Research Paper

Constructivism: A Complete Teaching and Learning Approach

Education

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ABSTRACT Constructivism has a potential for enrichment of cognitive, affective and psychomotor outcomes of learners. Constructivists advocate that education cannot be done simply by the spread of knowledge from the teachers to the learners. Relatively, knowledge is constructed by learners through dynamic and intellectual process of development; learners are the builders and creators of meaningful knowledge. It refers to the idea that learners construct knowledge for themselves. In traditional scenario of education, teacher centered approaches were used in which a teacher transmits information to students who passively listen and acquire facts while during constructivist approach, learner centered approaches are used in which students are actively involved in their learning to reach new understandings, so each learner individually and socially develop their skills to construct meaning as they learn. This new experience facilitates learners to modify their previous meaning about the phenomena, i.e. constructivism is a meaning making process and learning takes place through both individual and social activities. So classroom should be based on constructivist approach of teaching and learning. Contextual approach, experiential learning, and inquiry based learning, problem solving approach, field trips, techno-pedagogy, concept mapping, investigatory approach are the student centered approaches, these approaches are helpful in meaningful learning. If teachers use these approaches according to the necessity of content transaction in classroom, then learning is constructed, active, reflective, collaborative and evolving among learners. Constructivist teaching fosters critical thinking and creates active and motivated learning. A constructivist approach frees teachers to make decisions that will boost and improve learner's development it means constructivist classroom not only benefits learning of students, but it also helps to increase the various ability among learners, such as: problem-solving ability, scientific attitude, fostering creativity, decision power making ability, reflective ability, higher order thinking ability and many more.

Introduction: Constructivism approach of teaching has a long history. It includes theorists like Piaget, Dewey, Montessori, Vygotsky and many more, but these theorists failed to bring educational reforms. The main reason behind it was that they could not relate these to classroom teaching practices. Piaget believed that construction of knowledge is individual and children construct knowledge on the basis of their prior knowledge by adaptation. Another theorist Vygotsky believed that for effective construction of knowledge, social interaction is important. According to Vygotsky individuals construct knowledge in the social and cultural context in which he/she embedded. In the 1980s researchers like Driver, Novak, Posner conducted a number of experiments on classroom constructivism. Empirical data from these research studies revealed that classroom interaction helps in construction of knowledge.

One of the primary goals of using constructivist teaching is that students learn how to learn by giving them the training to take initiative for their own learning experiences. Constructivists like Piaget, Vygotsky and Novak and Posner they all agree on the basic characteristics of constructivism such as

- Learners are actively involved and the environment of classroom is democratic.
- The activities are interactive and student centered.
- The teacher facilitates a process of learning in which students encourage to be responsible and autonomous.
- Learner learning depends on learner's earlier experiences as well as knowledge.
- Learning implies the reorganization of prior conceptual schemas.
- Learning is facilitated by social interaction.

In teacher centered approaches the teacher transmits knowledge to the learners who are considered as passive receivers of knowledge. In contrast to teacher centered approach, it is believed that the teacher is not the transmitter of knowledge but act as facilitator of knowledge for active meaning making process. So in learner centered approach, learner act as an active receiver not passive receiver.

Teacher centered Approaches	learner centered Approaches
Teacher autocracy found	Learners got independency
Teacher act as a main actor	Students are supposed as passive receptors
Fixed as well as rigid curriculum	Flexibility present in curriculum.
Learning material only text books and work books.	In this learning material are textbooks, workbooks including primary sources of material and manipulative materials.
Learning process is based on repetition.	Teaching -learning process is interactive.
Contextual based learning is avoided. Teacher talk is more.	Focuses on Contextual based learning. Teacher-learner interaction is more.
Teacher only empowered in old classroom.	Teacher as well as learner both empowered in constructivist classroom.
Teacher takes all most all decision.	Learners also have the freedom to take decision.
Learner's have no freedom of self reflection.	Learner's have freedom of self reflection.
Teacher act as a transmitter of knowledge. Learner act as passive learner.	Teacher act as a facilitator of knowledge Learner act as active learner.
Product oriented assessment take place. Knowledge is seen as stable.	Process as well as product oriented assessment takes place Knowledge is seen as dynamic.
No concept of cooperative learning.	Concept of cooperative learning in constructivist classroom.

According to NCF (2005), *"much of our school learning is still individual based (although not individualized!). The teacher is seen as transmitting 'knowledge', which is usually confused with information, to children, and organizing experiences in order to help children learn, but interaction with teachers, peers, as well as those who are older and younger can open up many more rich learning possibilities. Learning in the company of others is a process of*

interacting with each other and also through the learning task at hand."

Constructivism is a learning theory describing the process of knowledge construction. Though constructivism is a learning theory, it is the application of what are often referred to as "constructivist practices" (Zemelman, Daniels & Hyde, 1993) in the classroom and elsewhere that provide support for the knowledge construction process. In Learner centered approach the student are urged to actively involve in their process of learning. In this approach, it is not supposed that learner is empty vessel to be filled by teacher. The teacher functions as a facilitator, guide and helper to help student to develop and assess their understanding. When we compare teacher centered approaches and learner centered approaches we can see following significant differences.

From above comparison it is clear that teacher centered approaches emphasize only product where as constructivist approaches emphasize both the process and the product. Constructivist teachers pose questions and problems, and then guide the students to help them find their own answers. For constructivist classroom they may use many techniques and approaches. For example, they may use

- Contextual Learning: In this approach of learning and teaching the previous knowledge of the learner is the raw material for creating the new knowledge. The students are the person who creates new understanding for themselves. The responsibility of teacher is to make connection between new and previous knowledge with the proper use of context. A contextual approach is more helpful to link new knowledge from previous ones. And it is beneficial approach at primary, middle as well as secondary level.
- Experiential Learning: It is a process of learning through experience and is more specifically defined as learning through reflection on doing. It is based on the fact that learning is a process whereby knowledge is created transformation of experience. Concrete experiences, observation, reflection and formulation of new concepts and ideas are the four main step of experiential learning. More emphasis in that type of learning is given on student's critical reflection. It is distinct from rote learning or didactic learning in which learner acts as a passive role.
- Problem Solving: In this approach of teaching and learning, students are the centered; they are the active participants of knowledge creation. It helps to develop cognitive, affective and psychomotor domain of learners. Through this approach learning is more meaningful and permanent because multi senses of learners involve in this approach. In problem solving approach students formulate hypothesis, suggest tentative solutions, conduct experiments, draw generalization and findings. And validate their results.
- Investigatory Approach: In this approach students pose useful questions, planning out investigation, hypothesizing, prediction and evaluation. Students love to debate issues, particularly when the issues affect their own well-being and sense of justice. For this, teachers can work collaboratively on an interdisciplinary approach that will be helpful for understanding the various issues. The teacher not only guides, coaches, suggests but allows students, to experiment and ask question. An important part of the learning process is

that students reflect on, and discuss about their activities. Students can set their goals and means of assessment.

- Concept Mapping: it is a graphical representation, which uses hierarchically to organize a set of concepts, link by means of words in order to develop meaningful sentences. It involves learning about learning i.e. Meta learning. It includes facts, concepts and generalizations. Provide the opportunity for interdisciplinary exploration. In this way, we can make connections between disciplines and different concepts and sub-concepts, it makes learning experiences more authentic and powerful and also useful to detect misconceptions of learners.
- Inquiry Approach: In this approach student poses questions and issues. It also involves problem solving approach. In this approach instructions are principally very closely related to the thinking and its development. In this approach, teachers should provide the opportunity for higher order thinking or we can say that teachers should put efforts for development of higher order thinking skill among their students.
- Techno-pedagogy: With the introduction of web- technology in the field of education, the possibilities are fostering constructivist learning have increased. Mbati Lydia (2013) suggests that use of web technology is ideal for simulation constructivism learning. Techno-pedagogy refers to weaving the techniques of the craft of teaching into the learning environment itself. It requires conscious recognition of the mediated learning environment in order to maximize the ease and clarity in the transmission of information. Web technology, ICT based teaching learning approach, e-Learning and collaborative/co-constructive pedagogies creates the effective learning in classroom. The dynamics of classrooms change when techno-based instructions are part of the regular learning environment. Using collaborative, interactive pedagogies that also foster co-operation appear to lead to effective learning and better teacher/student relationships over time. Technology in classrooms becomes an effective tool when teachers deliberately use them in relation to appropriate and targeted pedagogical practices.
- Field Trips: field trips making the teaching and learning process more effective and fruitful because this allows students to put the concepts and ideas which was discussed in the classroom in a real world context.

Conclusion: Contextual approach, experiential learning, inquiry based learning, problem solving approach, field trips, techno-pedagogy, concept mapping, investigatory approach are the student centered approaches, these approaches are helpful in meaningful learning. If teachers' use this approaches according to the necessity of content transaction in classroom, then learning is constructed, active, reflective, collaborative, and evolving among learners. In nut-shell teachers can make their classroom a constructivist classroom by using their previous knowledge, constructing knowledge uniquely and in multiple ways, learning through action and reflection, provide opportunity to create, interpret and reorganize knowledge, encourage students to think independently,provide logical operation and explanations. By using constructivist approach of learning and teaching, different abilities like, problem-solving ability, scientific attitude, creativity, decision power making ability, reflective ability, higher order thinking ability, critical thinking and retention ability increases among learners.

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