

# CONSTRUCTIVISM IN SCHOOL EDUCATION : AN APPROACH TO IMPROVE QUALITY

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## Context :

School system in India has recently grown in size consistently achieving an enrolment of nearly 20 crore children with 65 lakh teachers spread over 10 lakhs school. Though this quantitative expansion of school education appears to be very impressive but the ultimate goal of quality school education has still remained far from satisfactory. While enrolment attendance and retention have all shown a high upward trend, this cannot be said of the quality of school education. It has been found that majority of our school children do not acquire the basic understanding of language and math skills even by the end of grade V. In the absence of these competencies, children find it difficult to engage with the course content of higher grades. The examination system too fails to capture this fact as it test only for memorization and recall, while learning deficits go on accumulating. Besides, it is also evident from various field reports that macro-inputs in the form of free text book distributions, improved infrastructure, provision of TLM grant and setting up of BRC's & CRC's, though strengthening the system substantially, are not sufficient to bring qualitative improvement in school effectiveness.

In the past, there has been a lot of debate among educators and researchers as to what influence most of the quality of school education. A growing body of evidences suggests that amongst a host of factors, the teaching-learning process that goes into the class-room seems to be the weakest part of the school system. When we look back to our schools, we find that teaching in out class rooms is almost systematized & routinized at all levels from primary to higher secondary level. It encourages listless passivity and rote memory. Not only this, the students today have become more knowledge consumers and not the knowledge constructors. As a result children acquire knowledge in a mechanical way which does not serve the purpose whenever required. There is, therefore, a need to improve the quality of teaching-learning process in our class-rooms if we want to improve the quality of school

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education. In this context, the purpose of the present paper is to analyze the constructivist approach to teaching & learning and to explain how it can work effectively in our class rooms to improve the quality of school education by enhancing pupil's achievement.

### **Theory of Constructivism :**

The word 'construct' and 'construction' have been in use for centuries, but constructivism is relatively new word as far as its usage in educational literature is concerned. It has its roots in philosophy, psychology, sociology, education and cognitive sciences. It has been labeled both as a philosophy of knowledge and psychology of learning that try to answer the questions like 'what knowing is?' 'How one comes to know?' and 'Is knowing a phenomenon of individual mind alone?'

#### **(i) What Knowing is?**

Traditional correspondence theory of knowledge maintains that true knowledge is that which corresponds to reality. It thus believes in mirror like notion of knowledge which looks for a 'match' between knowledge and reality. If knowledge matches with reality then two or more individuals must have similar copies of knowledge in their mind for a particular reality. But in actuality it is not so.

Contrary to this, the theory of constructivism believes that it is almost impossible to judge such correspondence because the same reality is perceived differently by different individuals depending upon their perception. It means one constructs his own view of reality by interpreting his unique perception (Fadnis 1995). It implies that one constructs knowledge and does not simply mirror and reflect reality. To explain further, Glaserfeld (1984) described the act of construction of knowledge as a search for 'fit' rather than 'match' with reality. Thus the inference is that "knowledge is constructed in the mind of learner". It is this difference between the concepts of 'fit' and 'match' that shows the radical difference between constructivist and traditional views of knowledge.

#### **(ii) How one comes to know?**

The theory of constructivism is based on the assumption that all we know of the world are human interpretations of our-experiences with the world. In the view of constructivists, therefore, learning is not only active but constructive process in which the

learner builds his own knowledge by interpreting his experiences. How does it happen?

Human mind is never empty. It already had a repertoire of established knowledge about things or events which go on increasing as we grow. When our mind makes fresh attempts to understand a particular phenomenon or event, we acquire new ideas or experiences which get connected with the previously assimilated knowledge. Here, our mind make choices as to what new ideas to accept and how to fit them into our already established knowledge. It creates tension & chaos in our mind which disturbs our mental equilibrium for a moment. In order to maintain the mental equilibrium, soon our mental faculties start processing the old & new information & experiences and arrange them in a structured order providing a new meaning to the knowledge synthesized. As a result of this synthesis, new knowledge is constructed through cognitive restructuring and mental equilibrium is also regained. Thus, knowledge is what we construct in our mind as our new understanding about the things or events by combining our previously knowledge with the new information. This is called cognitive constructivism which was developed by Jean Piaget, Bruner and Ausubel.

(iii) **Is knowing a phenomenon of individual mind alone?**

Widespread interest of the concept of cognitive constructivism which places more emphasis on individual have led to a debate as how can groups of learners appears to share common knowledge if individuals have tendency to construct their own knowledge (Fadnis 1995). It is now argued that the knowledge cannot be constructed by individual mind alone. Knowledge may also be considered socially constructed by the fact that the ideas & information made available to the human mind are socially collected after some sort of debate amongst people. We all attend seminars & conferences, read each other's articles and collect information. This is a socially collected material which we use to construct knowledge further. Not only this we also discuss our ideas with others to clarify some of the doubts & confusions. This argument lead us to believe that knowledge is also socially constructed even while an individual thinking. This is called social constructivism which was propounded by a Russian Psychologist

Lev Vygotsky. Thus individual mind alone is not capable of knowing, social mind also plays an equally important role in the construction of knowledge.

### **Principles of Learning based on Constructivism :**

The basic idea of constructivism is that the knowledge is constructed in the mind of the learner. On the basis of the ideas underlying in the theory of constructivism, we can now formulate the following principle of learning.

- (i) Learning is a constructive process of building new knowledge and not simply the collection of information from various sources. Each learner individually constructs his own knowledge as he or she learns.
- (ii) Learners build their new understanding by using their previous knowledge and experiences. They already have a repertoire of previously established knowledge which works as a foundation for developing new knowledge.
- (iii) Learning is an interpretive process. Learners construct new knowledge by connecting the current information & experiences with their previous knowledge and interpreting the synthesis of the two. Thus, it is the learner who provides meaning to the new synthesis.
- (iv) Learning is an active process rather than passive. Learners are not passive recipient of the information alone. They remain active throughout the process of knowledge construction.
- (v) Learning is a social activity. In learning we interact with our peers, teachers, family members and experts in the field. Though we construct ourself but we use other's experiences too in building the final knowledge.

### **Educational Implications :**

Constructivism believes that children never like to sit in a desk all day while the teacher lectures them on information rather they would like to learn of their own constructively. The central theme of constructivism, therefore, is that education is about using knowledge to construct new knowledge rather than to acquire information. On the basis of the principles of learning formulated earlier we are now in a position to

derive the following educational implications of the theory of constructivism.

(i) **Understand the Cognitive Process :**

If learning depends on how information is mentally processed to construct new knowledge then children's cognitive processes should be major concern of educators. The aim of education should then be to teach children how to think and not what to think. Teachers must become aware of not only what children learn but also of how they attempt to learn it.

(ii) **Strengthening the Foundation of Past Learning :**

As past learning play an important role in fresh learning, teachers need to take into consideration the child's earlier foundation of learning while planning their future strategy of teaching. Teachers must test and strengthen the children's past learning before presenting the abstract material.

(iii) **Association of Old and New Ideas :**

As children build their new knowledge on their previously established knowledge, teachers should help students learn by showing them as how to relate new ideas with the older ones. This can be done by giving practical examples.

(iv) **Organization and Assimilation of knowledge :**

While learning new things, children like to organize the information so that the same is easily assimilated. Therefore teachers need to present the material in a meaningful way.

(v) **Active Involvement in Knowledge Construction :**

Children are actively involved in the learning process. Therefore, teachers must provide them ample opportunities to use old experiences, and apply current understanding in constructing and reconstructing the knowledge by making their own judgment.

(vi) **Social Participation in Learning :**

Children learn better through social interaction. They need to share their thinking with others to gain new experiences and to clear their doubts & confusion, if any. Teachers must provide them such opportunities in the class room.

## **Constructivist Approach to Teaching & Learning :**

In traditional approach to teaching and learning, a teacher simply delivers information and children silently listen to what is spoken. Child is a passive learner who hardly takes any part in building his knowledge as his mental faculties are not actively involved. He just memorizes the facts and so unable to apply his knowledge in different situations when required. As against this, in constructivist approach to teaching & learning, child is actively involved in learning and so he constructs knowledge himself. When the knowledge is constructed by the child himself, he is always in a better position to apply the same whenever required. This approach may follow the following steps.

### **(i) Structuring of subject matter's knowledge :**

The ultimate aim of teaching any subject is general understanding of the structure of the subject matter. The teacher needs to arrange the subject matter in a way that becomes meaningful to the learner. Therefore, he should divide the subject matter in small steps in a logical order so that it can be understood easily.

### **(ii) Strengthening the pupils cognitive structure :**

Learning is a process of strengthening the cognitive structure of pupils. It is person's existing cognitive structure which determines whether new material will be meaningful and how well it can be acquired and retained. Therefore, before the actual teaching begins, the teacher should make efforts to know the level of pupils past knowledge and how that knowledge is cognitively structured. In case, there are inconsistencies, the same may be removed by adopting corrective measures.

### **(iii) Knowledge Construction process :**

The teacher now presents the new information in such a way that learners get opportunity to construct their own knowledge by actively selecting, retaining and transforming the information received. Children are given freedom to think, to question, to experiment. The teacher may encourage discussion so that new ideas are generated which may help in solving problems. In this way children can manipulate idea & information to construct new knowledge.

(iv) **Testing & Evaluation :**

Knowledge so constructed is now tested and evaluated. The teacher gives problems or exercises to the children to solve. It helps him to know whether the new knowledge is established or not.

**Conclusion :**

Teachers need to realize that the best way to learn is not from lectures but by letting the learners construct knowledge by themselves. For this we need constructivist teachers and constructivist classrooms. A constructivist teacher is to make the student think for themselves and not to wait for the teacher to tell what to think. He needs to create a constructivist classroom where the students can express their own words and not to have to respond to restricted questions. They have to make their own meanings and decisions in such an environment. It is through this approach, we can expect children to learn better & achieve more. This may only be the way to improve the quality of school education.

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