are naturally non-computable.

During the 1970s **humanism** evolved as an opposing view to both behaviorism and cognitivism beginning with the **holistic approach**, belief in the power of an individual and view **learning as a way of fulfilling his potentials**.

Bibliography

[Cognitivism at Learning Theories.](#) Retrieved February 21, 2011.

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[1)](#)
[Wikipedia: Memory.](#) Retrieved March 21, 2011.

2)

Jones & Wilson. An Incomplete Education. In Denton, W. Gödel's Incompleteness Theorem. Miskatonic University Press.

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