CONSTRUCTIVISM: IMPLICATION FOR RESEARCH AND EFFECTIVE LEARNING

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ABSTRACT

"Educated society" is the term used as a modern paradigm to describe the future of our society all over the world. This has led every philosopher or intellectual to inquire, research and study into this realm. Education starts at an early age and is tightly knit with the learning process and how the knowledge is acquired. Constructivism is one the more popular theory of knowledge and learning proposed as early as 1936 by Jean Piaget and later Vygotsky&Glasersfled.Traditional teaching methods have been used ever since in children's education system but havenot been much fruitful. The authors in this research paper have identified why traditional teaching pedagogy may lack successand propose constructivist approach in the field of research and effective learning.

Keywords: Constructivism, Constructivist approach, Effective learning

INTRODUCTION

The spirit of modernity and development of a nation is reflected through the investment in children's education. The aim of education is not only material advancement but also spiritual, cognitive and cultural development of the people and advancement towards a progressive society. The process of teaching and learning has been one way for a long time. The traditional approach of one-way learn and repeat method has failed to foreseean advancing classroom atmosphere towardsany subject at various levels of education. Students have no idea what and why they being taught a certain topic and where they can apply it in real life. This leads to major demotivation towards learning new things and a lack of interest in the subject. The education system we have created since last few decades reliesonan objective view of knowledge. This view is imparted to students in the form of lectures, instructions, practice and follows teach& repeat methodology. The traditional view only

assumes that reality of learning and knowledge can only be an ensemble of facts. As studies were carried out on the theory of learning we came to the realization that such ideology disregards individual's strength to learn, creation of new ideas and new ways to solve problems, cornering children to learn in a specific way that may be not suitable to his/her cognitive ability and context.

Many researchers have tried to challenge the traditional teaching approaches in the past but the idea to find new effective teaching and learning pedagogy is taking momentum in recent times. Constructivism is one such epistemology. Constructivism forwards the thought of taking into account an individual's ability to learn and how he/she constructs and re-constructs new and present knowledge, respectively. If the knowledge ideally reflects ofwhat a learner's independent world is constructed of or views it as such, then that knowledge can be applied in the real world that represents that real world as existing. This pedagogy was first proposed by Jean Piaget as a study in 1936. The same idea later gave roots to the constructivist principle of learning. The word 'construct'is taken from how an individual constructs the knowledge base through his/herview and past experiences with the real world. The approach proposes the idea for children to discuss how they are learning, challenge the objective view of knowledge and take an active part in the process, finally realizing how their understanding and attitude towards a subject is changing.

TRADITIONS IN CONSTRUCTIVISM

"How does a learner learn?" The basic principle, philosophy and framework are entirely different from behaviorism. Constructivism has offered itself as a reliable and viable approach in many various domains of education. However, constructivism has evolved in many different flavors or forms, some more prominent than others. The different types of constructivism overlap so much in characteristics they cannot be separated in a clear manner. There have been many minor changes to many forms of constructivism; however they are usually derived from three major pathways in constructivism.

PHILOSOPIHICAL CONSTRUCTIVISM

Philosophical constructivism has been originated probably intheancient Greek philosophy. Socrates (469-399 BC) had used the technique of 'dialogue'. In this technique he asked directed questions leading his pupil to realize for themselves the weakness in their

thinking.The philosophical view of constructivism orbit around the notion of materialism vs. idealism. Materialist philosophers take matter as primary and consciousness as secondary and as a derivative of matter. According to these people, the world is knowable. On the other side of the spectrum, idealist philosophers, believe that consciousness is primary; consciousness exists prior to matter and brings matter into being. There two sorts of idealists: (i) subjective idealist, who says that the world is created by the consciousness of the individual- the subject, and (ii) objective idealist, they argue that the word is made by some kind of objective consciousness (super individual).

SOCIOLOGICAL CONSTRUCTIVISM

Three categories of sociological constructivism have resulted from various schools of thought: strong form, mild form and actor-network theory. Sometimes the word "social constructivism" is used in place of "sociological constructivism" owing to the traditional practice.All knowledge is constructed and interpreted socially in the frame of science and technology. Technological change is a genuine social change according to Social Construction of Technology, SCOT theory (Collins, Bijker et. al., Woolgar, 1984). Besides social factors, non-social factors in a particular social context also influence the construction of technology (Social Shaping of Technology, SSOT). Development and stabilization in the field of science and technology arise from the construction of various social heterogeneous networks (Callon, Latour, 1984).

EDUCATIONAL CONSTRUCTIVISM

Educational constructivism evolved from the idea that knowledge is built through the process of assimilation, accommodation and equilibrium. A child goes through stages of mental development. With each stage, the structure of concepts he/she organize changes. The reality of those concepts isthen constructed by the individual. One must be ascertained what a child knows and teach him accordingly. The purpose of knowledge acquisition by a child is to comprehend and organize the experiential world (Glasersfled, 1989).

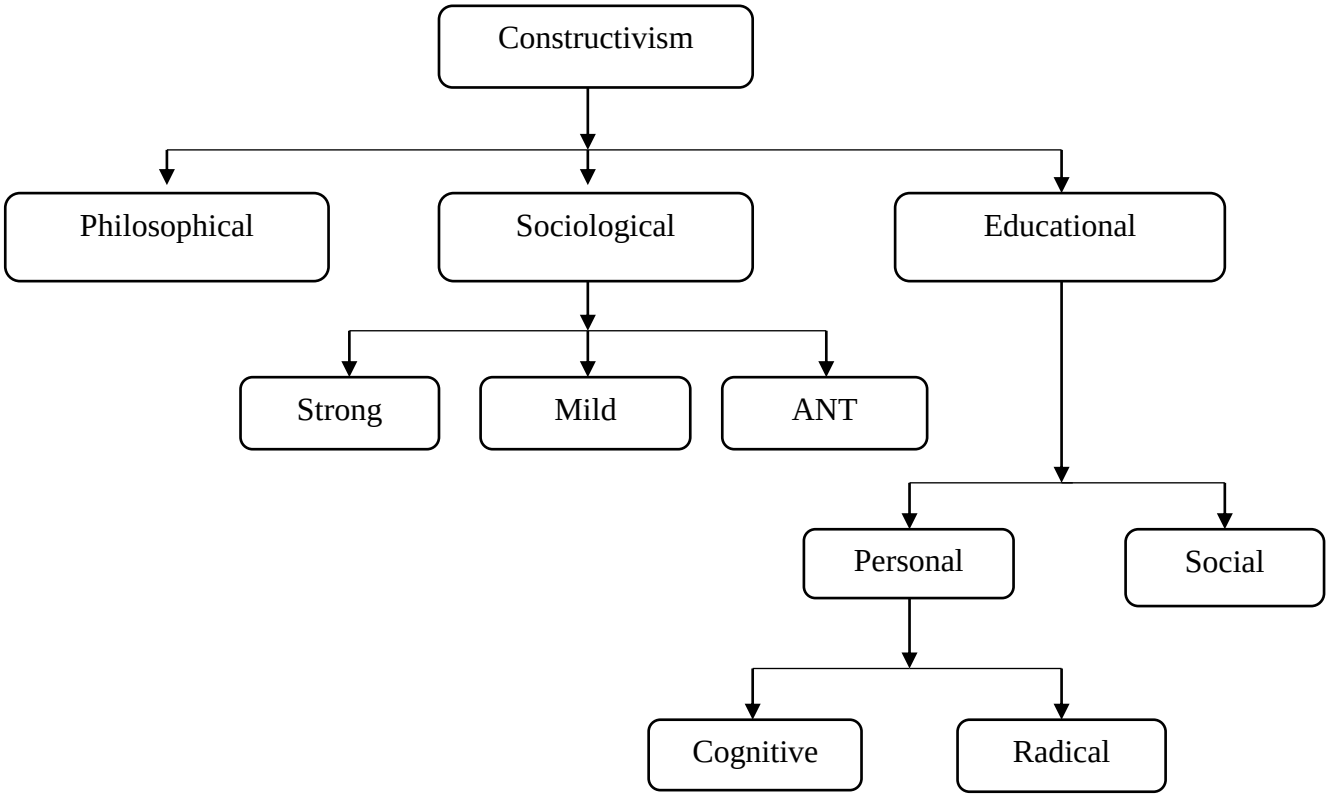

Figure 2.1 Pathways of Constructivism

CONSTRUCTIVIST PRINCIPLES OF TEACHING

Many theorist and practitioners have proposed many ideas on pedagogy of teaching in general or specific field of subjects and age. These may directly not relate to the constructivist approach on teaching and learning but indirectly, the principles are the assemblage and rationale of their inclusion. The main principles of constructivist learning theory are –

1. *Content and skills should be made relevant to the learner*

The content taught in the class must be relevant to the learner and under his/her ability to grasp the concept. The learner should have idea about the topic on why they are being taught this content and where they might use this in real world.

2. *Framework and content should reside within the learner's prior knowledge*

The content should be designed or presented in a way that leaner can imagine or grasp it using prior knowledge of the real world. The pedagogy states that if this principle cannot be followed the concept to teach should be rejected by the learner.

3. *Learning should take place in an authentic and real-world environment*

Experiencing the knowledge both objectively and socially is a primary catalyst for its construction. When the experience is authentic, the learning process becomes very easy and retainment of it even easier.

4. *Students should be assessed formatively, serving to inform future learning experiences*

To assess the performance of a student who has been learning using constructivist model the teacher sees it formatively. It means to assess an individual's knowledge based on his knowledge about his environment and real world. This should be a continuous process and is necessary to create a better learning experience for students.

5. *Students must be self-regulatory, self-mediated, and self-aware*

The primary tenet in this constructivism is that the learners constructtheirown knowledge themselves. They must know themselves why they are learning something and where they apply this knowledge effectively.

6. *Teachers are primarily, guide towards learning and not instructors*

Teachers must not follow the 'feed and absorb' methodology, but act as mediators towards motivating students to learn themselves and generate new ideas and creativity. They can discuss the content, explain it actively but let students grasp it using their own way requiring prior understanding. They must encourage the learner to see things from multiple perspectives and represent content into a cognitive map for their overall development.

LEARNER AS A CONSTRUCTOR

Constructivist philosophy views knowledge as contextual and subjective. It cannot to propagated to passive learners. Promotors of constructivism like Easley believed that learners construct and reconcile knowledge based on their prior experiences in the real world. Piaget's view of learning is based on various development stages of a child, whereas Vygotsky

believed that knowledge assimilation is done through social interactions. Children can only learn through their own cognitive ability and understanding of the topic, whereas teachers are only negotiators in the meaning of making-process. A teacher only guides the learner towards various ideas to encounter new information of which the learner makes sense through his/her own experiences. Cooperative learning is another approach found pretty successful in recent times. It encourages students to socially interact with each other and view what and how others think about the topic they are being taught. As a baseline, leaners are passive receptors of knowledge, when fed with new raw information tries to construct it into a form understandable to the individual in their own way. Students use problem-solving, experiential learning, concept mapping and question their existing ideas to validate and verify their own beliefs. Finally, this process helps students towards a self-learning directive.

TEACHER'S ROLE IN A CONSTRUCTIVIST CLASSROOM

The role of a constructivist teacher is to create an interactive environment that acts as catalyst towards development of student's cognitive ability and knowledge. The teacher does not simply feed them information but rather observes them and assesses their thought process. They let students explore new ideas and discover through their own creativity. One of the roles of the teacher is to encourage students to assess their own learning ability and process. As their knowledge matures, students find their ideas to become complex and powerful, their ability to integrate new knowledge becomes strong. The teacher need to encourage this reflection process and let children engage in activities that help them construct their road towards such a path.

Let us take an example of teaching unitary method in a mathematics classroom. The teacher already knows the 'answer' to the question. Rather than just dictating the question and giving directions to just multiply the value to numbers to get unit value the teacher must rephrase the question such that it represents a problem in real world and let students find answer themselves and help them indirectly to reach to that answer. All constructivist theories have concluded that teachers are a vital part in children's development as they frame questions and activities and monitor their exploration, guides them towards new ideas and promotes creativity.

CONSTRUCTIVISM AND RESEARCH

Many researchers in the past have supported the idea of using the constructivist approach in conducting studies in the educational domain. The number and percentage of scholarstakinginterest in studying and using constructivism have indicated the paradigm shift in methodologies of such studies. In return, they have produced findings to help educationalists, policy-makers and curriculum creators in general. Some researchers have concluded to take a fresh approach towards constructivism and its potential to change how students are being taught and engage them in an active manner for better results. Studies conducted to explore new educational methodologies have started taking advantage of constructive approach and how it can affect the results of a study hugely due to change of attitude of students towards a subject in the samplepopulation. How the curriculum and educational policies are being set in the future depends on the studies on the approach conducted in the present, it has become important than ever to gain advantagethat constructivism brings in such researches.

CONCLUSION

The primary feature constructivism facilitates is its ability for the learner to bring in their own experiences into the learning process. The role a teacher plays is just as a mentor or guide. One of the most important aspects of constructivism is the need forestablishment of a good relationship between learners and teachers. It is the job of the teacher to guide the leaner in the right direction, help them overcome challenges and acquire academic goals. In the traditional approach of learning learner works as an individual but in constructivist approach he/she needs to work in group. Knowledge and understanding of concepts are acquired through participation in various activities and tasks promoting teamwork in later part of the life requiring job duties. Constructivism emphasizes collaboration and exchange of ideas which promotes social and communication skills. In such classroom learners concentrate on thinking and understanding, rather than memorization. They get variety of experience that lead towards their overall cultural and cognitive development, which is the primary goal of being educated.

REFERENCES

Bhattacharjee, J. (2015). Constructivist Approach to Learning–An Effective Approach of Teaching Learning. International Research Journal of Interdisciplinary and Multidisciplinary Studies, 1(6), 65-74. Retrieved October 20, 2020 from http://oaji.net/articles/2015/1707-1438677336.pdf

Jha, A.K. (2009). Constructivist Epistemology and Pedagogy: Insight into Teaching and Knowing. Atlantic Publishers.

Von Galsersfeld, E. (1990). Constructivism in education. In A Lewy (Ed.) The Copyright © 2017, Scholarly Research Journal for Interdisciplinary Studies International Encyclopedia of curriculum. Oxford. Pergamon London: Falmer Press.

Senapaty, H.K. (2013, June 24). Creating Constructivist Learning Situation in the Classroom. Constructivism, Capacity Building of Teacher Educators of Madhya Pradesh: Regional Institute of Education, Training Package,11 - 26.

Etuk, E.N. et al (2011). Constructivist Instructional Strategy.In Bulgarian Journal ofScience and Education Policy, Vol 5, No. 1, 2011.

Mogashoa, Tebogo. (2014). Applicability of Constructivist Theory in Qualitative Educational Research.

Mcleod, S.(2018). JeanPiaget's Theory and Stages of Cognitive Development.Simply Psychology. Retrieved June 6,2020 from https://www.simplypsychology.org/piaget.html.

Brooks, J. G., & Brooks, M. G. (1999). In search of understanding: the case for constructivist classrooms. Alexandria, Va.: Association for Supervision and Curriculum Development.