

CONSTRUCTIVISM THEORY OF LANGUAGE TEACHING AND LEARNING

INTRODUCTION

There are several theories that are applied in education such as behaviorism, cognitivism, constructivism etc. Many educators especially teachers use the theories in the classroom based on their own roles. Each theory has its own different function and purpose and also has a little bit correlation with each other, for example behaviorism theory. In this theory, the teaching learning process focuses on the students centered not the teacher's one. It means that, if the teacher applies it in the classroom, it tends to create the passive students. They just absorb the knowledge from their own teachers.

Constructivism theory is the response to the behaviorism theory (asiaeuniversity, 2012:106). It means that the role of constructivism theory is in the opposite of behaviorism. The students' role is to construct their own understanding and knowledge of the world through experiencing things and reflecting on those experiences. It means that the students construct the meaning of certain thing by assimilating and accommodating through their own experience. It tends to create the active students. While the constructivist teachers encourage and guide the students in order to assess the activities which help them to get the understanding . The way the teacher guides the students can be conducted through questioning them in order it can create the situation in which the students construct the meaning of thing by themselves. Moreover the function of questioning is to regard the students as the expert learners.

The other function of constructivism theory is it can create problem solving, if the students find problem, they can discuss with other friends to get the solution. That is the point of view about constructivism theory. The next session will be the description of constructivism through the history, definition, types, principles, implementation in teaching learning process, the characteristics of learning, the characters of learners, strength and weaknesses, differences of constructivism with other theories and the comparison between traditional to the constructivist one.

History of Constructivism

According to asiaeuniversity (2012:146)"Constructivism is a part of cognitive revolution". Cognitive revolution is the name of an intellectual movement in the 1950s that

began with what are known collectively as the cognitive sciences and increasingly deliberated in the late 1960s. The term "cognitive revolution" began to be used to take advantage of an analysis of scientific revolution in general that was developed by Thomas Kuhn (Royer, 2005 in the asiaeuniversity, 2012: 146). The cognitive revolution was the response to the behaviorism (asiaeuniversity ,2012:106). As we know that, behaviorism was a theory that based on observable changes in behavior. Moreover, behaviorism was the theory in which central attention was in the teacher's role. It means that the character of the students in the teaching learning process was passive while the teacher was in the opposite. The students just absorbed the information from the teacher rather than constructed the meaning by their own selves. While, constructivism was a theory to learning in which learners were provided the opportunity to construct their own sense of what was being learned by building internal connection or relationship among ideas and facts being taught(Brich & Tombari, 1997 as cited in asiaeuniversity,2012: 144). It means that the character of the students in which the constructivism theory was applied was active. The teacher as the facilitator (give little guidance to the students). So, this is the reason why constructivism is a part of cognitive revolution that it becomes the response to the behaviorism.

Constructivism primarily is a synthesis of the ideas from philosophy, sociology, psychology and education (Lowenthal & Muth, 2008). According to Kanselaar (2002)"Constructivism is not a single concept but it can involve the following three aspects". They are epistemological, psychological and educational beliefs. Constructivism as a set of epistemological beliefs that is beliefs about the nature of reality, whether there is an independent reality. Constructivism as a set of psychological beliefs about learningandcognition (e.g that learning involves constructing one's own knowledge). Constructivism as a set of educational beliefs about pedagogy (e.g that one should allow the learners to define their own learning objective that knowledge emerges from constructive interaction between the teacher and the students or between collaborating students). Based on the history of constructivism comes from experts, I can infer that, in the beginning constructivism was derived from some aspects that were philosophy, sociology, psychology, education and epistemological beliefs. All of the aspects united into a general sense of constructivism that it was a theory of learning or making meaning that individuals created their own new understanding on the basis of an interaction between what they already know, belief, ideas and knowledge with which they come into contact (Resnick, 1989 in Richardson, 2003).

Definition of Constructivism

Constructivism is a theory of how learning occurs (Henson, 1996 in asiaeuniversity, 2012:143). It means that this theory determines how learning happens. It is one of the useful learning in which it determines the lives of learners; try to look for their own understanding

about something that they are curious to know. The ways to seek can be done through questioning of their knowledge and new discoverers. Constructivism as a learning theory learns about how people learn to construct something in their own understanding by relating the prior knowledge and new information. By doing this, a constructivist learners try to be an active creators.

Boris & Tombari (1996) in asiaeuniversity (2012:144) stated that constructivism is an approach to learning in which learners are provided the opportunity to construct their own sense of what is being learned by building internal connection or relationship among ideas and facts being taught. According to Cheeks (1992) in asiaeuniversity (2012:145) humans are not passive information receiver. Humans are active information receivers. They build network of information with their previous information and they assimilate or accommodate new knowledge with the prior information in order to build their own understanding of new information. From the two perceptions from two experts, I can infer that constructivism is a theory to help the learners to construct the meaning of thing. They try to create learners to be active to assimilate what is being learned and prior experience.

Constructivism as a theory of learning emerged from the work of cognitive psychologist such as Piaget, Vygotsky, and Bruner. With the development of cultural psychology, the two perspectives become dominant. They are individual and social constructivism. Individual constructivism focuses on the construction of meaning inside the person while social constructivism focuses on the construction of meaning among people.

Types of Constructivism

Constructivism is a theory of learning to help the learners to construct something based on their own understanding by assimilating prior knowledge and new ones. According to Kanselaar (2002) there are two major constructivist perspectives. They are Jean Piaget from Swiss and Lev Vygotsky from Russia.

1. Jean Piaget (1896-1980) Cognitive Constructivism as individual perspective

Piaget is a Swiss psychologist who describes knowledge development from a holistic and cognitive perspective, emphasizing that there are many channels that are used to construct understanding e.g reading, listening, exploring, and experiencing (Savery & Duffy, 1995).

Cognitive constructivism developed as a reaction to behaviorist and information processing theories of learning (Lowenthal & Muth, 2008). As the reaction to behaviorist, since constructivism tries to help the students as active learners while behaviorism is in opposite. In the information processing, the learner perceives stimuli encodes them into useful information then stores the information for later use while in the constructivism tries to assimilate the previous knowledge and the new one to be the current problem solving. In this case, cognitive constructivism tries to make a situation in which learning as the result of constructing based on individual perspective and his or her previous knowledge.

The development of the human intellectual can be processed through the process of adaptation and organization. Adaptation is a process of assimilation and accommodation. According to Cynthia et al (2005) the term assimilation occurs in which learners add new knowledge into their existing knowledge framework and accommodation occurs when individuals adjust to new information. In this case, I can infer that assimilation is the way to relate what has already know and prior experience while accommodation to correct the way relating to the new information.

Piaget also organizes scheme to produce the adult mind by using schemata. According to Brynes(1996) in asiaeuniversity (2012: 148) schemata or prior knowledge links organize our experience more efficiently for processing. It is important to produce the effective problem solving. Overall, Piaget's cognitive constructivism focuses on how the individual processes and relates new information to information that already in mind.

2. Lev Vygotsky (1896-1934) Social Cultural Constructivism (socio-constructivist perspective)

Vygotsky is a Russian psychologist who introduces the constructivism through socio-constructivist perspective. In this case, the theory of Vygotsky emphasized in the learning based on context through the interaction with others. According to Safery & Duffy (1995) constructing understanding through interaction with others in social environments in which knowledge is to be applied.

Vygotsky as the expert of constructivism in socio cultural perspectives assumed that the theory came from the theory of language, thought and mediation in social environment. According to Lowenthal & Muth (2008) pure social constructivists believe that learning occurs via construction of meaning in social interaction within cultures and through language.

Social constructivism classroom is rooted from Vygotsky's psychological theory that knowledge is not transferred from teachers to students but constructed in the students' mind (asiaeuniversity, 2012:152). It means that the social constructivism which rooted from Vygotsky's perspective can be applied in education field. In this case, the focus of knowledge doesn't come from teacher to students but how the students can construct by their own selves Here are the list of some characteristics of social constructivism classroom.

~ The goal is emphasized in collaborative meaning.

~ The role of teacher is as facilitator who monitors the students' thinking

~ The social interaction can occur in classroom

~ The curriculum that is applied in classroom can absorb the interest of the students and then assimilate it with their own cultures.

From the characteristics of social constructivism, it is important to emphasize to the social environments not within the individual's mind. Moreover, it is also important that the teacher and peers also have the significant role in the application itself. There are four tools for social constructivism. They are scaffolding, cognitive apprenticeship, tutoring, and cooperative learning (asiaeuniversity,2012: 153-154).

Scaffolding is the technique to increase the students' competence and to reduce the teacher's guidance.

Cognitive apprenticeship is the technique where the teacher's belief about the students' competence to show the best performance and to create the learning situation as well as possible

Tutoring is the effective technique to help the students' learning by giving explanation that can be done between an adult and a child or between a more-skilled child and less skilled child.

Cooperative learning is the learning by discussing something in group based on their own experience.

Those are the viewpoint of individual and social cultural constructivism .In the followings are the three primary propositions that characterize constructivism from a cognitive and social viewpoint (Safery & Duffy, 1995).

¶ Cognitive is seen as the tool for sharing the people's understanding about something that they want to know then they test it.

¶ The goal is to assimilate the people prior knowledge and the new one in order to construct new understanding.

3. Bruner (Constructivist theory)

In this case, Jerome Bruner, one of the psychologists of constructivism who supports the cognitive constructivism based on Piaget. It means that Bruner also has the same thinking about individual constructivism that it focuses on how the individual process occurs and it relates new information to information already in the mind. The theoretical framework of Bruner is that learning is an active process in which learners construct new ideas or concept based on their current or past knowledge. Moreover, the focus of Jerome Bruner in cognitivist constructivism is in instruction. So, in this case, the role of the instructor should try and encourage students to discover principles by themselves. The instructor and the students should engage in active activities.

There are three principles of instruction from Jerome Bruner(Meyer, 1998)

Instruction must be concerned with the experience and the contexts that make the students willing and able to learn (readiness).

Instruction must be structured so that it can be easily grasped by the students(spiral organization)

Instruction should be designed to facilitate extrapolation or fill in the gaps (going beyond the information given)

Bruner also uses discovery learning in translating cognitive constructivism principles in teaching and learning in the classroom. In this case, the teacher presents examples and the students work with the examples until they discover the interrelationship between the subject structure. Furthermore, Jerome Bruner also emphasizes in the importance of understanding

the structure of a subject being studied. Subject structure refers to the fundamental ideas, relationship, or patterns of the fields that connect all of the essential information (asiaeuniversity,2012:149). According to Bruner, learning will be more meaningful, useful and memorable for students if they focus on understanding the structure of the subject if they focus on understanding the structure of the subject being studied.

This is the application of Bruner's teaching technique in the classroom (asiaeuniversity,2012:149-150)

~ Firstly, present examples and non-examples of the concepts that you are teaching

Example: give example that include people, kangaroos, whales, cats, dolphins as examples while non-examples are chicken, fish, penguin

~ Secondly, help students see connections among concepts

Examples: ask questions such as these: what do we call things we eat? Food

Use diagrams, outlines and summaries to point out connections

~ Thirdly, pose a question and let students try to find the answer

Example: How could the human hand be improved?

What is the relation between the area of one tile and the area of the whole floor?

~ Fourthly, encourage students to make intuitive guesses

Example: Instead of giving a word's definition, say, "Let's guess what it might mean by looking at the words around it."

The Principles of Constructivism

There are some principles of constructivism that must be paid attention in applying this theory in teaching learning process (Simon, 1990)

1. Knowledge is actively constructed by the individual.

It means that knowledge is seen or viewed as learning in how the learners construct the meaning of something that can make sense to them. In other words, it creates the learners as active creators.

2. Learning is both an individual and a social process.

We find the meaning of learning through the interaction with others in natural contexts.

3. Learning is a self-regulated process

Individual's learning is determined by the inborn characteristics and external factors that influence them.

4. Learning is an organizational process that enables people to make sense of their world.

Learning is viewed as process to relate the prior knowledge and new one by assimilating and accommodating.

5. Cognition serves the organization of the experiential world, not the ontological reality.

In doing the term "learning" an individual has different ways, perspectives, life and the purpose of it. So, he or she has different result in interpreting the term "learning" that it is based on his or her experience.

6. Reality represents an interpretation.

To construct our understanding of the meaning of certain thing, we can't separate with the term interpretation.

7. Learning is a socially situated activity that is enhanced in meaningful contexts.

The term "learning" happens in social environments in interaction with others in meaningful context.

8. Language plays an essential role in learning. Thinking takes place in communication.

Language is seen as the tool to connect with what has been learning with component of language such as words, sentence etc. then combine it in order to create the effective communication.

9. Motivation is a key component in learning.

Motivation has significant role in learning if the learner has high motivation in learning, he will have the better result than the learner doesn't.

The Implementation of Constructivism in Teaching and Learning Process

As a theory of learning, constructivism focuses on the implication of "constructing new knowledge for learning" (Lowenthal & Muth, 2008). In this case, constructivism stresses in the center of learners especially for practice and learning rather than the teacher. This theory intends to construct the students' role in teaching learning process in order the students more active in the class rather than be passive that just absorbed the information from the teacher. Moreover through this theory is expected that the learning environment should emphasize on students directly, the importance of context, authentic problem and task, discovery learning, student's prior knowledge, group projects and discussion, student's choice and authentic assessment. There are some applications related of the constructivism approach that can be applied in the classroom in order it can improve the interest of the students in learning as the part of teaching learning process. They are discovery learning, inquiry based learning etc.

Discovery Learning

Discovery learning is one of the applications of constructivism. According to O'Donnell(1997) "Discovery Learning is an instructional method in which the students are free to work in learning environment with little or no guidance". This assumption from O'Donnell is also supported by Ryan & Muray (2009) who assume that discovery learning is problem based learning with minimal guidance". It means that through discovery learning the teacher gives opportunity to students to explore their selves by learning through the environment with little guidance from the teacher. There are some structures that must be paid attention in applying discovery learning. They are readiness to learn, intuitive and analytical thinking, motivates for learning. These structures must be moved from basic to advanced step.

Readiness to learn:

Any subject will be useful if the students have readiness to learn through discovery learning.

Intuitive and Analytical Thinking:

Analytical thinking consists of identifying step and finally find the solution to the problem.

Intuitive thinking is the students find the solution from their problem with little guidance from the teacher.

Motivate for Learning

If the students have motivation for learning, the result will be better than they who do not.

The examples of constructivism when it was conducting in the class are when students are given a math problem and asked to come up with a solution on their own, and when the students are given a scientific problem and allowed to conduct experiments.

Inquiry Based Learning

Inquiry based learning also the application of constructivism that can be applied in the classroom. According to Mayer (1997) "particularly inquiry based learning seeks to mediate the learning process and make this kind of cognition an object of classroom instruction". In inquiry learning the role of the students are as scientist or researcher. It intends to give the position to the students as professional scientist who masters certain science on the authentic inquiry activities. The activities that include in this learning are formulating questions, designing informative investigations, analyzing patterns, drawing inference, accessing evidence in responding the questions, formulating explanations from evidence, connecting explanations to knowledge and communicating and justifying claims and explanation. Moreover, there are 5 steps in conducting inquiry based learning(Mayer, 1997). Engagement with a scientific question, event or phenomena connected with their current knowledge, though at odds with their own ideas which motivates them to learn more. Exploration of ideas through hands on experiences, formulating and testing hypotheses', problem solving and explaining observations. Analysis and interpretation of data, idea synthesis, model building and clarification of concepts and explanations with scientific knowledge sources(including teachers)

Extension of new understanding and abilities and application of learning to new situations(transfer)

Review and Assessment of what they have learned and how they have learned it (metacognition).

The Characteristics of Learning in Constructivism Classroom

According to Seigel (2004) there are some characteristics of learning in constructivism theory. These characteristics are useful especially for students in taking the position in the constructivism situation. They are as follows:

Constructed => the students learn how to construct the meaning of thing or word through assimilating prior knowledge and new one to get new understanding.

Active => by studying constructivism, it creates the students become active creators.

Reflective => the students reflect what they already know to their real life

Collaborative => constructivism as the theory of learning to construct the meaning of certain word by discussing with the peers or others in group discussion.

Inquiry Based => study of constructivism to find the solution from the problem

Evolving => evolving is the temporary way to integrate the knowledge that is already gained to reduce invalidity.

The Characters of Learner in Constructivism Classroom

According to Can (2007) the other point that must be considered in applying constructivism in classroom is about the characters of the learner itself. In this situation, the teacher must create the character of the learners naturally such as feel responsible for their learning, have developed awareness, have developed autonomy, have developed goals for learning, have developed initiative, use strategies, accept the complexity of life, respectful to multiple perspectives and world-views, open minded, task oriented, process oriented, self-controlling, realistic, scientific, value generator, holistic, articulate, flexible, moderate, humanistic, innovative, social indulging into the experience, self-motivated, self-reflective.

Strength and Weaknesses

Constructivism is a learning theory which emphasizes in the students' role than teacher's. So, as a teacher who wants to apply the constructivism in his or her teaching learning process, he or she must consider the strength and weaknesses of it when it applies in classroom. The weakness of constructivism is where conformity is essential divergent thinking and action may cause problems. While the strength the learner is able to interpret multiple realities, and the learner is better able to deal with real life situation. If a learner can problem solve, they may better apply their existing knowledge to a novel situation. (Schuman, 1996 in Mergel, 1998).

Differences of Constructivism from other Theories

Constructivism is a language theory to help the students in constructing something based on their own understanding. It emphasizes in students' role than the teacher'. It is one of the language theories that gives contribution in education field. In this case, there are some language theories that give contribution to education field beside behaviorism such as cognitivism and constructivism. So, in the followings are the differences among them in order to users of this theory do understand with their own principles (Jung & Orey, 2008).

Constructivism

It emphasizes on how to construct the meaning of the word or thing based on their own understanding. It can be done through individual experience and schema. The role of the teacher is to ask the students to learn to construct meaning and to assimilate and accommodate the students' prior knowledge and the new ones.

Behaviorism

It stresses on students' observable behavior to create automatic learning includes the use of instructional cues, practice, and reinforcement. In this case, the role of the teacher in behaviorism theory is determines what type of cues that could produce the desired response, to create conducive situation to reach the target stimuli and to create environmental condition.

Cognitivism

It stresses on the process happens inside the human mind, acquisition of the language, and internal mental structure. In this case, the role of teacher is to understand the position of the students who have different experience that will influence to the learning outcome, to determine the manners that mostly used and which one is effective to organize the new information, to provide feedback in order to make the new information will be more effective and efficient.

The Comparison Between Traditional to the Constructivist One.

After compare constructivism with behaviorism and cognitivism. The next is the comparison between traditional and constructivist classroom when we compare from curriculum, teacher, students, materials, and assessment (Brooks and Brooks , 1993)

TRADITIONAL CLASSROOM

- a) Curriculum begins with the parts of the whole. Emphasize basic skills
- b) Strict adherence to fixed curriculum is highly valued
- c) Materials are primarily textbooks and workbooks
- d) Learning is based on repetition
- e) Teachers disseminate information to students, students are recipients of knowledge
- f) Teacher's role is directive, rooted in authority
- g) Assessment is through testing, correct answers
- h) Knowledge is seen as inert
- i) Students work primarily alone

CONSTRUCTIVIST CLASSROOM

- a) Curriculum emphasizes big concepts, beginning with the whole and expanding to include the parts.
- b) Pursuit of the student questions and interest is valued
- c) Materials include primary sources of material and manipulative materials
- d) Learning is interactive, building on what the student already knows
- e) Teachers have a dialogue with students, helping students construct their own knowledge
- f) Teacher's role is interactive, rooted in negotiation
- g) Assessment includes student works, observations and points of view, as well as tests.

Process is as important as product

- h) Knowledge is seen as dynamic, ever changing with our experiences
- i) Students work primarily in groups

CONCLUSION

Constructivism is a theory of learning in which the learners are provided the opportunity to construct their own sense about what is being learned by building the connection through experiencing things and reflecting on those experiences. This theory is the response to the behaviorism theory that tends to focus in teachers centered while constructivism stresses in students' centered. In constructivism theory, the students are active in the classroom. The role of teacher is as the facilitator. The way the teacher guides the students can be conducted through questioning. By giving question, it can create the students to conduct the meaning of thing by them.

There are two types of constructivism. They are cognitive constructivism and social cultural constructivism. Cognitive constructivism was developed by Piaget. He conceptualizes learning as the result of constructing based on individual's experience and prior knowledge. While social cultural constructivism was developed by Vygotsky. He assumed that constructing understanding through interaction with others in the social environment in which knowledge is to be applied. Although there is different assumption between them, but there is similarity that is both create the learners to construct the meaning of thing by their own sense by building the connection through experiencing.

The implementation of constructivism theory can be conducted in several learning such as discovery learning, case based learning, inquiry based learning, problem based learning, and project based learning. Discovery learning is an instructional method in which the students are free to work in learning environment with little or no guidance from the teacher. Inquiry

based learning as the other of application of constructivism theory. It emphasizes to the role of the students as scientist or researcher who masters certain science.

Overall, I can infer that constructivism theory is a good theory to create active students by building the connection between what is being learned and reflecting it through experience. The students will be enjoyable in teaching learning process. Moreover, constructivism promotes social and communication skills by creating a classroom environment that emphasizes collaboration and exchange of ideas.