

**From Misconceptions to Constructed Understanding**  
**The Fourth International Seminar on Misconceptions Research**  
**(1997)**

**Article Title: Constructivism: What It Is And Is Not**

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Abstract: This paper presents the epistemological assumptions of Constructivism in contrast to those of a more objectivist position. Within this framework is defined the concepts of learning, instruction and evaluation. It presents examples and draws implications for the application in the design of learning settings.

Keywords:

General School Subject:

Specific School Subject:

Students:

Macintosh File Name: McAvoy-Constructivism

Release Date: 10-1-97 A

Editor: Abrams, Robert

Publisher: The Meaningful Learning Research Group

Publisher Location: Santa Cruz, CA

Volume Name: The Proceedings of the Fourth International Misconceptions Seminar - From Misconceptions to Constructed Understanding

Publication Year: 1997

Conference Date: June 13-15, 1997

Contact Information (correct as of 12-23-2010):

Web: [www.mlrg.org](http://www.mlrg.org)

Email: [info@mlrg.org](mailto:info@mlrg.org)

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## **Constructivism: What It Is And Is Not**

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### Abstract

This paper presents the epistemological assumptions of Constructivism in contrast to those of a more objectivist position. Within this framework is defined the concepts of learning, instruction and evaluation. It presents examples and draws implications for the application in the design of learning settings.

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The purpose of this paper is to provide a discussion of the distinctions to be made between principles and examples of constructivism and objectivist positions in instructional design.

In his article *Forms and Facets of Constructivist Psychology*, William J. Lyddon says this about constructivism.

Constructivism is an epistemological perspective based on the assertion that humans actively create the realities to which they respond. Contemporary constructivist thought has its roots in a philosophical and psychological tradition that draws attention to the active role of the human mind in organizing and creating meaning - in literally inventing rather than discovering reality.

In this brief and clear statement, Lyddon specifies what constructivism is, and implicitly, is not. First, constructivism is an epistemological perspective. What this means is that constructivism is supported by a set philosophical assumptions that create a domain or a frame of reference within which its concepts are defined. These concepts have meaning only within this frame of reference and may conflict with the same concepts as defined within another frames of reference. Concepts, therefore, have meaning only within the frame of reference that defines them and these frames of reference are set and limited by the basic assumptions which it holds to be true.

Duffy (1992) and others, including Novak (1984), recognize this same point when they state that:

In brief, we will argue that abstracting concepts and strategies from the theoretical position that spawned them strips them of their meaning. Theoretical concepts emerge in the context of certain epistemological assumptions which underlie the theory.

It is for this reason that constructivism views knowledge as being an invention of the human mind rather than a discovery of some external form of reality, a position that would be held within the domain of a positivistic epistemology.

For some forty-years, instructional design has evolved from a domain of positivistic, objectivists epistemology. Given the basic assumptions of positivism it is understandable that the position would advocate an arrangement of prescribed set of learning activities for all learners, the achievement of specified outcomes, and an objective form of outcome evaluation. Within this context, it is not surprising, for example, that learning is defined as a change in behavior. However, given the basic assumptions of constructivism, learning is to be defined in a very different way. Similarly, how we arrange for learning to take place and how it is to be evaluated would all vary from the traditional model of design.

It is also the practice in the present instructional design literature to accept the positivistic position as a standard, rather than an alternative, for critique of constructivism and other approaches. Such a bias mindset, in the name of positivism, results in a false judgment about the appropriateness of constructivism as a suitable bases for generating satisfactory designs of instruction. As a epistemological perspective that stands on its own assumptions, constructivism should generate instructional arrangement that are consistent with those assumptions. As Duffy and Jonassen (1992) again points out:

Instructional design and development must be based upon some theory of learning and/or cognition; effective design is possible only if the developer has developed reflexive awareness of the theoretical basis underlying the design.

This statement make clear that the components of instructional design and the arrangement of these components need to be generated out of the theoretical frame of reference of constructivism without reference to positivism or other empirical positions. Nor should instructional arrangements generated from constructivism be in anyway influenced by the position of positivism. Constructivism has gained enough support to rout positivists positions from their dominate role in instructional design.

This paper defines the limits between these two epistemological perspectives and views concepts from each perspective within its theoretical framework in regard to learning, instruction, motivation and teaching.

## CONSTRUCTIVISM

### WHAT IT IS

Constructivism sets out to separate itself from positivism and empiricism.

Nothing positive can be said about ultimate reality, other than it exists.

It has its origins in the Piagetian Kantian theory of mind.

A post-positivist philosophy of science.

The new philosophy of science.

Epistemological commitments of constructivism view knowledge as personally and socially constructed.

Science as knowledge is an intellectual construct.

### WHAT IT IS NOT

#### KNOWLEDGE

The cherished tenets of positivism the possibility of impartial knowledge, the possibility of sensory knowledge freed from theoretical assumptions, the uniqueness of science as a way of knowing, the inductivist view of theory development, the goal of having mind be a mirror of nature.

The objects of perception are sense impressions generated by material objects.

Scientific knowledge provides a picture of the world that corresponds to an absolute reality.

Empiricists epistemology formulates knowledge in terms of a subject looking at an object and asking how well what they see reflects the nature or essence of the object.

Knowledge is passively received.

The laws of nature are merely the result of human activity.

Although we may assume the existence of an external world we do not have access to it.

Science as public knowledge is not a discovery as a carefully checked construction.

There is no great book of nature that can be consulted in order to check if the models or theories correspond to an ontological reality.

Truth is a viable construct truth is viability.

Viability is a form of consensual domain.

A way of thinking is "adequate" it does what we expect of it, or it does not.

We construct our understanding through our experiences.

Knowledge is a construction and invention of the human mind

Cognition is the discovery of ontological reality.

Coming to know is a discovery of an independent pre-existing, world outside the mind of the knower.

The objects of perception are sense impressions generated by material objects.

Knowledge in the objective sense is totally independent of any body's belief, or disposition to assent, or to assert or to act.

Truth is describing absolute reality.

Knowledge is a discovery of external reality.

## LEARNING

Learning is a constructive activity that students themselves have to carry out. Children acquire knowledge by internalizing it from the outside.

Meaning is created by the learner as an active processor of information. Learning is transmitting knowledge to a passive learner.

The learner elaborates upon and interprets the given information. Learning is a change in behavior.

Learning for students is how to solve problems.

Students may take unexpected and unconventional paths to a solution that is quite viable.

The child acquires knowledge by constructing it from the inside in interaction with its environment.

Knowledge is always a result of a constructive activity.

## TEACHING

Negotiating construction of meaning and understanding.

Transmitting information.

Provide a content for learning that supports both autonomy relatedness.

Teaching in terms of sensory input provided by the teacher.

Stress is on dialogue, conversation, argument, and justification of student and teacher opinions in a social setting.

Teaching is pouring curriculum into passive minds.

Act as disturber of equilibrium.

Encourage the strategic exploration of errors as learners apply and manipulate knowledge.

Errors are treated as ability to produce "right" answers as quantitative assessment of performance.

Constructivist teachers can never justify what they teach by claiming that it is "true".

What they can claim is that derived from certain conventional operations.

You activate students' minds to construct knowledge by letting struggle with problems of their own choice.

Teachers must show the student what they consider inadequate, and how it does not work.

Teachers create, synthesize, and interpret information.

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## Biography

Rogers McAvoy received his Ph.D. from Indiana University. he has been a professor of Educational Psychology at West Virginia University since 1961. He has taught and done research in areas of learning and instruction. He is now professor emeritus at West Virginia University.

Christina Paporozzi completed her degrees at the University of Oklahoma, the University of West Florida, and a Master's degree at West Virginia University. She has taught ten years in public schools and is now a Doctoral student in Curriculum and Instruction at West Virginia University.