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CONSTRUCTIVISM AS A PARADIGM FOR TEACHING AND LEARNING

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Abstract:

Behaviorism and constructivism are two of the predominant educational theories that form the basis of many today's educational technology. Research shows that the traditional classroom teaching method known as lecturing, in which the instructor (lecturer) primarily speaks and the students primarily listen and take notes, is very ineffective .Studies indicate that active participation is more effective in a learning environment that emulates a real world learning environment. In a traditional teaching process, very little learning takes place. Studies support that the teacher alone can nurture a student's participation in the learning process. They are the facilitators of creating constructivist learning environment representing learning with technology which encourages learners to actively process and organize information by making internal cognitive connections. This paper brings into discussion the shift in the role of teachers in the learning process, from the traditional teaching environment to learning environment that encourages active student's participation in the learning process. These characteristics of an effective teacher are grounded in the constructivism theory of learning, prior to which a brief description of behaviorism is provided. The paper also discusses the effectiveness of the constructivist approach and the various pedagogies that leverage constructivism.

Key words: Constructivism, behaviorism, Constructionism, virtual learning, reciprocal learning , Collaborative learning, Critical Exploration ,Metacognition.

Introduction:

Behaviorism is the study of observable and quantifiable aspects of behavior and excludes subjective phenomena, such as emotions or motives. It is based on the proposition that behavior can be researched scientifically without recourse to inner mental states .It is form of materialism, denying any independent significance of the mind. Roblyer et al. (1997) defines this traditional method as an approach that obliges students to submissively grasp and regurgitate information as and when conveyed by the teacher. Indeed, the traditional approach is more teacher-centered as the teacher is viewed by the students as the only source of information. In a traditional teaching and learning environment, very little learning takes place even though there appears to be an active shift of information. Duch, Groh and Allen (2001, p. 4) also mention that in a traditional learning environment, the teaching and learning processes were usually…

"… content-driven, emphasizing abstract concepts over concrete examples and application rarely challenge students to perform at higher cognitive levels of understanding. This didactic instruction reinforces in students a naïve view of learning in which the teacher is responsible for delivering content and the students are the passive receivers of knowledge."

But learning can never be one way. There has to be two-way transfer of knowledge which requires optimum and active students' participation. Students thrive in an active, student-centered learning environment because it emulates a real-world learning environment. Thus it becomes evident that participation of students in a student-centered learning environment is necessary. Here constructivism comes into focus. The effectiveness of the behavioral approach is questionable in areas that require comprehension, creativity and 'gray' answers (Ward et al., 2006). The strengths of constructivism lie in its emphasis on learning as a process of personal understanding and the development of meaning where learning is viewed as the construction of meaning rather than as the memorization of facts. Constructivism sees learning as a dynamic process in which a learner constructs new ideas or concepts on their current/ past knowledge and in response to the instructional situation. It implies the notion that learners do not passively absorb information but construct it themselves. It has been emphasized that in constructivist approach when we encounter something new, we have to reconcile it with our previous ideas and experience, may be changing what we believe or may be discarding the new information as irrelevant. "We are the active creators of our own knowledge".

The constructivists believe that there is no single version of reality, rather a multitude of realities situated within each learner. As such, learning is dependent upon the "learner's ability to analyze, synthesize and evaluate information to create meaningful, personalized knowledge (Phillips et al., 2008).Constructivism advocates that reality does not exist out there objectively rather it is constructed by the human beings subjectively. It is not predictable in total rather most of it depends on the human interaction with the situation resulting into human perception, giving meaning which in turn draws the picture/image of reality.

Objectivism / behaviorism:

Behaviorism in education is "didactic in approach - a form of transmitted knowledge (Gray et al., 2003)" with "passive acceptance of well-cooked teacher's knowledge (Hvorecký et al., 2005)" where teachers used "a linear model (Cagiltay et al., 2006)." Transmission refers to one-way communication. In learning environments where there is teacher-led pedagogy, the students are the listeners and have to capitalize on whatever is transmitted because teacher has absolute control of the learning dynamics with a sequential process of transmitting knowledge. In objectivist mode, learning occurs through the "instructor presenting the learner with the required stimuli along with the required behavioral responses within an effective reinforcement regime. The degree of learning is assessed through observable measures such as tests, assignments and examinations (Ward et al., 2006)."Behavioral teaching and learning tends to focus on skills that will be used later on. It does not usually demands that a learner is able to put the skills or knowledge to use in a real or authentic situation. It is simply believed that a learner will be able to do so because he/she has the correct knowledge and skills needed for such a situation. The objectivist teaching gives complete control of materials to the teacher who manages the pace and direction of learning thereby making learning a sequential process where there is a single reality about which the "learners display an understanding through declarative, procedural and conditional knowledge (Phillips et al., 2008)."

Historical Background of Behaviorism:

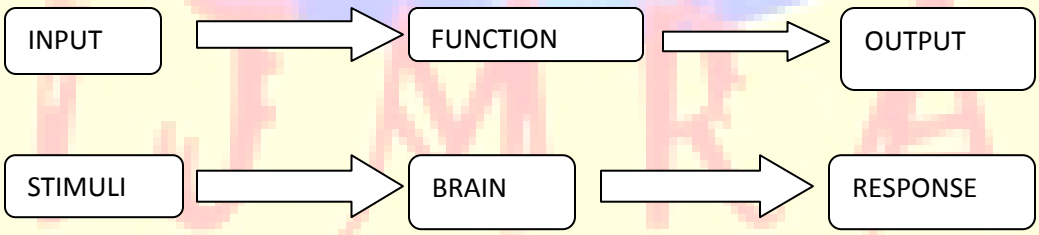
Behaviorism was established by J.B.Watson in 1913 not all of a sudden. It had its antecedent's roots. Four such roots of behaviorism have been emphasized:

Early philosophical trends: Watson studied philosophy in his early years and he knew well about philosophy of Aristotle, who emphasized objective and observable phenomena in psychology. Watson also maintained the same outlook to psychology.

Animal psychology: Charles Darwin stimulated the study of animal psychology a lot. He did several observations on animals and demonstrated the close relationship between expressed emotions in human beings and lower animals.

Pavolian conditioning reflex: It is significant because firstly conditioning experiments served as an objective and scientific methods for development and modification of behavior and secondly Watson incorporated it into his own experimentation for all kind of human learning.

Functionalism: It had a direct influence upon Watson. He founded his behaviorism as a reaction against functionalism. It is material monist theory of mind which states that everything is physical.



Constructivism:

Constructivism is an epistemology of learning. In education, constructivism refers to theories of knowledge and learning. These theories state that knowledge is constructed rather than received from an objective world or external reality. For example, knowledge does not exist in a book but rather is produced by the reader in the process of reading. It 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 things and reflecting on

those experiences. To do this, one should ask question, explore and assess what we know. It involves learners in a real, authentic world/ situations/ context. Students learn to question things and to apply their natural curiosity to the world.

Historical Background of constructivism:

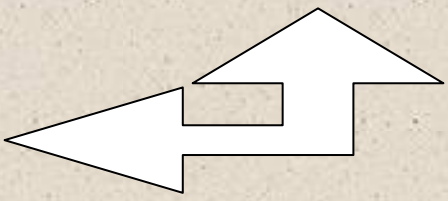
The concept of constructivism has roots in classical antiquity, going back to Socrates dialogues with his followers, in which he asked directed questions that led his students to realize for themselves the weaknesses in their thinking. The Socratic dialogue is still an important tool in the way constructionist educators assess their students learning and plan new experiences. In this century, Jean Piaget and John Dewey developed theories of childhood development and education, what we now call progressive education that led to the evolution of constructivism. Piaget believed that humans learn through construction of one logical structure after another. He also concluded that the logic of children and their modes of thinking are initially different from those of adults. The implications of this theory and how he applied them have shaped the foundation of constructivist education. Vygotsky introduced the social aspect of learning into constructivism. He defined the "Zone of Proximal learning" according to which students solve problems beyond their actual development level but within their level of potential development.. Dewey called for education to be grounded in real experience. Inquiry is a key part of constructivist learning. Jerome Bruner initiated curriculum change based on the notion that learning is an active, social process in which students constructs new ideas or concepts based on their current knowledge.

Thus it can be concluded:

Objectivism & Behaviorism → Individual learning from teacher

Subjectivism & Constructivism → active creators of knowledge

Collective (Group) Learning



Significance of the study:

In education, constructivism emerged formally as a theory of knowledge and a theory of learning. As a theory of learning, constructivism focuses on the implications of "constructing knowledge" for learning. Typically approaching constructivism from a psychological or cultural perspective, educators emphasize the role of learners rather than that of knowledge. While constructivism is not a theory of teaching, constructivists argue that pedagogy should be based in theories of learning to ensure that teaching always centers on student learning.

Recently, constructivist theories of learning have sparked reforms in teaching practices, suggesting that learning environments focus directly on students, the importance of context, authentic problems and tasks, discovery learning, student's prior knowledge, group projects and discussion, student choice, and authentic assessment. In education from a constructivist perspective, teachers are encouraged to become student centered because constructivism is first and foremost a theory of learning and knowledge acquisition, and the primary learner is the student. It encourages the learners 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 students' preexisting conceptions, and guides the activity to address them and then build on them. Students are not blank slates upon which knowledge is etched. They come to learning situations with already formulated knowledge, ideas, and misunderstandings. This previous knowledge is the raw material for the new knowledge they will create.

Thus through constructivist learning the educators first consider the knowledge and experiences students brings with them to the learning tasks. The school curriculum should then be build so that students can expand and develop this knowledge and experience by connecting them to new learning. Therefore teaching takes place step by step in an inductive manner where learning takes place actively and knowledge is not received from outside or from someone else as instructor who is there just to pour the knowledge into passive students who wait like empty vessels to be filled. But he sets up the problems and monitors students' exploration, guides the direction of students' enquiry and promotes new patterns of thinking. He inquires about students' understanding of concepts before sharing their own understanding of those aspects and emphasizes on performance and understanding while assessing learning.

Methodology:

Reviews of the literature generally summarize results of past studies which indicate a paradigm shift from behaviorism to constructivism. This paper includes a description of the literature from diverse sources in the area of behaviorism and constructivism. The review of the literature in this study does more than just describe and report the literature; it synthesizes diverse sources, explains findings, and integrates them into a series of recommendations on the basis of the benefits of various constructivist pedagogical approaches for the inclusion of instructional activities based on constructivism. Therefore, my literature review will address the issue of whether a constructivist and collaborative learning environment could create a teaching- learning environment to enhance teachers teaching and students` learning. In this case, the following research questions were established in order to further identify the current range of information and research findings related to the problem.

• What is the meaning of "constructivism and behaviorism" and its consequences for learning and teaching? How does it affect the roles teachers and students play in the instruction?

•Why do the teachers need to apply this confidently, thoughtfully and effectively in the classroom?

• What are the different pedagogical approaches of constructivism used in the learning process?

Constructivist theory of learning:

Constructivism is a belief system based on relativist ontology, assuming that reality is known only in a personal and subjective way by the knower: Reality exists only in the context of a mental framework (construct) for thinking about it. "Knowledge is constructed and adapted as a result of successive experiences and reflections". Learning from a constructivist perspective is thus an adaptive process that organizes one's experiential world; it is not discovering an independent, pre-existing world outside the mind of the knower.

The teaching and learning process in a traditional rationalist and behaviorist approach focuses on covering extensive subject area, which causes the students to have less amount of time to engage in thinking beyond the facts and problem-solving, and consequently minimizing independent and autonomous learning (Holt & Willard-Holt, 2000). These traditional rationalist and behaviorist approaches to learning also puts more emphasis on didactic lectures rather than addressing importance to active student learning (Holt & Willard-Holt, 2000). These students being deprived of fundamental approaches to learning due to traditional teaching and learning methods, therefore, also lack other important learning skills, for instance, problem-solving skills (Tan, 2003; McMahon, 1997), critical thinking and higher order thinking skills (Tan, 2003) and autonomous learning skills (Holt & Willard-Holt, 2000).

A study was conducted that assessed the learning of identical course content in two individual group treatments: one group receiving traditional instruction (n=86) and another receiving student centered constructivist instruction. It is found that the constructivist treated group out-performed the traditionally taught cohort on identical evaluations (Lord, T.R., 1997).

Roblyer et al. (1997) strongly support the fact that constructivists focus on what drives the students to learn, achieve and to efficiently comprehend and utilize what they learn outside the four borders of the classroom. According to Santrock (2001), learning is best achieved when the individual actively construct knowledge. That is, individuals must actively participate in the teaching and learning process, thus to discover, to reflect and to think critically on the knowledge they acquire (Richardson, 2003). Hence, the constructivist approach does not allow for rote memorization but encourages the construction of meaningful knowledge and understanding. For these reasons and more, the constructivist approach to learning is perceived as a theory of student learning rather than as a theory of teaching (Richardson, 2003). According to Richetti and

Sheerin (1999, p. 58) the fundamental to the constructivist theory of learning is the acknowledgment of the learner as a thinker with capability and value. "After all, why would we need to understand the student's point of view if the teacher's view is the only one that matters?" Constructivist learning approaches provide many opportunities for learning through their student centered environments based on their context.

This new pedagogical approach with its effective learning outcome gave way to the notion that instructors should only provide the students with appropriate learning situations, such as problem-solving approach (McMahon, 1997) that will instigate and foster their skills in developing their individual knowledge and skills that will be useful to them in their later life (Flavell & Piaget, 1963). Evidently, problem-solving context is perceived imperative and necessary for engaging students in the reflective use of knowledge in the teaching and learning process (McMahon, 1997). In addition, constructivism theory of learning perceives that the learning process is constructed of creation of knowledge through interpretations of their experiences and their interactions with other individuals, rather than viewing learning as an internal process of knowledge transfer, in which knowledge is transferred from the individual's external environment into their memories (McMahon, 1997; Flavell & Piaget, 1963).

PARADIGM SHIFT IN TEACHERS ROLE:

The teacher plays a very important role in the teaching learning process. "Teacher's job is not to teach, but to find the ways & circumstances of learning for the students." The role of a teacher in the changing social scenario is becoming very challenging. As a result the traditional teaching method of teacher as sole information-giver to passive students appears outdated. In a Berkeley (Angelo, 1991) study on undergraduates in a large lecture hall setting, it was found that only 20 % of the students retained what the instructor discussed after the lecture. They were too busy taking notes to internalize the information. Also, after a lecture has passed eight minutes, only 15 % of the students are paying attention. They emphasize the learning of answers more than the exploration of questions, memory at the expense of critical thought, bits and pieces of information instead of understanding in context, recitation over argument, reading in lieu of doing. They fail to encourage students to work together, to share ideas and information freely with each other, or to use modern instruments to extend their intellectual capabilities. The

teacher plays a very sensitive role in building a generation which means to give a shape to the future society what the country and the universe need now. And the better generation is the only panacea of any type of problem that our society faces today. When this is the only dream that we recommend, then the society pleads for the 'constructivist teachers' those who aim at "change"-within first, then in the generation as the children are the best link between the society & wisdom. The teacher is a creative learner who sits among the several learners to create a conducive environment in learning.

Boud and Feletti (1991) also points out to the lack of students' participation in a traditional teaching and learning environment. Boud and Feletti (1991) asserts that conventional teaching and learning process was criticized for the inadequate awareness in encouraging teamwork and development of skills of enquiry. Normala Othman and Maimunah Abdul Kadir (2004) also points out that in the traditional teaching and learning environment, students are spoon-fed with information from textbook materials. In a traditional model (sometimes referred to as the objectivist model) classes are usually driven by "teacher-talk" and depend heavily on textbooks for the structure of the course. There is the idea that there is a fixed world of knowledge that the student must come to know. Information is divided into parts and built into a whole concept. Teachers serve as pipelines and seek to transfer their thoughts and meanings to the passive student. There is little room for student-initiated questions, independent thought or interaction between students. The goal of the learner is to regurgitate the accepted explanation or methodology expostulated by the teacher (Caprio, 1994).

Hence, it was an absolute necessity for students to take the dominant role in the teaching and learning process. Ng (2005) argues that optimal students' participation in the teaching and learning process is imperative to ensure the students are able to effectively practice self-regulated learning strategies. In order to achieve these skills and qualities, it is imperative for the students to have more time for reflection of what they have studied, for deliberate reflective reading, for assimilating the best of the original literature in each field. Given these circumstances, teachers should encourage student centered learning rather than teacher-centered teaching. Learners actively take knowledge, connect it to previously assimilated knowledge and make it theirs by constructing their own interpretation (Cheek, 1992).

David Jonassen identified three major roles of teachers as facilitators to support students in constructivist learning environments:

Modeling

Coaching

Scaffolding

According to Normala Othman and Maimunah Abdul Kadir (2004, p.4) there is a shift in the teacher's role from a dominant information feeder to a facilitator, as a result many unique opportunities for teachers are created to build relationships with students as teachers may fill the varied roles of coach, facilitator, and co-learner.

According to the constructivist approach, instructors have to adapt to the role of facilitators and not teachers (Bauersfeld, 1995). Whereas a teacher gives a didactic lecture that covers the subject matter, a facilitator helps the learner to get to his or her own understanding of the content. In the former scenario the learner plays a passive role and in the latter scenario the learner plays an active role in the learning process. The emphasis thus turns away from the instructor and the content, towards the learner (Gamoran, Secada, & Marrett, 1998). This dramatic change of role implies that a facilitator needs to display a totally different set of skills than a teacher (Brownstein 2001). A teacher tells, a facilitator asks; a teacher lectures from the front, a facilitator supports from the back; a teacher gives answers according to a set curriculum, a facilitator provides guidelines and creates the environment for the learner to arrive at his or her own conclusions; a teacher mostly gives a monologue, a facilitator is in continuous dialogue with the learners (Rhodes and Bellamy, 1999). A facilitator should also be able to adapt the learning experience 'in mid-air' by taking the initiative to steer the learning experience to where the learners want to create value. The learning environment should also be designed to support and challenge the learner's thinking. The critical goal is to support the learner in becoming an effective thinker. This can be achieved by assuming multiple roles, such as consultant and coach.

A further characteristic of the role of the facilitator in the constructivist viewpoint is that the instructor and the learners are equally involved in learning from each other as well (Holt and Willard-Holt 2000). This means that the learning experience is both subjective and objective and requires that the instructor's culture, values and background become an essential part of the

interplay between learners and tasks in the shaping of meaning. Learners compare their version of the truth with that of the instructor and fellow learners to get to a new, socially tested version of truth (Kukla 2000). The task or problem is thus the interface between the instructor and the learner (McMahon 1997). This creates a dynamic interaction between task, instructor and learner. This entails that learners and instructors should develop an awareness of each other's viewpoints and then look to their own beliefs, standards and values, thus being both subjective and objective at the same time (Savery 1994).Some studies argue for the importance of mentoring in the process of learning (Archee and Duin 1995; Brown et al. 1989). The constructivist model thus emphasizes the importance of the relationship between the student and the instructor in the learning process.

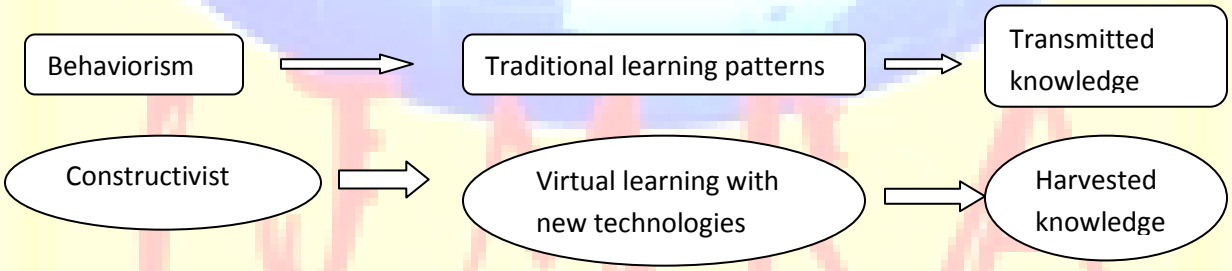
Thus teachers in a constructivist classroom, as facilitators create situations in which the students will question their own and each other's assumptions and also the constructivist teacher creates situations in which he or she is able to challenge the assumptions upon which traditional teaching and learning are based. The teacher at the constructivist level of knowing and thinking, continually reevaluate the assumptions about knowledge; the attitude towards "the expert" is transformed; not troubled by ambiguity but are enticed by complexity; and that takes to a never-ending quest for truth and learning where truth is seen as a process of construction in which the knower participates.

Basic essentialities for the transformation of a behaviorist teacher to a constructivist teacher

Becoming a constructivist teacher may prove a difficult transformation since most instructors were prepared for teaching in the traditional, objectivist manner. It "requires a paradigm shift" and "requires the willing abandonment of familiar perspectives and practices and the adoption of new ones" (Brooks and Brooks, 1993, p. 25). First, teachers should focus on realistic approaches to solving real-world problems; The teacher must create learning situations, environments, skills, content and tasks that are relevant, realistic, authentic and represent the natural complexities of the 'real world'. Thus in this way the teacher sets up problems and monitors students' exploration, guides the direction of student enquiry and promotes new patterns of thinking by inquiring about students understanding of concepts before sharing their own understanding of those concepts. Second, teachers should pay attention to individual differences

in learning. This is especially true when each student is unique and he or she comprehends information at different pace and ease. Taking into account these individual differences, teachers must take the initiative to engage them in active learning. Third, teachers must constantly stress conceptual interrelatedness, providing multiple representations or perspectives on the content and for this they should provide tools and environments that help learners interpret the multiple perspectives of the world. Fourth, they should support collaborative construction of knowledge through social negotiation by fostering reflective practice and focusing on knowledge construction, not reproduction.

As a conclusion, this topic on the constructivism theory of learning brings into discussion the many advantages of this learning theory. Educational curricula and teaching methods are changing. One component of the current redevelopment of all subject area curricula is the change in focus of instruction from the transmission curriculum to a transactional curriculum. In a traditional curriculum, a teacher transmits information to students who passively listen and acquire facts. In a transactional curriculum, students are actively involved in their learning to reach new understandings. Thus constructivism provides an environment where learners harvest knowledge through self-controlled learning platform (Gray et al., 2003) as compared to objectivism that transmits knowledge from teacher to student.



Benefits of constructivism:

Constructivist teaching fosters critical thinking and creates active and motivated learners. Zemelman, Daniels, and Hyde (1993) tell us that learning in all subject areas involves inventing and constructing new ideas. They suggest that constructivist theory be incorporated into the curriculum, and advocate that teachers create environments in which children can construct their own understandings. Twomey Fosnot (1989) recommends that a constructivist approach be used

to create learners who are autonomous, inquisitive thinkers who question, investigate, and reason. A constructivist approach frees teachers to make decisions that will enhance and enrich students' development" in these areas. This demonstrates that constructivism is evident in current educational change. Education works best when it concentrates on thinking and understanding, rather on rote memorization. The constructivist learning is transferable. In constructivist classrooms, students create organizing principles that they can take with them to other learning settings. Students learn how to articulate their ideas clearly as well as to collaborate on tasks effectively by sharing. Thus they exchange ideas and learn to negotiate with others and to evaluate their contributions in a socially acceptable manner.

As a result of the several benefits derived from constructivism the teachers in a new defined role have to adopt new pedagogical approach that leverage constructivism in classroom settings.

Pedagogical approaches adopted by the constructivist teacher:

Most approaches that have grown from constructivism suggest that learning is accomplished best using a hands-on approach. Learners learn by experimentation, and not by being told what will happen. They are left to make their own inferences, discoveries and conclusions. It also emphasizes that learning is not an "all or nothing" process but that students learn the new information that is presented to them by building upon knowledge that they already possess. It is therefore important that teachers constantly assess the knowledge their students have gained to make sure that the students' perceptions of the new knowledge are what the teacher had intended. Teachers will find that since the students build upon already existing knowledge, when they are called upon to retrieve the new information, they may make errors. It is known as reconstruction error when we fill in the gaps of our understanding with logical, though incorrect, thoughts. Teachers need to catch and try to correct these errors, though it is inevitable that some reconstruction error will continue to occur because of our innate retrieval limitations.

In most pedagogies based on constructivism, the teacher's role is not only to observe and assess but to also engage with the students while they are completing activities, wondering aloud and posing questions to the students for promotion of reasoning (DeVries et al., 2002). Teachers also intervene when there are conflicts that arise; however, they simply facilitate the students'

resolutions and self-regulation, with an emphasis on the conflict being the students' and that they must figure things out for themselves. Specific approaches to education that are based on constructivism include:

Constructionism

Constructionism is a learning theory supported by Seymour Papert of the MIT Media Lab that supports the philosophy that learners "construct knowledge structures" and that they learn best by "doing and making". Constructionism encourages exploration and discovery. The theory place the teacher in the role of guide or facilitator. Individual learners construct mental models of their ideas and information to understand the world around them. Constructionists would say that learners create artifacts that reflect their learning. In this sense, constructionism is connected with experiential learning.

Reciprocal Learning

Two teach each other. Reciprocal teaching is a cooperative learning instructional method in which natural dialogue models and reveals learners' thinking processes about a shared learning experience. Teachers foster reciprocal teaching through their belief that collaborative construction of meaning between themselves and students leads to a higher quality of learning (Allen, 2003). Students take ownership of their roles in reciprocal teaching when they feel comfortable expressing their ideas and opinions in open dialogue.

Collaborative learning

Collaboration is a philosophy of interaction and personal lifestyle where individuals are responsible for their actions, including learning, and they respect the abilities and contributions of their peers. Cooperative learning, a more teacher structured and highly recognized process of collaborative learning, is a practice that encourages collaborative behaviors among groups of individuals.

Critical Exploration

In this method teachers find ways to encourage their students to explore the subject matter and express their thoughts on the material (Duckworth, 2006). Teachers critically explore student learning.

Metacognition

Metacognition is fundamental to the ability of individuals to learn at all ages and "involves three aspects: control or self-regulation; knowledge of one's own thought processes; beliefs and intuitions ". Simply, metacognition is the ability to monitor one's current level of understanding, decide whether it is adequate, and seek out and develop new approaches to understanding.

Cognitive Tutors

A cognitive tutor is an intelligent tutoring system which develops a cognitive model of a student as he or she interacts with the program, providing problems and individualized instruction based on this model.

Cognitive apprenticeships

Cognitive apprenticeship is a theory of the process where a master of a skill teaches that skill to an apprentice. Constructivist approaches to human learning have led to the development of a theory of cognitive apprenticeship. In cognitive apprenticeship students can observe, enact, and practice the skills with help from the teacher.

Conclusion:

Thus in today's time, there is a need for student centered learning in which the teacher acts as facilitators thereby encouraging the students' to actively participate in the teaching and learning process. If students see the learning environment as a safe place, where they are given personalized attention, as well as encouragement to try more, students will be more motivated to learn and be successful The characteristics of teachers outlined in this paper are sustained by strong arguments based on the constructivism theory of learning.

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