

What Is Constructivism?

(Attributes)

An Historical Perspective

For the past 50 years, education has been dominated by approaches to teaching and learning that reflect the following assumptions (Feden 1994, p. 19):

- C Learning is the process of accumulating bits of information and isolated skills.
- C The teacher's primary responsibility is to transfer knowledge directly to students.
- C The process of learning and teaching focuses primarily on the interactions between the teacher and individual students.

In this tradition, the teacher transmits information that the learner receives. Teaching practices focus on lecture as a means of conveying information and on the traditional paper/pencil, multiple choice types of assessment (Allenspach et al. 1996). Learning emphasis is on propositional knowledge—knowledge “that” (facts, assertions, concepts, and propositions). The objectivist philosophy, described by Jonassen (1991), reflects these assumptions for knowledge transfer. Objectivists believe that there is reliable knowledge about the world that teachers must transmit and that learners must replicate this knowledge in their thinking (Murphy 1997d).

Behaviorists also support this transmission theory, but focus on changes in behavior as well as mental state. Behaviorists contend that learning involves the changing or conditioning of observable behavior that occurs “as a result of selective reinforcement of an individual's response to events (stimuli) that occur in the environment” (ibid.). Learning emphasis is on procedural knowledge—knowing “how” (techniques, skills, and abilities). “Performance criteria, behavioral objectives, and the testing of students' learning through the use of competency-based programs and standardized testing all derive from proceduralism” (Manus 1996, p. 313).

Cognitive theorists, although recognizing the value of these learning mechanisms, stress the role of thinking in the learning process—the importance of knowing “why.” They depict learning as a

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process in which learners become active participants, drawing upon their personal experiences and their interaction with others to construct new understandings and knowledge. They regard the outcomes of successful learning as understanding, as well as knowledge and skillful performance. Interests, values, and attitudes are recognized as important parts of learning as they provide motivation for learning. “Dispositions determine whether an individual values a particular form of knowledge enough to be willing to participate in the effortful activity required to secure and then utilize that knowledge” (Billett 1996, pp. 143-144).

In traditional approaches to teaching and learning, textbooks and lecture provide the truth; there is little room for questioning, independent thought, or learner interaction (Murphy 1997d). Cognitive theorists believe that the role of the teacher is to provide learners with opportunities and incentives to learn, “holding that among other things—

- C all learning, except for simple rote memorization, requires the learner to actively construct meaning;
- C students’ prior understandings and thoughts about a topic or concept before instruction exert a tremendous influence on what they learn during instruction;
- C the teacher’s primary goal is to generate a change in the learner’s cognitive structure or way of viewing and organizing the world;
- C learning in cooperation with others is an important source of motivation, support, modeling, and coaching” (Feden 1994, p. 19).

The constructivist theory of learning supports this cognitive pedagogy, proposing that humans have an innate sense of the world and that it is this domain that allows them to move from passive observers to active learners.

A Philosophical View

Constructivism is a theory about how people learn. Based on the work of developmental psychologists, constructivism contends that people construct meaning through their interpretive interactions with and experiences in their social environments. It presumes that prior knowledge and experiences play a significant role in learning and form the basis for subsequent actions. It focuses the learner’s

attention on the “why” of learning and opens the door to critical thinking and intellectual development (Manus 1996).

Piaget, a Swiss psychologist, describes knowledge development from a holistic and cognitive perspective, emphasizing that there are many channels one uses to construct understanding, e.g., reading, listening, exploring, and experiencing. Vygotsky, a Russian psychologist, introduces the social and cultural influences on learning and emphasizes their role in the construction of knowledge. Vygotsky’s (1978) social constructivism model stresses the importance of learning in context—constructing understanding through interactions with others in the social environments in which knowledge is to be applied.

Three primary propositions that characterize constructivism from a cognitive and social viewpoint are presented by Savery and Duffy (1995):

1. Cognition occurs as people share their understandings with each other and test the degree to which they are compatible.
2. The goal or purpose of investigation influences what is learned and what experiences the learner draws upon to construct new understandings.
3. Knowledge evolves through social negotiation, either independently or in collaborative groups. Alternative views and additional information enable learners to test the viability of understandings and to build new propositions that are compatible with those understandings.

A Model for Practice

Current research in teaching and learning supports the constructivist perspective, which has gained favor among educators. Evolving from the work of Piaget, Vygotsky, and others, constructivism reflects a paradigm shift from a teacher-centered pedagogy based on behaviorism to a learner-centered educational approach based on cognitive theory (Gagnon and Collay 1997).

“Behaviorist epistemology focuses on intelligence, domains of objectives, levels of knowledge, and reinforcement. Constructivist epistemology assumes that learners construct their own knowledge on the basis of interaction with their environment. Four epistemological assumptions are at the heart of what we refer to as ‘constructivist learning’:

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1. Knowledge is *physically* constructed by learners who are involved in active learning.
2. Knowledge is *symbolically* constructed by learners who are making their own representations of action.
3. Knowledge is *socially* constructed by learners who convey their meaning making to others.
4. Knowledge is *theoretically* constructed by learners who try to explain things they don't completely understand." (ibid.)

In constructivism, the focus of teaching is on the empowerment of the learner. The teacher's role is to engage learners in the discovery of knowledge and provide them opportunities to reflect upon and test theories through real-world applications of knowledge. The constructivist approach to teaching and learning moves learners away from the rote memorization of facts to metacognition and self-evaluation. It "promotes an 'examined life' and encourages the critical reflection of values, beliefs, and assumptions" (Hoskins 1995, p. 2).

In a workplace where businesses have become performance driven and jobs and tasks have become integrated, great emphasis is placed on collaboration, teamwork, and interpersonal communication skills. Work activities are socially shared; work is performed in "social systems in which what one person is able to do depends fundamentally on what others do . . . actions are intimately connected with things and events" (Berryman 1990, pp. 11-12).

Classroom activities, however, are not consistent with these realities. In the classroom, activities typically are individually performed and judged on the basis of each individual's performance. Activities are detached from meaningful context and from real-life situations and communities of practice. To prepare students for work in an increasingly participatory workplace, learning must be connected to the social environment in which it is to be applied.

Vocational educators have long recognized the importance of connecting school to work. Billett (1996) refers to this in his reflections on the importance of social origins of knowledge in the construction of vocational knowledge. He notes that knowledge and concepts of expert performance are situated in the circumstances in which they are acquired and that the goals for vocational practices are shaped by practices of the community in which the knowledge is used. Magnet schools, for example, have been organized for the explicit purpose of providing students with meaningful activities that reflect business, performing arts, science, and other activities of the real world (Berryman 1990).

Constructivist learning environments offer the potential for locating learning in the context of real-life situations and problems. They offer a rationale for curriculum integration that connects learning with the workplace. Learning is facilitated through the design of classroom activities that guide students to work collaboratively with others, set their own sequences and pace of work, and actively engage in problem solving, critical thinking, and negotiation. It is this domain that allows learners to move from passive observers to active learners who “construct knowledge by integrating new information and experiences into what they have previously come to understand, revising and reinterpreting old knowledge in order to reconcile it with the new” (Kerka 1997a, p. 1).

Terms

Behaviorist.....	equates successful learning with behavioral change; information is transmitted by the teacher, replicated by the learner
Cognitive theorist....	equates successful learning as understanding and skill performance; is learner centered
Constructivism.....	the theory that people learn by constructing meaning and through interpretative interactions with and experiences in the environment
Dispositions.....	interests, values, and attitudes
Epistemology.....	the division of philosophy that investigates the nature and origin of knowledge
Objectivist.....	equates successful learning with the acquisition of knowledge transmitted by the teacher; requires a change in learner’s mental state
Procedural knowledge.....	techniques, skills, abilities (knowledge of <i>how to</i>)
Propositional knowledge.....	facts, assertion, concepts, propositions (knowledge <i>that</i>)

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Questions for Reflection and Discussion

1. What is significant about the different philosophical approaches to teaching and learning, e.g., objectivism, behavioralism, and constructivism?
2. How are differences between the behaviorist philosophy and cognitive theory reflected in classroom teaching practices?
3. In what way could the knowledge constructed by one group be contested by another group?
4. How is truth determined from a constructivist viewpoint?
5. In what way does constructivism promote reflection?
6. What life experiences have contributed to your personal construction of knowledge about a topic or issue? What was the process of your learning?