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CONSTRUCTIVIST APPROACH: A WAY OF LEARNING

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Abstract

Constructivist approach of learning is a reaction against the traditional education system, where students passively receive information from teacher or authority. Constructivist approach is based on the belief that learning occurs as learners are actively involved in the process of meaning making and knowledge construction as opposed to passively receiving information. Learners are the makers of meaning and knowledge. Constructivist learning theory says that all knowledge is constructed from a base of prior knowledge. Children are not blank slate and knowledge cannot be imparted without the child making sense of it according to his or her current conceptions. In constructivist learning classroom environment is democratic, comfortable and non-threatening. The construction of knowledge is done through reciprocal student-to-student or student-to-teacher interaction. All students are actively engaged in the process of meaning making. Teacher acts as a facilitator.

Keywords: Constructivist learning approach, accommodation, assimilation, zone of proximal development

It is the supreme art of the teacher to awaken joy in creative expression and knowledge.

–Albert Einstein

John Dewey reacted against the traditional educational framework of memorisation and recitation.“Education is not preparation for life, it is life itself.” – John Dewey. Like Rousseau, Dewey was responding to the need of restructuring education to meet the changing needs of society. Rousseau argued that the senses were the basis of the intellectual development and that the child's interaction with the environment was the basis for constructing understanding (Emile, page 1955,). Thus Rousseau emphasised learning by doingwith the teachers' role being that of presenting problems that would stimulate curiosity and promote learning. Rousseau's views were in direct opposition to the existing educational framework in which the focus was on study and memorisation of the classics. The curriculumand evaluation standard for school education, National Curriculum Framework (NCF), prepared by working group of NCERT (2008), does also highlight the importance of introducing constructivist approach in education system. Constructivist theorists (Dewey, Piaget and Vygotsky among others), challenged Platonic and all subsequent realistic views of epistemology. They recognize that there is no such thing as knowledge "out there" independent of the knower, but only knowledge we construct for ourselves as we learn. Learning is not understanding the "true" nature of things, nor is it (as Plato suggested) remembering dimly perceived perfect ideas, but rather a personal and social construction of meaning out of the bewildering array of sensations which have no order or structure besides the explanations (and I stress the plural) which we fabricate for them. (John Dewey,1938)Constructivism implies that learners are encouraged to construct their own knowledge instead of copying it from an authority, be it a book or a teacher or any other source. The term refers to the idea that learners construct knowledge for themselves---each learner individually (and socially) construct meaning---as he or she learns. Constructing meaning is learning; there is no other kind.The situation in which individuals perceive, interpret, and explain the same object differently despite the sensation can be approached to the constructivist approach. The meaning of constructivism varies according to one's perspective

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and position. Constructivism, to begin with, is not a social or educational theory; it is both a scientific and meta theory which defines the possibility and limitations of daily life theories in the formation of humanity. Constructivists are observers in a way observing reality being formed in daily life or in science. Some of the approaches on this particular issue can be found below: (Jones &Brader-Araje, 2002)"It is assumed that learners have to construct their own knowledge-individually and collectively. Each learner has a tool kit of concepts and skills with which he or she must construct knowledge to solve problems presented by the environment. The role of the community – other learners and teacher – is to provide the setting, pose the challenges, and offer the support that will encourage mathematical construction." (Davis, Maher, Noddings, 1990 p.3)"Constructivism is not a theory about teaching… it is a theory about knowledge and learning… the theory defines knowledge as temporary, developmental, socially and culturally mediated and thus, non-objective." (Brooks & Brooks, 1993 p.vii)"The central principles of this approach are that learners can only make sense of new situations in terms of their existing understanding. Learning involves an active process in which learners construct meaning by linking new ideas with their existing knowledge." (Naylor & Keogh, 1999, p.93)*"(C)onstructivists of different persuasion (hold a) commitment to the idea that the development of understanding requires active engagement on the part of the learner." (Jenkins, 2000, p.601)*One of the common threads of constructivism that runs across all these definitions is the idea that development of understanding requires the learners to actively engage in meaning-making. According to Glassersfeld(1992) "knowledge is not passively received but built up by the cognizing subject". Thus, constructivists shift the focus from knowledge as a product to knowing as process. The common core of constructivist theory is that we do not find knowledge, we construct it(Boghossion, 2006). From this point of view, the task of educator is not to dispense knowledge but to provide students with opportunities and incentives to build it up (von Glassersfield,2005)Constructivism is a philosophy of learning founded on the premise that, by reflecting on our experiences we construct our own understanding of the world we live in. Eachof us generate our own "rules" and "mental models" which we use to make sense of our experiences. Learning, therefore, is simply the process of adjusting our mental models to accommodate new experiences. Constructivist teaching methods are based on constructivist learning theory. Along with John Dewey, Jean Piaget researched childhood development and education. Both Dewey and Piaget were very influential in the development if informal education. Dewey's idea of influential education suggest that education must engage with enlarged experience and the exploration of thinking and reflection is associated with the role of educators. Piaget's role in constructivist teaching suggest that we learn by expanding our knowledge by experiences which were generated through play from infancy to adulthood which are necessary for learning.Their theories are now encompassed in the broader movement of progressive education. Constructivist learning theory says that all knowledge is constructed from a base of prior knowledge. Children are not a blank slate and knowledge cannot be imparted without the child making sense of it according to his or her current conceptions. Therefore, children learn best when they are allowed to construct personal understanding based on experiencing things and reflecting on those experiences. Following concepts are considered as central to the constructivist instructional design (Wilsom & Cole, 1991)

1. learning is embedded in a rich authentic problem-solving environment;
2. Authentic versus academic contexts for learning are provided;
3. Provisions for learner control are incorporated;
4. Errors are used as a mechanism to provide feedback on learners'understanding; and
5. Learning is embedded in social experience.

Constructivism is an epistemology, a learning or meaning making theory that offers an explanation of nature of knowledge and how human beings learn. The real understanding is only constructed based on learners' previous experience and background. Jean Piaget articulated mechanisms by which knowledge is internalised by learners. He suggested that through the processes of accommodation and assimilation, individuals construct new knowledge from their

experiences. When individuals assimilate, they incorporate the new experience into an already existing framework without changing that framework. This may occur when individuals' experiences are aligned with their internal representation of the world, but may also occur as a failure to change a faulty understanding; for example, they maynot notice events, may misunderstand input from others, or may decide that an event is a fluke and is therefore unimportant as information about the world. In contrast, when individuals' experiences contradict their internal representations, they may change their perceptions if the experiences to fit their internal representations.

According to the theory, accommodation is the process of reframing one's mental representation of the external world to fit new experiences. Accommodation can be understood as the mechanism by which failure leads to learning: when we act on the expectation that the world operates in one way and it violates our expectations, we often fail, but accommodating this new experience and reframing our model of the way the world works, we learn from the experience of failure, or others' failure.

Russian psychologist Lev Vygotsky's (1896-1934) relevance to constructivism derives from his theories about language, thought, and their mediation by society. Vygotsky held the position that the child gradually internalises external and social activities, including communication, with more competent others. Although social speech is internalised in adulthood(it becomes thinking), Vygotsky contended that it still preserves its intrinsic collaborative character. In his experiments, Vygotsky studied the difference between the child's reasoning when working independently versus reasoning when working with a competent person. Vygotsky (1978) defines the zone of proximal development as "the distance between the actual developmental level of a child as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers".

Overview of constructivist classroom

In the constructivist classroom, the focus tends to shift from the teacher to the students. The classroom is no longer a place where the teacher ("expert") pours knowledge into passive students, who wait like empty vessels to be filled. In the constructivist model, the students are urged to be actively involved in their own process of learning.

In the constructivist classroom, both teacher and students think of knowledge as a dynamic, ever-changing view of the world we live in and the ability to successfully stretch and explore that view – not as inert factoids to be memorized.

Key assumptions of this perspective include:

1 What the student currently believes, whether correct or incorrect, is important.
2 Despite having the same learning experience, each individual will base their learning on the understanding and meaning personal to them.
3 Understanding or constructing a meaning is an active and continuous process.
4 Learning may involve some conceptual changes.
5 When students construct a new meaning, they may not believe it but may give it provisional acceptance or even rejection.
6 Learning is an active, not a passive, process and depends on the students taking responsibility to learn.

The main activity in a constructivist classroom is solving problems. Students use inquiry methods to ask questions investigate a topic, and use a variety of resources to find solutions and answers. As students explore the topic, they draw conclusions, and, as exploration continues, they revisit those conclusions. Exploration of questions leads to more questions. For Vygotsky, culture gives the child the cognitive tools needed for development. Adults in the learner's environment are conduits for the tools of the culture, which include language, cultural history, social context, and more recently, electronic forms of information access.

In constructivist classrooms collaborative learning is a process of peer interaction that is mediated and structured by the teacher. Discussions can be promoted by the presentation of specific concepts, problems or scenarios, and is guided by means of effectively directed questions, the introduction and clarification of concepts and information, and references to previously learned material. Constructivist teacher do not take the role of the "sage on the stage." Instead, teachers act as a "guide

on the side" providing students with opportunities to test the adequacy of their current understandings.

Characteristics of constructivist learning

1 Multiple perspectives and representations of concepts and content are presented and encouraged.
2 Goals and objectives are derived by the students or in negotiation with the teacher or system.
3. Teacher serve in the role of guides, mentors, coaches, tutors and facilitators.
4. Activities, opportunities, tools and environments are provided to encourage meta cognition, self –analysis- regulation, -reflection and awareness.
5 The student plays a central role in mediating and controlling learning.
6 Learning situations, environments, skills, content and tasks are relevant, realistic and authentic and represent the natural complexities of the 'real world'.
7 Primary sources of data are used in order to ensure authenticity and real world complexity.
8 Knowledge construction and not reproduction is emphasised.
9 This construction takes place in individual contexts and through social negotiation, collaboration and experience.
10 The learner's previous knowledge construction beliefs and attitudes are considered in the knowledge construction process.
11 Problem –solving, higher –order thinking skills and deep understanding are emphasized.
12 Errors provide the opportunity for insight into students' previous knowledge constructions.
13 Exploration is a favoured approach in order to encourage students to seek knowledge independently and to manage the pursuit of their goals.
14 Learners are provided with the opportunity for apprenticeship learning in which there is an increasing complexity of tasks, skills and knowledge acquisition.
15 Knowledge complexity is reflected in an emphasis on conceptual interrelatedness and interdisciplinary learning.
16 Collaborative and cooperative learning are favoured in order to expose the learner to alternative viewpoints.
17 Scaffolding is facilitated to help students perform just beyond the limits of their ability.

Assessment is authentic and interwoven with teaching.

The following aspects are often encouraged and integrated into the classroom setting:

- The classroom environment is comfortable and non-threatening
- The construction of knowledge is done through reciprocal student-to-student or student-to-teacher interaction
- Emphasis is on the learning process by actively engaging in activities
- Each attempt of constructivism is an opportunity for:
  - Experimentation
  - Risk
  - Challenge

The search for understanding motivates students to learn. When students want to know more about an idea, a topic, or an entire discipline, they put cognitive energy into classroom investigation discussions and study more on their own. We have identified five central tenets of constructivism (Grennon Brooks & Brooks, 1993).

- First, constructivist teachers seek and value students' points of view. Knowing what students think about concepts helps teachers formulate classroom lessons and differentiate instruction on the basis of students' needs and interests.
- Second, constructivist teachers structure lessons to challenge students' suppositions. All students, whether they are 6 or 16 or 60, come to the classroom with life experiences that shape their views about how their worlds work. When educators permit students to construct knowledge that challenges their current suppositions, learning occurs. Only through asking students what they think they know and why they think they know it are we and they able to confront their suppositions.
- Third, constructivist teachers recognize that students must attach relevance to the curriculum. As students see relevance in their daily activities, their interest in learning grows.
- Fourth, constructivist teachers structure

lessons around big ideas, not small bits of information. Exposing students to wholes first helps them determine the relevant parts as they refine their understandings of the wholes.

- Finally, constructivist teachers assess student learning in the context of the daily classroom investigations, not as separate events. Students demonstrate their knowledge every day in a variety of ways. Defining understanding as only that which is capable of being measured by paper-and-pencil assessments administered under strict security perpetuates false and counterproductive myths about academia, intelligence, creativity, accountability, and knowledge.

CONCLUSION

Traditional teaching is the process of transmission of knowledge from teacher to student. Students passively receive information provided by the teacher. This teaching method hinders the development of students' active and creative abilities. Constructivism is a approach of learning, according to which students are active constructors of knowledge. Constructivist paradigm call for a change in classroom culture, attitudes, believes and practices. Constructivism shifts emphasis from teaching to learning, focuses on knowledge construction not on knowledge reproduction. Constructivism provides for such classroom environment where debates, cross-questioning, enquiry finds its place that leads to growth and development of learner which ultimately tends to produce empowered citizen of a democratic country.

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