

# A STUDY OF CONSTRUCTIVISM AND META COGNITION IN TEACHING LEARNING PROCESS

**Dr. Smt Rashmi I. Kadlimatti**

Assistant Professor

Sonia college of Education Sangollirayannanagar, near microwave tower, Dharawad, India

**Abstract:** Psychology deals with scientific study of behavior, being a complex phenomenon very often studied from different angles by different psychologists. Naturally therefore, There Different schools of psychology. Constructivism is a one of them. Meta cognition is an intelligence factor and it is latest buzz word in education especially in psychology. Constructivism is a learning theory found in Psychology which explains how people might acquire Knowledge and learn. Constructivism has roots in Philosophy, psychology, Sociology and education. Its main or central idea given gives importance to the construction of human learning where learners accommodate new knowledge to their previous learning. Meta cognition enables us to be successful learners and it has been associated with intelligence. Meta cognition refer to higher order thinking which involves action control over the cognitive process engaged in learning. it plays an important role for the success in learning and it is closely linked to the development of independent learning which is true constructivism. This paper highlights meaning of constructivism and Meta cognition, characteristics of constructive approach, relationship between constructivism and meta cognition and how these are helpful to teaching learning process

**Key Words:** constructivism, Meta cognition.

## 1. INTRODUCTION:

Psychology deals with scientific study of behavior, being a complex phenomenon very often studied from different angles by different psychologists naturally therefore, there different system of schools of psychology. Constructivism is a one of them. Constructivism give importance to experience because it is the basis of gaining new knowledge learners new knowledge by believing that it is true and real. if the new knowledge does not a collaborate with the existing knowledge or experience and the believes of learners, then there is a possibility that learner might refuse or turn it down, or we might even explore it for the so that they we understand it better, or there is a possibility that we change it to accommodate to our view R. J. Stahl, 1990. Experience is the platform for getting new knowledge in constructivism approach. This paper gives viewed description about constructivism and Meta cognition in teaching learning process.

## 2. Constructivism:

Constructivism is a learning theory found is a Psychology which explains how people might like your knowledge and learns. It therefore has direct application to education. The theory suggest that humans construct knowledge and meaning from their experiences. Constructivism is not a specific pedagogy. Piaget's theory of constructivist learning has had while dragging impact of learning theories and teaching methods in education and is a underlining them of money education reform moments. Research support for constructivist teaching techniques has been mixed, which some research supporting these techniques and other research constructing those results.

### 2.1. What Is Constructivism?

Constructivism is basically a Theory based on observation and scientific study about how people learn. it say that people construct their own understanding and knowledge of the word, through experiencing things and reflecting on those experiences. When we encounter something new, we have to reconcile it with our previous ideas and experiences, may be changing what we believe, or may be discarding the new information has a relevant. In any case we are active creator of our own knowledge. To do this, we must ask question, Explorer and Asus what we now There are two versions of constructivist approach which is cognitive and social constructivism. They were developed and made popular by Jean Piaget and (Cruikshank, Bainer and Metcalf, 1999) according to Jain pages, he believed that learners knowledge is built with the help of learners activities that help to make discoveries in his mind. Therefore the mental activity of the learner is emphasized and teachers need to create a situation where by the learner associated has previous knowledge (Moore, 2004) his waves is cognitively oriented. In contrast, Vyjotsky in social constructivism and that construction of knowledge is socially oriented (Cole and Wertsch, 2002) he believed that learning happens with the interaction with environmental (Moore 2004) however, both the construct its approach focus on constructing knowledge. Every learner constructs his ideas differently based on their pre-existing knowledge Taber 2006 Constructivism is a

Theory about how people learn. In constructivism, individuals construct their own understanding and knowledge, through experiencing on their own and having reflections on those experiences. When we come across a new knowledge, we will assimilate it with our previous knowledge or ideas or experiences and accommodate it with the old or prior knowledge to reach an equilibrium status where the new knowledge and old knowledge create other new experiences for the individual. Thus, in constructivism, we create our own knowledge by asking questions, exploring and assessing what we now in the classroom the constructivist view of learning can point towards a number of different teaching practices. In the most sense, it usually means encouraging students to use active techniques 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 students' preexisting conceptions, and guides the activity to address them and then build on them. Constructivists' 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 ever-broadening tools to keep learning, with a well-planned classroom environment, the students learn **HOW TO LEARN**. You might look at it as a spiral. When they continuously reflect on their experiences, students find their idea gaining in complexity and power, and they develop increased English strong abilities to integrate new information one of teachers' mind rolls becomes to encourage this learning and Reflection process. Constructivism is also often misconstrued as a learning theory that Compels students to "reinvent the wheel". In fact constructivism taps into the triggers the students' innate curiosity about the world and how things work. Students do not invent the wheel but, rather, attempt to understand how it turns, how it functions. They become engaged by applying their existing knowledge and real work experience, learning to hypothesize, testing theories, and ultimately drawing conclusions from their findings. The best ways for you to really understand what constructivism is and what it means in our classroom is by seeing examples of it at work, speaking with others about it, and trying it yourself, has your progress through each segment of this workshop, keep in mind questions or ideas to share with your colleagues. There are two Vital beliefs that go around the idea of constructed knowledge. First, learners construct new understanding using what they already know. They are no more tabula rasa or blank slates where knowledge is shaped. In constructivism, learners begin a learning situation with already existing knowledge by assimilating it with what they have gained from their previous experience and accommodating that prior knowledge to their new knowledge. Secondly, all learners are active rather than passive like in the traditional way of teaching and learning. Learners can change to accommodate their new knowledge if they find what they have learnt is not consistent with their current understanding. Therefore, learners continue to be active in constructivism.

### 3. Meta Cognition:

In constructivism, it is all about giving opportunity for learners to construct their own ideas and the Explore ideas on their own. They also reflect and analyze ideas to Suit to their needs. Meta cognitive approaches are used to help learners to understand the knowledge better. Meta cognition approach gives meaningful learning to learners because the learners take own responsibility to construct ideas in learning process. In the classroom, learners ask question (inquiry method) to understand better (Parkinson, 2004) according to the constructivism view, Meta cognition is an important feature that confers to meaningful and successful learning. Meta cognition sets the foundation where learners build their new information upon (Narod, 1989). One way of supporting the student learning process and encouraging problem-solving skills is through the approach of meta cognitive in teaching and learning. Meta cognitive support can be used by learners in problem-solving methods. Meta cognitive is distinctive and can be helpful in the learners' thinking skills, information processing skills and thus can help them to check the learners' own learning process. Meta cognition plays an important role of the success in learning and it is closely linked to the development of independent learning which is true constructivism. John Flavell defines meta cognition as "the active monitoring and consequent regulation and arrangement of the thinking and learning activities" (Krueger, 1986). Meta cognition is also viewed as the ability to recognize and understand one's thinking patterns and processes or cognition and the ability to analyze one's own learning and development. Therefore, learners possess the necessary awareness to think, develop and engage methods so that they will be able to think more efficiently in order to produce the intended results (Wesley, 1996). Learners will reflect on their learning process like problem solving and then will be able to recognize the patterns which will enable them to have a meaningful transition for further development of knowledge. When a learner has the ability to reflect on his own thinking and analyze his own strategies, it means he is using his Meta cognitive skills to do these. In this case, students carry out research, compare critically and write a Portfolio is an example of using Meta cognition approach. Meta cognitions components are Meta cognitive knowledge and Meta cognitive experience (Flavell, 1981). Meta cognitive knowledge is knowledge about one's own cognitive and affective activities and status and the control this knowledge to achieve a specific goal. The cognitive knowledge is knowledge of the world and the affective knowledge are the abilities and motivation. These are also classified as declarative knowledge, procedural knowledge and conditional knowledge. Declarative knowledge is an example of what knowledge and why the knowledge is learnt. In this case, students need this knowledge to choose the right college after they have left school. Procedural knowledge is

how the knowledge is used and conditional knowledge is how to evaluate the effectiveness (Carrel, Gajdusek & Wise, 2001). The learner actively monitors his own mental process by going through the cognitive and affective processes (Brown, 1987). Various studies have also provided the benefits and advantages of Meta cognition in teaching and learning. In language learning for instance, Oxford, Park-Oh, and Sumrall (1993), Miserandino (1996), Victor Lockhart (1995), White (1995), Fleming and Walls (1998) have provided evidence in the use of meta cognition in teaching and learning process. In addition, they have also indicated that the use of meta cognition is the key factor for being successful learner whereby learners possess all the positive attitudes in a building their self esteem (McIneney et al., 1997). It clearly reveals that a good learner takes responsibility for his own learning by planning, monitoring, managing, reflecting on the process of learning. Therefore it can be said that Meta cognitive strategies are very closely related to self directed learning and it is an important means to achieve goals through Meta cognition.

#### **4. Relationship between Meta Cognition And Constructivism:**

Constructivism is interested in how one constructs his knowledge from his experiences, beliefs and a mental structures which are used to interpret objects and events. According to constructivist view there is no single reality and our world is created by our mind by interpreting events, objects, and perspective on the real world. And our interpretations are personal. So we conceive of the external world based on our individual experiences. From a constructivist East perspective, evaluating how learners construct knowledge is more important than resulting product (Duffy & Jonassen, 1992). So when students are acquiring knowledge, both student and teachers may evaluate how the students are progressing. As a result of this process, the importance of Meta cognition that is awareness of one own cognitive process or strategies appears. Meta cognition refer knowledge about one thinking includes awareness of one's own Capacities, limitations and Awareness of the difficulties when they affairs during learning. According to Brown (1978), Meta cognition has two components: knowledge of cognition and regulation of cognition as cited Tuzun & Topcu, (2010). As knowledge of cognition refer to what individual know about their own cognition, regulation of cognition referred to meta cognitive activities that help to regulate and control ones thinking and learning (Achraw and Moshman 1995, as cited Tuzun & Topcu, 2010). So, we can say that Meta cognition is a self regulatory skill in which individual monitors his learning process. If you look at from Vygotsky's perspective, his theory is put under the social constructivism. His socio-cultural theories aim to provide self-regulated learners. Self regulation also requires meta cognitions such as planning, monitoring and evaluating (Schunk, 2008). Meta cognitive Strategies for selecting and monitoring mental functions promote creative and critical thinking, and for instruction, promoting thinking skills important because it anchors individuals construction of knowledge promotes their Curiosity, and help to build up on their interest and prior experiences (Salman, 2008). So, from a constructivist perspective, self Regulation and Meta cognition cannot be separated because Meta cognition covers self-regulation. Although Vygotsky did not to use of particular term of Meta cognition, he asserted that "consciousness and deliberate control are the principal contribution of the school years". Constructivist theory claims that, learners have active role in their construction of understanding and knowledge. This process requires self-organization of experiences, and requires at students regulate their own cognitive structures, interact new meaning from existing knowledge, and an Awareness of Current Knowledge structures. Therefore, I think constructivism not only emphasize the constructive process, but also emphasize to be aware and control the construction process. So, from a cognitive constructive perspective, self Regulation, and self awareness can take into account under the construct of meta cognition. And, it is clear that Meta cognition and critical thinking are rooted in the constructivist theory (Tsai, 2001). For constructive theories, constructing knowledge in individually with the interaction in the environmental also included engaging in higher level thinking and problem solving (Driver, Asoko, Leach, Mortimer & Scott, 1994 as cited Duffy & Jonassen, 1992). In my opinion higher level thinking skills also refers meta cognitive skills such as selecting appropriate strategies to achieve desired product, monitoring and evaluating efficiency of one's learning. according to Tuzun and Topcu (2010), many researchers indicates that meta cognitively aware students are more Strategic and for perform better in Problem solving situations than unaware students, meta cognitively aware students can easily make planning, sequencing, monitoring, and reflecting and it improves their performance. While learners are constructing their own understanding of the world to be meta cognitively active can lead improve their performance and make learning better and faster (Moore, 2004). Meta cognition is an aspect of a constructivist view because it lead monitoring and regulating learning process when individuals construct knowledge by internalizing it from within, in interaction with the environment (Tsai, 2001).

#### **5. Constructivism is the Teaching Process:**

The constructivist theory has very important effect on the teaching process in the classroom. Using the constructivist theory of learning encourages learners to reflect their own knowledge (Bonder, 1986). A wide variety of different teaching practices are carried out in the classroom. Teacher encourage student to use active techniques by carrying out experiments and Real world problems solving. This is done in order to create more knowledge which is done slowly by the learners themselves. Learners then reflect what they have learnt, or are learning and how they

understand is changing through this reflection period. Teachers give more freedom to student to understand knowledge there on their own and to explore knowledge on their own. Teachers facilitate and prompt learners while doing this, teachers guides the activities so that Learns can build their knowledge based on the platform that the teacher has laid. in the lesson plan prepared, teacher does a lot of scaffolding in order to build the structure towards building the students knowledge in constructivism, teachers regularly checks on the students work and the anchorages them. Teachers check frequently how and in what ways the activity is helping students to gain knowledge and understanding. Thus, the teachers' main role in constructivism is to encourage and facilitate students learning and Reflection process. Therefore a teacher is basically a facilitator or guide. The constructivism approach uses the learner centered approach rather than a teacher centered approach. In the teaching process, a teacher plays the role of an expert of knowledge. The teacher still plays an active role in constructivism as an expert who guide and leads students in the right path by laying the platform for them to build their knowledge upon. Teacher set up learning environment which derives different learning purposes but Learners are the ones who will carry out the activity differently. A teacher's role her is basically learners to construct knowledge and not reproducing knowledge. The teacher gives the necessary tools for the learners to build their ideas upon. These are like a problem solving activities, carrying out experiments and enquiry based activities. In another word, teachers' carries out scaffolding to build upon, in this case, even, parents, peers, references, books, websites, are sources of help in helping the learner in their language learning.

### **6. Constructivism and Meta Cognitive Strategies in Teaching and Learning:**

Constructivism and Meta cognition approaches help teachers to create lesson plan on students learning in order to solve problems meaningfully. There are many methods is these approaches, therefore it is important for teachers to select appropriate strategies to teach their students. It is also equally important to be constantly learner centered. Learning is an interesting process for students, teachers and curriculum designers in the field of education. Constructivism has become a very important and Powerful way of Thinking in the recent years. Emphasis is given to constructivism approach lately in all schools and Educational Institutes to enhance constructivism in the teaching and learning processes. The need to teach Meta cognition is equally important because it plays a vital role in successful learning. It is the schools mission to create problems solvers with critical thinking skills. This skill is much needed in molding the students in becoming active participants in our society who can make valid decisions. Students need the ability to interact and work with others effectively. Therefore it is our part as educators to help our students gain the ability to be able to fit into the society well. We need to help students to build knowledge based upon what they have already known. As language teachers, it is believed that it is essential to provide learners with chances to experiences what the learner is learning. Learners need to really get involved in the process of learning. The focus on teaching and learning are needed if teachers are to implement constructivism and Meta cognitive approach to thinking. Therefore proper lesson planning is needed to focus on what the teachers and students will do. It can offer a good way of learning if proper scaffolding is done. This is also a good way for the Teacher to find out about their students strengths and weaknesses and also their interest. This kind of information is difficult to get if a Teacher centered approaches is used. It is a shown in this paper, how the constructivist and Meta cognitive approach in teaching and learning is a done to make meaningful knowledge. It also shows that careful scaffolding is needed in helping learners to develop effectively and independently. Student's role have been passive receivers lately, in this school with the change in trend, new technology and training provided to teachers, many teachers are beginning to realize the importance of constructivism and Meta cognition approach in the teaching and learning process. Therefore, a survey and interview have been also conducted to the number of teachers practicing these approaches in their classroom and their opinions towards these approaches.

### **7. CONCLUSION:**

The teaching of constructivism and meta cognition is very valuable especially in the teaching and learning of all subjects. When learners reflect upon their learning and construct meaningful knowledge, they become better learners. Strong met cognitive skills can enhance learners to become better language learners. A meaningful learning process makes students to understand the concepts through the active learning process. Learners monitor their learning process, assimilate and accommodate their knowledge through a meaningful learning process.

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