

A Critical Analysis on Constructive Learning for Its Effective Usage in Classroom Situations

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Abstract:

Constructivism, which emerged in the second half of the 20th century, is a recent theory introduced to the world of education. Presently, educational psychologists motivate teachers and teacher educators to practice constructivist principles in classroom situations in order to produce more suitable people to the world of work with 21st century competencies. But it seems that the system has still not been able to meet this expectation due to several issues. A major problem is that teachers' knowledge and attitudes are not rich regarding both the theoretical and the practical aspects of constructive teaching-learning process as its major counterpart. Hence, my aim is to discuss how to be a successful constructivist teacher having understood its basic principles as well as the characteristics of a learner who study in a learner-centered classroom in order to create more effective constructivist leaning environment by overcoming common criticism which has emerged against constructivism. The main body of this paper discusses the outstanding features of a constructivist teacher who implements a constructivist teaching learning environment while giving an answer to common criticism against the constructive teaching learning process. When reaching this objective, it is expected to conduct the search from critical and analytical perspectives along with descriptive and explanatory methods with the research works of previous scholars. Furthermore, this research would contribute to the enhancement of the knowledge of teachers, principles, teacher educators, curriculum developers and policy makers on both practical and theoretical aspects of constructivism to implement constructive teaching locally and internationally, as well as empowering them to find solutions for common criticisms against constructivist learning.

Key words: *constructivism, classroom, learner, teacher, teacher educators*

I. INTRODUCTION

In the first phase, (traditional education system) we had a teacher-centered education and this education was presented as giving knowledge. This is called the school's "transmission role". After some time, the teacher's role moved from transmission to transaction where the teaching learning process was accepted as an exchange of knowledge with dialogue. Since these approaches were subjected to criticism, educationists wanted to develop new teaching methods which would assign students active role. In this effort they emphasize transformational role of the teacher where teacher assist learners to explore knowledge while he or she performs number of roles as guide, facilitator helper and mentor. Presently this child centered learning is identified as constructive learning.

Constructivism is a modern psychological school which has emerged since the second half of the 20th century. Constructivist pedagogy is informed from the work of many scholars from east and west; examples are, to name a few, John Dewey, Jean Piaget, Jerome Bruner, and Lev Vygotsky in modern psychology and Gautama Buddha, Nagarjuna, Dalai Lama, ThichNathHanh, and Suluk Sivaraksa in Eastern Education (Bhandari undated). Bhandari further says that the Gautama Buddha from the east and John Dewey from the west have been considered as the foremost constructivist thinkers with regard to knowledge constructivism (Ibid) Constructivism can be introduced as a further development of western education psychology. There are five basic themes that constitute the essence of constructivism: (A) Active

agency (B) Order (C) Self (D) Social Symbolic Relatedness and (E) Life span (<http://www.ncbi.nlm.nih.gov/pmc/articles/pmc-14147>, 25.04.2015).

The theory of constructivism suggests that learners construct knowledge out of their experiences. However, constructivism is often associated with pedagogic approaches that promote active learning, or learning by doing. Student-centered, learner-centered, discovery-based, self-directed learning are some terms that are used to introduce to classrooms dominated by methods promoting students' active participation.

Constructivism postulates that knowledge cannot exist outside the mind, truth is not absolute, and knowledge is not discovered but constructed by individuals based on experience (Fosont, 1996). Moreover, it is pointed out that constructivism is a theory of learning, not a theory of teaching. If it is a theory of learning teachers should find most appropriate teaching methods with suitable strategies as he or she can awake intellectual potentialities of the learner. With regard to constructivism, Richardson (1997) maintains that individuals are assumed to construct their own meanings and understandings, and this process is believed to involve interplay between existing knowledge and beliefs and new knowledge and experience. Viewing of making meaning through previously constructed knowledge implies that learners are intellectually generative rather than empty vessels waiting to be filled; instruction has to be focused, primarily, on learners' thinking, and the focus of intellectual

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authority resides on the discourse facilitated by both teachers and students (Bhandari, undated). Social constructivism views each learner as a unique individual with unique needs and backgrounds. The learner is also seen as complex and multidimensional. Social constructivism not only acknowledges the uniqueness and complexity of the learner, but actually encourages it. Vygotsky's socio-cultural theory contributed much to the development of constructivism by introducing research concepts such as, the zone of proximal development, more knowledgeable others, inter-subjectivity and scaffolding.

II. TEACHER'S AND STUDENT'S ROLE IN THE CONSTRUCTIVIST CLASSROOM

In a constructivist classroom, the teacher's role as well as students' roles has changed in many ways. The teacher is not the sole agent of the classroom but s/he should think that learning does not occur in a vacuum while she or he is playing a major interactive role with both the learner and the learning environment. Instead of giving a lecture the teacher in this theory functions as a facilitator whose role is to aid the students when it comes to their own understanding. The competent teacher understands the differences between the teacher and the facilitator, where as teacher s/he gives a didactic lecture that covers the subject matter, and as a facilitator s/he helps the learner to get to his or her understanding of the content. This dramatic change in the role implies that a facilitator needs to display a totally different set of skills than a teacher. A teacher tells, a facilitator asks; a teacher lectures from the front, a facilitator support from the back; a teacher gives answer according to a set curriculum, a facilitator provides guidelines and creates the environment for the learner to arrive at his or her own conclusion; a teacher mostly gives a monologue, a facilitator is in continuous dialogue with the learner. The teacher accepts learners as active seekers of knowledge as well as he or she motivates them to develop their potentialities by themselves. In constructivist teaching teacher is also a helper. He or she helps students where necessary. Students in learner centered classroom are independent. They should be encouraged to ask questions and seek answers rather than depend all the time on knowledge coming from teacher. They learn how to observe, ask questions from others who might know the answers, hypothesize, sort out information and learn from each other through discussion on what they have discovered. Moreover, the teacher is vigilant over the questioning process. The constructivist teacher uses fact-based questions as entries into thinking-based questions, avoid yes/ no and leading questions, leave enough time for students to think about the answer, ask when purposeful, brief and sequenced questions, monitor how students respond to student answer, be away of when it is best to pose a question to the entire class or to a particular student, encourage students to ask questions (Santrock, 2006). In this type of class students have many firsthand experiences. In a constructivist classroom, students also need technological experience like how to use the internet to discover things (John, 2000).

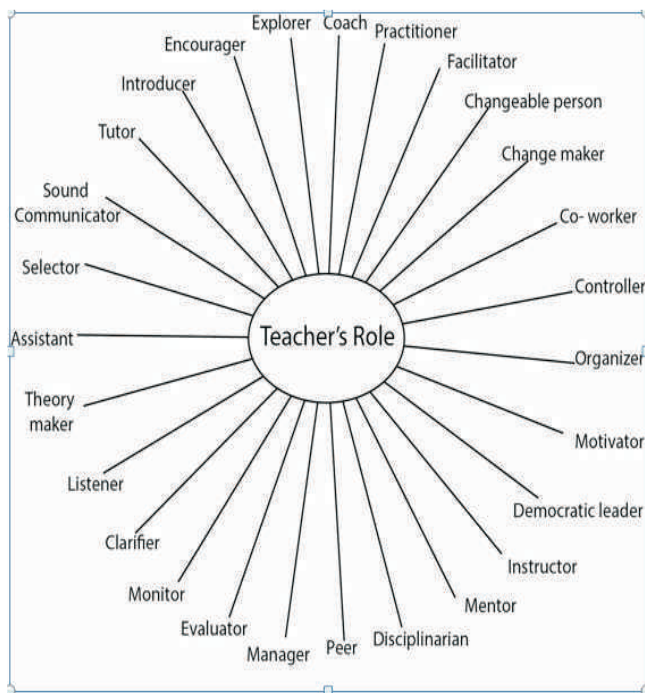


Fig. 1. Teacher's Role

A teacher who creates a child-centered learning environment is sensitive to children's readiness, to individual differences and to the capability of students to construct knowledge by themselves. Schools with such teachers can aim to help children to become autonomous learners. This may be a reason that all children should leave school with an ability to learn without a teacher. Primary school should do much to place children on the road to this goal (Holt, 1994).

The teacher's well-built communication skill together with the learners and the parents can take child-centered learning background to an effective direction. This type of skill is instrumental in presentation, explanation, questioning and leading discussion as well in listening to children and interpreting what they say. So that teacher can diagnose the problems which are holding up their learning. Moreover, the teacher should have the ability to explain classroom situations and some subject matters, to clarify issues as well as to demonstrate (Nias, 1989). Since, even one hour lecture paves the way to the awakening of constructive ideas of students', the communication skills of the teacher should be a big part of the teacher's personality. Furthermore, not only the teacher exhibits the skills necessary for communicating ideas to student clearly, but they must also communicate with parents, other teachers, other administrators and their communities. They must be open, approachable and diplomatic in conveying information. In a technologically oriented world these teachers use contemporary modes of communication like email and interaction websites in addition to gather traditional means of communication. Elizabeth showed three factors which are important in contributing to effectiveness in making an explanation. They are continuity, simplicity and explicitness. (Perrot Elizabeth, 1982)

The planning abilities of a teacher can also affect the child-centered teaching learning process. Lesson plans should be arranged under the three main domains; cognitive, affective and psychomotor, as constructivist learning occurs with target action verbs. Not only that, but the teacher should also organize the mental and physical environment of the classroom as suited to the learner-centered education. In this case, the teacher should consider how s/he wants children to be seated, how she will arrange materials so that children can find what they need without constant reference to him/ her. Specifically, teacher should know how to plan discovery learning, cooperative learning, peer learning, and group learning. Group learning should be organized with different roles: encourager, praiser, gate keeper, coach, question commander, checker, task master, recorder, reflector, quiet captain and materials monitor in the accepted frame (Kagan, 1992). Assessing and recording children's progress is also very important when making a learner-centered class- room. Teachers who are unable to understand variations in students fail to make child-centered learning background due to their lack of proper implementation of strategies. Teachers should know how children learn and what motivates them both collectively and individually. The teacher needs specific information about each child. He needs to know something about his or her personality and learning style, how each child learns best, to be aware of the kinds of experiences his or her children have, so that s/he can match his or her teaching to them. S/he also needs to know the stage of development each child has reached and his or her particular abilities (John, 2000). Classroom control is a major part of a student-based education because group learning and peer learning are given an important role and students are more active. They take part into dialogues, raise questions, provide answers, clarify chaotic situations, design new learning situations, fill the gaps, interpret some complex terms and ideas, invent new learning outcomes, plan the lesson for the next step, organize and give meaning to the lessons that have been implemented by the teacher, control the indecent behavior of some students, conclude and summarize the lesson. In such cases, it is clear that a child-centered classroom is full of student participation, so there may be a noisy environment in the class room. The teacher should act as a disciplinarian. There are more advantages in bringing together teachers and students by engaging them into group works towards a common goal (Webb and Vulliamy,1996).It is the view of social constructivists that students build up knowledge with social experiences; they gather and engage in the learning process with shared understanding (Bodrova & Leong, 2007). This is the key point which shows the major difference between cognitive psychologists and social constructivists. Therefore the teacher should create opportunities for the students to share their experiences among their peers as successful constructive teachers. Furthermore, social constructivists argue that sharing and involvement with other creates provide opportunities for students to evaluate and refine their understanding as they are exposing to the thinking of others (Gauvian & Preze, 2007). Following concept maps provide further clarification how teacher and the student should play their roles in a learner centered classroom.

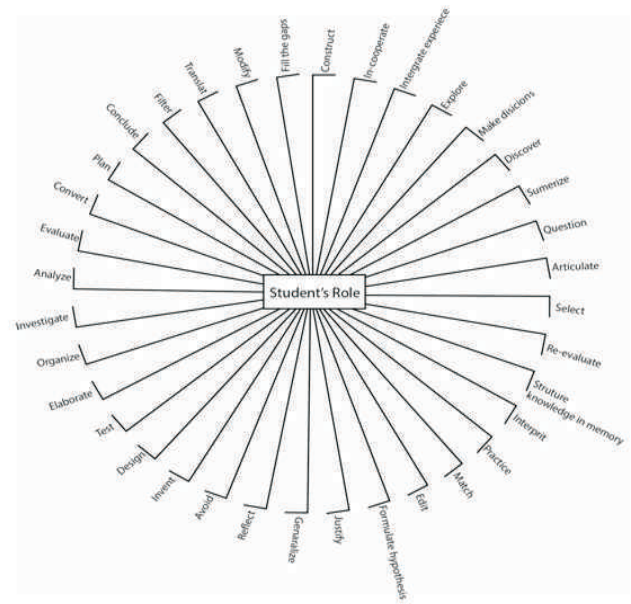


Fig. 2. Student's Role

III. TEACHING STRATEGIES THAT CAN BE PRACTISED BY A TEACHER IN ORDER TO BE SUCCESSFUL IN CONSTRUCTIVE LEARNING

A teacher who expands knowledge about constructivism associates relevant principles and strategies that enhance the student-centered learning atmosphere in order to motivate children to engage into new learning experiences by matching previous experiences. The constructivist teacher views that new information is most easily acquired when people can understand things they have already learned. In addition to that, as we discussed above, the teacher who considers the basic concepts, active participation, real world experience, firsthand experience, interaction and collaboration among learners, existing knowledge, previous knowledge, help from more knowledgeable peers, construction of knowledge through social interaction, guidance, culture and social context when planning a lesson should select the proper teaching strategies to create an effective child-centered learning environment where the following strategies could be practiced: *Problem based learning, essential questions, discovery learning, peer learning, group learning and cooperative learning* for creating a better learner-centered teaching learning process. In addition to that, teachers and teacher educators should focus their attention on Vygotsky's key concepts of *zone of proximal development, inter-subjectivity, and scaffolding*.

Problem based learning which emphasizes real life problem solving strengthens child-centered learning. The curriculum built around problem-based learning exposes students to authentic problems that occur in everyday life. *Essential questions* are questions that reflect the heart of the curriculum, i.e. the most important things that students should explore and learn. Essential questions perplex

students, cause them to think, and motivate their curiosity. *Discovery learning* is learning in which students construct an understanding on their own. This learning stands in contrast to the direct instruction approach (teacher-centered). In discovery learning, students have to figure out things for themselves. The philosopher John Dewy (1933) and the cognitive psychologist Jerome Bruner (1966) promoted the concept of discovery learning by encouraging teachers to give students more opportunities to learn on their own. In their view, discovery learning encourages students to think for themselves and discover how knowledge is constructed. It also feeds their natural curiosity and inquiry.

Teachers facilitate discovery learning by providing students with stimulating activities that activate their natural curiosity. According to Bredman (1982) and Galson (1989), discovery learning is especially effective in activity-based discovery learning science class compared to the traditional direct instruction science class. However, most discovery learning approaches used in schools today do not involve "pure" discovery learning. In pure discovery learning, students are encouraged to learn on their own and instruction is minimal to nonexistent. Sometimes direct instruction can get the job done more quickly (Van Lehn, 1990). Nevertheless, learning can be enhanced when the learner has an opportunity to interact and to collaborate with others on instructional tasks. Guided discovery learning is an extended occasion of discovery learning. In guided discovery learning students are still encouraged to construct their understanding with assistance from the teacher in the form of guided questions and directions. To some educationist, in mathematic activity based learning enhances critical thinking rather than memorization of formula (Sumeet, 2015).

Tutoring is another learning experience a constructivist teacher can introduce for students who are not doing well in some subjects since tutoring is basically a cognitive apprenticeship between an expert and a child or between a more skilled child and a less skilled child. The teacher can provide occasions for them to play both roles, that of tutor and of tutee. In peer tutoring one student teaches another. In *cross-age peer tutoring*, the peer is older, whereas in *same-age peer tutoring*, the peer is a class mate. According to psychologists cross-age peer tutoring usually works better than same age peer tutoring. As social constructivism has argued, cooperative tutoring results in the highest achievement (Madrid, Canas & Ortega 2007). In some instances, the tutoring benefits the tutor as well as the tutee, especially when the older tutor is a low-achieving student (Santrock, 2006).

Vygotsky's social constructivism has contributed in important ways to the development of constructivist theory in the field of educational systems. Constructivist teachers should understand Vygotsky's key concepts of 1) *zone of proximal development* which refers to as a range of task that child cannot yet handle along but can accomplish with the help of adults and more skill peers, 2) *inter-subjectivity*: a process whereby two participants who begin a task with different understanding arrive at a shared understanding, 3) *scaffolding*: changing the quality of support over a teaching session in which adults adjust the assistance to fill the current level of performance.

The fourteen learner-centered principles developed by American psychological Association encourage teachers to help students to construct their understanding, set goals and plan, think deeply and correctly, monitor their learning, solve real world problems, develop more positive self-esteem, control their emotions, motivate internally, to learn in a developmentally appropriate way, collaborate effectively with others, evaluate their learner preferences, meet challenges in standards (Feng, 1996).

IV. AN ANSWER TO CRITICISM AGAINST CONSTRUCTIVE LEARNING

To critics, constructivism gives much more attention to the process of learning (such as learning creatively and collaboratively) than to academic content (such as facts of history) (Hirsch, 1996). Here, I suppose, it is not a reasonable criticism regarding constructive learning since it pays enough attention to the process of learning as well as to academic content. The amount of learning experience which is given to the learner is decided by the teacher whatever the subject he or she teaches. Furthermore, the teacher is free and responsible to contribute facts and organize the learning process as he or she can protect the quality of constructive learning having understood its essence. Sometimes one or two hours of lecture may awake constructivist ideas in the students. Even though teachers can present the lecture with some strategies to reduce the amount of lecturing method by preparing, keeping the lecture short and intersperse it with questions and activities, making the lecture interesting and exciting, arousing curiosity, using simile, metaphor and humor while developing constructivist ideas in the students (Santrock, 2006).

Another common misunderstanding among some constructivist teachers is, the teacher should never give direct instructions to their students in teaching learning process. Students should be allowed to construct knowledge by themselves. In my opinion, the constructivist teacher should not forget that he/she is a good instructor. She should think by him/ herself how knowledge can be constructed without proper instructions. Knowledge appears where real instructions appear. Teacher's instructions are very essential in constructive learning since students start to build knowledge from where they have stopped. Therefore, the teacher should provide necessary instruction to begin learning from known to unknown. To some critics, learner-centered instructions work better in some subjects than in other. I reckon that it depends on the teacher's constructivist ideas. If the teacher is not a constructivist teacher, possibility of constructing creative ideas in students also may be low regarding any subject. A quality teacher plans each lesson as suited to the objectives and to the subject she needs to give as a learning experience. Creative teachers give instructions effectively without differentiating their method according to different subjects.

Critics also say that learner-centered instruction is less effective at the beginning level of instruction in a field because students do not have the knowledge to make decision about what and how they should learn. When students are taken from known to unknown (previous experience to new experience) the teacher provides good answers regarding this

criticism. Whatever the lesson or the age of the students at least there should be simple background knowledge with learner which was acquired with the age of previous leaning situations.

Further critics stress that there is a gap between the theoretical levels of student centered learning and actual application (Airasian & Walsh, 1997). I believe that this is not an error of constructivist learning but it is an error of the teachers who practise teaching in a constructivist classroom without understanding its basic concepts and the characters of their students. Constructivism should be applied where it can be used. Teachers should know that constructivism is not a teaching method and it's a theory that can be practised with any subject and teaching method at any stage in order to help learners to collect effective competencies.

V. CONCLUSION

It is important to point out that constructivism is a learning theory and not a teaching method. If the teacher does not understand his or her role as well as the students' role in a child-centered learning environment definitely, he/she will fail to perform his/ her role effectively. To avoid this bad situation the constructivist teacher should understand the basic theory, principles strategies and needs of constructive learning. In the light of this research finding, it can be concluded that the learner who comes to a teacher is not a passive object but s/he is rich in many potentialities. A constructivist teacher can help him to awake those potentialities with sound competencies to contribute to meet both local and global needs. Moreover, updating knowledge by studying theory and principles regarding constructivist learning, a competent teacher becomes an important role model to fellow professionals. In addition, s/he would able to find new solutions to criticism which have emerged against constructivist learning. Finally, the educational field will create a better academic atmosphere required by the current national and global world.

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