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‘Constructivism in Teaching and Learning’

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Introduction:

Constructivism is a theory of knowledge with roots in philosophy, psychology, and cybernetics. It asserts two main principles

- 1) Knowledge is not passively received but actively built up by the cognizing subject.
- 2) The function of cognition is adaptive and serves the organization of the experimental world, not the discovery of ontological reality.

Constructivism is basically a theory based on observation and scientific study about how people learn. It says that people construct their own understanding and knowledge of the world, through experiencing and knowledge of the world, through experiencing things and reflecting on those experiences in the classroom, the constructivist view of learning can point towards a number of different teaching practices. In the most general sense, it usually means encouraging students to use active techniques (experiments, real world problem solving) to create more knowledge and then to reflect on and talk about what they are doing and how their understanding is changing. The teacher makes sure she understands the student's preexisting conceptions, and guides the activity to address them and then build on them.

Constructivist teachers encourage students to constantly assess how the activity is helping them gain understanding. By questioning themselves and their strategies, students in the constructivist classroom ideally become “expert learners”. This gives them ever-broadening tools to keep learning with a well-planned classroom environment, the students learn How to Learn.

Constructivist teaching is based on the belief that learning occurs as learners are actively involved in a process of meaning passively receiving information. Learners are the makers of meaning and knowledge. Constructivist teaching fosters critical thinking and creates motivated and independent learner.

What is constructivism?

Constructivism draws on the developmental work of piaget (1977) and Kelly (1991) Constructivism is a view of Learning based

On the belief that knowledge isn't a thing that can be simply given by the teacher at the front of the room to students in their desks. Rather, knowledge is constructed by learners through an active, mental process of development, learners are the builders and creators of meanings and knowledge.

Twomey Fosnot (1989) defines Constructivism by reference to four principles : Learning, in an important way, depends on what we already know, new ideas occur as we adapt and change our old ideas, learning involves inventing ideas rather than mechanically accumulating facts, meaningful learning occurs through rethinking old ideas and coming to new conclusions about new ideas which conflict with our old ideas.

A productive, constructivist classroom, then consists of learner-centered, active instruction. In such a classroom, the teacher provides students with experiences that allow them to hypothesize, predict, manipulate, objects, pose questions, research, investigate, imagine and invent. The teacher's role is to facilitate this process.

Constructivist teaching method:-

Constructivist teaching is based on constructivist learning theory. I constructivists suggest that learning is more effective when a student is actively engaged in the learning process rather than attempting to receive knowledge passively. A wide variety of methods claim to be based on constructivist learning theory

One of the primary goals of using constructivist teaching is that students learn how learn by giving them the training to take initiative for their own learning experiences.

According to Audrey Gray, the characterizations of a constructivist classroom are as follows:

- 1) The learners are actively involved.
- 2) The environment is democratic.
- 3) The activities are interactive and student centered.
4. The teacher facilitates a process of learning in which students are encouraged to be responsible and autonomous.

Role of teachers:

In constructivist classroom, the teacher's role is prompt and facilitate discussion. Thus the teacher's main focus should be on guiding students by asking questions that will lead them to develop their own conclusions on the subject.

David Jonassen identified three major roles for facilitators to support students in constructivist learning environments :

- 1) Modeling
- 2) coaching
- 3) Scaffolding

In the constructivist classroom, both, teacher and student's think of knowledge as a dynamic, ever-changing view of the world we live in and the ability to successfully stretch.

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.

Characteristics of constructivist learning and Teaching :-

Jonassen (1991) notes that many educators and cognitive psychologists have applied constructivism to the development of learning environments from these applications, he has isolated a number of design principles.

- 1) create real world environments that employ the context in which learning is relevant.
- 2) Focus on realistic approaches to solving real-world problems.
- 3) Evaluation should serve as a self analysis tool.
- 4) Learning should be internally controlled and mediated by the learner. (pp. 11-12)

Wilson and Cole (1991) provide a description of cognitive teaching model which “embody” constructivist concept from these descriptions, we can isolate some concepts central to constructivist design, teaching and learning.

- 1) Embed learning in a rich authentic problem solving environment.
- 2) provide for authentic versus academic contexts for learning.
- 3) Use errors as a mechanism to provide feedback on learner’s under standing (pp 59-61)

Honebein (1996) describes seven goals for the design of constructivist learning environments:

- 1) provide experience with the knowledge construction process.
- 2) provide experience in and appreciation for multiple perspectives.
- 3) Embed Learning in a realistic and relevant contests.
- 4) encourage ownership and voice in the learning process.
- 5) Embed learning in social experience.
- 6) Encourage the use of multiple modes of representation.
- 7) Encourage self- awareness in the knowledge construction process. P.11.

Conclusion:-

The all research on construction Research suggests that constructivist teaching is an effective way to teach. It encourages active and meaning learning and promotes responsibility and autonomy. Because constructivist teaching is beneficial in achieving desirable educational

goals for students, it is important for teachers to grow professionally towards a constructivist practice.

Constructivism is a theory of knowledge, that humans generate knowledge and meaning from an inter action between their experiences and their ideas. It is influenced a number of disciplines, including psychology, sociology, education and history of science. Jean piaget caused these systems of knowledge schemata.

Constructivism is not a specific pedagogy, educational theory developed by Seymour papert, inspired by constructivist and experimental learning idea of piaget. Piaget's theory of constructivist learning has had a wide ranging impact on learning theories and teaching method in education.

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