

# CONSTRUCTIVISM AND ITS STRANDS

## (1) Introduction

In the constructivist perspective, learning is a process of construction of knowledge. A child constructs his/her own knowledge while engaged in the process of learning. The engagement of learners through relevant activities, can further facilitate in the construction of mental images of the relationships (cause and effect). Allowing students to ask questions that requires them to relate what they are observing in school and out side the school. 'Intelligent guessing' must be encouraged as a valid pedagogic tool. Quite often children gains ideas from every day experiences of because of their exposure to media, but they are not quite ready to articulate it in ways that teachers or parents may not appreciate. Active engagement should involve enquiry, exploration, questioning, debates, application and reflection and creation of ideas/positions. Remember that what is challenging for a particular age group becomes easy and under standing for the other age group, and may be remote and uninteresting to another stage. On the name of uniformity and objectivity we teachers and parents should not sacrifice the flexibility and creativity of the children.

## (2) Types of Constructivism

Constructivism is not a unitary theoretical position; rather, it is a continuum. The assumptions that underlie this continuum vary along several dimensions and have resulted in the definition and support for multiple types of constructivism. Typically, this continuum is divided into three broad categories: Cognitive Constructivism, Social Constructivism, and Radical Constructivism. Von Glasersfeld (1984, 1990) proposed three essential epistemological tenets of constructivism to which a fourth has been added in light of recent writings.

1. Knowledge is not passively accumulated, but rather, is the result of active cognizing by the individual;
2. Cognition is an adaptive process that functions to make an individual's behavior more viable given a particular environment;
3. Cognition organizes and makes sense of one's experience, and is not a process to render an accurate representation of reality; and
4. Knowing has roots in both biological/neurological construction, and social, cultural, and language based interactions (Dewey, 1916/1980; Garrison, 1997, 1998; Gergen, 1995; Maturana & Varela, 1992).

## **2.1 *Cognitive Constructivism:***

Cognitive constructivism represents one end, or extreme, of the constructivist continuum and is typically associated with information processing and its reliance on the component processes of cognition. While emerging from the four, previously mentioned, epistemological tenets, and cognitive constructivism only emphasizes the first two tenets, that is, that knowledge acquisition is an adaptive process and results from active cognizing by the individual learner. These particular epistemological emphases lead to defining principles that maintain the external nature of knowledge and the belief that an independent reality exists and is knowable to the individual. Knowledge then, from the cognitive constructivist position, is the result of the accurate internalization and (re)construction of external reality. The results of this internalization process are cognitive processes and structures that accurately correspond to processes and structures that exist in the real world. This claim, that reality is knowable to the individual, differentiates cognitive constructivism from both social and radical constructivism.

## **2.2 *Radical constructivism:***

Radical constructivism represents the opposite end of the constructivist continuum from cognitive constructivism. Radical constructivism fully embraces the first three epistemological tenets, that is, that knowledge acquisition is an adaptive process that results from active cognizing by the individual learner, rendering an experientially based mind, not a mind that reflects some external reality. In addition, there is a current movement within radical constructivism to more fully accept the fourth epistemological tenet, thus recognizing social interactions as a source of knowledge.

The adaptive nature of knowledge underscores that knowledge is not objective "truth," that is, internal knowledge does not match external reality, but rather is a viable model of experience (von Glasersfeld, 1995). These viable models are created within an individual, influenced by the context within which an activity was experienced, and relative to the accomplishment of a particular goal. Thus, according to Staver (1995), "knowledge is knowledge of the knower, not knowledge of the external world; improving knowledge means improving its viability or fit in, but not match with, an external world" (p. 1126).

### 2.3 *Social constructivism:*

Social constructivism lies somewhere between the transmission of knowable reality of the cognitive constructivists, and the construction of a personal and coherent reality of the radical constructivists. Social constructivism, unlike cognitive and radical constructivism, emphasizes all four of the previously mentioned epistemological tenets. These particular epistemological emphases lead to defining principles that maintain the social nature of knowledge, and the belief that knowledge is the result of social interaction and language usage, and thus is a shared, rather than an individual, experience (Prawatt & Floden, 1994). In addition, this social interaction always occurs within a socio-cultural context, resulting in knowledge that is bound to a specific time and place (Gergen, 1995; Vygotsky, 1978). This position is exemplified by Bakhtin (1984), "truth is not to be found inside the head of an individual person, it is born between people collectively searching for truth, in the process of their dialogic interaction". Truth, in this case, is neither the objective reality of the cognitive constructivists nor the experiential reality of the radical constructivist, but rather is a socially constructed and agreed upon truth resulting from "co-participation in cultural practices".

Like radical constructivism, social constructivism would be considered a "strong" form of constructivism, emphasizing all four of the epistemological tenets. However, social constructivists generally downplay the mental construction of knowledge (not because social constructivists do not believe in mental construction but because it is seen as relatively trivial) and emphasize the co-construction of meaning within a social activity. In this sense, social constructivism is more concerned with meaning than structure.

### (3) **Constructivist Pedagogy**

Cognitive constructivists emphasize accurate mental constructions of reality. Radical constructivists emphasize the construction of a coherent experiential reality. Social constructivists emphasize the construction of an agreed-upon, socially constructed reality. Constructivist pedagogy consists following elements of common pedagogy:

- (i) Learning should take place in authentic and real-world environments.
- (ii) Learning should involve social negotiation and mediation.
- (iii) Content and skills should be made relevant to the learner
- (iv) Content and skills should be understood within the framework of the learner's prior knowledge.

- (v) Students should be assessed formatively, serving to inform future learning experiences.
- (vi) Students should be encouraged to become self-regulatory, self-mediated, and self-aware.
- (vii) Teachers serve primarily as guides and facilitators of learning, not instructors.
- (viii) Teachers should provide for and encourage multiple perspectives and representations of content.

#### (4) **Constructivist Learning**

National Curriculum Frameworks (2005) envisages that following processes are involved in dealing with the academic activities in the classroom situations:

- (i) Observation
  - (ii) Contextualization
  - (iii) Cognitive Apprenticeship
  - (iv) Collaboration
  - (v) Interpretation
  - (vi) Multiple Interpretations
  - (vi) Multiple Manifestations
- (i) **Observation:** Learners watch the scenes enacted. They make notes of the key events or behaviour or activities.
  - (ii) **Contextualization:** Learners relate their analysis to the theme of the text with illustration.
  - (iii) **Cognitive Apprenticeship:** By using a scene enacted the teacher models how to integrate story/events and illustrations of the background materials.
  - (iv) **Collaboration:** In this process, learner works in small groups to generate interpretation while the teacher suggest/guide them as they proceed further. Here they learn to live and work together.
  - (v) **Interpretation/Construction:** learners analysis and generate their won interpretations of the activities/stories/illustrations.
  - (vi) **Multiple Interpretations:** In this process, learners provide explanation and define their ideas or hypotheses by using their analysis and text both within and between groups.
  - (vii) **Multiple Manifestations:** By going back and forth through the process and relating each contextual background on various events and the behaviour related to subject, the learners notice that the general principles embedded in what they are doing become manifested. Using the text, background illustrations and their own reflections, the learners see how the same characters and themes can be manifested in several ways.

## **(5) Suggestions for the teachers implementing Constructivist format**

The following procedures for teachers while implementing a Constructivist format are suggested by Yager (1991):

- \* Accept and encourage student initiation of ideas and use student thinking, experiences and interests to drive lessons.
- \* Promote student leadership, collaboration, location of information and taking actions as a result of the learning process.
- \* Encourage the use of alternative sources for information both from written materials and experts.
- \* Encourage students to suggest causes for events and situations and encourage them to predict consequences.
- \* Seek student ideas before presenting teacher ideas or before studying ideas from textbooks or other resources.
- \* Encourage students to challenge each other's conceptualizations and ideas and give adequate time for reflection and analysis; respect and use all ideas that students generate.
- \* Encourage self-analysis, collection of real evidence to support ideas and reformulation of ideas in light of new knowledge.
- \* Use local resources as original sources of information that can be used in problem resolution and involve students in seeking information that can be applied in solving real-life problems.
- \* Extend learning beyond class period, classroom and the school.
- \* Encourage self-evaluation among students.

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## Abstract

Constructivism is a theory of knowledge with roots in philosophy, psychology, and cybernetics. It asserts two main principles whose application has far-reaching consequences for the study of cognitive development and learning as well as for the practice of teaching, psycho-therapy, and interpersonal management in general. The essential core of constructivism is that learners actively construct their own knowledge and meaning from their experiences. Constructivism is not a unitary theoretical position; rather, it is a continuum. The assumptions that underlie this continuum vary along several dimensions and have resulted in the definition and support for multiple types of constructivism. Typically, this continuum is divided into three broad categories: Cognitive Constructivism, Social Constructivism, and Radical Constructivism. Cognitive constructivists emphasize accurate mental constructions of reality. Radical constructivists emphasize the construction of a coherent experiential reality. Social constructivists emphasize the construction of an agreed-upon, socially constructed reality.

National Curriculum Frameworks (2005) envisages that following processes are involved in dealing with the academic activities in the classroom situations:

- (i) Observation
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- (v) Interpretation
- (vi) Multiple Interpretations
- (vi) Multiple Manifestations

Constructivist pedagogy should consists following elements of common pedagogy:

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