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A lot of mistakes are occurring during the student centered learning environment and they must be seen as the richness of the learning process not as the deficiency of the student.

However, studies related to the mistakes are restricted. The aim of this paper is to investigate mistakes from the point of its importance and its place in the learning theories. Referring its role in learning process, this research tries to pay attention to the things that can be done for the mistakes in the further.

Mistakes should be categorized. Studies related to how teachers give feedback to the students who make mistakes should be conducted. So, it will be possible for us to understand the concept being guidance to students more effectively.

Key words: Mistakes, Teacher Education, Nature of Knowledge, Mistakes in the Teaching Theories, Being a Guide to Learning

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Introduction

Student-centered curriculums have been put into implementation in Turkey. Because of it nature, students centered instruction depends on constructivism. Constructivism is one of the most acceptable theories in recent years (Lerman, 1989). As every theory has, constructivist approach has also a variety of models such as 4-E, 5-E and 7-E regarding how to apply this approach in the classrooms (Çepni, 2008). In essence, each of these models require an introduction to draw the students' attention, a research regarding a fact, a concept or a phenomenon, the construction of the knowledge at the end of the association and explanation process and the evaluation of the learning process.

Constructivist models consists of three stages at the orjin; introduction, process and evaluation. Introduction part aims at drawing the students' attention and completing the inadequate of the students by establishing their previous learning. Due to the importance given the previous-learning, there is a close relationship between the introduction and evaluation parts. Introduction-evaluation parts point at looking into pre-learning and eliminating the inadequacies; that is, misconceptions while process part points at mistakes. In this research, it is found suitable to use these two concepts as mistake.

In this regard, one of the most important problems in crating student-centered learning environment is mistakes (Baki, 2006) . Establishing students' pre-learning, reminding basic knowledge on which new information will be constructed and eliminating misconceptions are essential. However, science is cumulative, spiral and mostly abstract due to its nature, which causes students to make mistakes because students are required to tell their guess and test themselves in a students-centered environment. If an instruction process were inspected, it would be seen that it is often interrupted by the mistakes.

Given the new curriculum, it is really difficult to establish and eliminate pre-learning in general and misconceptions at particular. This difficulty result from misconceptions' having different sources, their being individual, the lack of knowledge regarding fixing them and the lack of clarity in the studies aiming at eliminating them.

Another problem faced by the constructivists is mistakes. They increase teachers' anxiety and decrease their control over time management during teachers' creating students-centered environment.

Mistakes which we cannot call misconceptions are mostly faced during the process especially require computational process. In fact, it is natural to face with mistakes in a learning environment. Nevertheless, it isn't found anything except theoretical advices regarding how to react when teachers come across a mistake.

The teacher shouldn't answer the questions directly when s/he face with a mistake; s/he should ask questions directing the student to make him think and inquire. Unfortunately, reflections regarding what should be done in a real classroom environment couldn't be found. So, the infrastructure required to increase teachers and teacher candidates' knowledge regarding mistakes should be established. It will be useful to analyze the mistakes from the point of teaching theories, the nature of knowledge, constructivist models and its place in the researches and to make inferences depending on these by pointing what should be done for the mistakes. In this regard, the aim of this paper is to emphasize the things that should be done for the mistakes taking into consideration the studies regarding the true knowledge by pointing the place of mistakes and its existence in education. For this reason, the question the study is established as "Is there any knowledge of mistake?"

I) The Knowledge of Mistakes in Teaching Theories

a) The Knowledge and Mistake in Behaviorism: Behaviorist approaches explain the lack of realization of a behavior with person's carelessness, a failure in communication and mistakes in information source. It is impossible for the person to make mistakes in an ideal environment if s/he listens carefully.

Other students aren't required to see the mistakes. If they learn wrongly, explaining them and making them be careful will be enough for them. However, it can be possible to weaken the relationship by applying punishment when the wrong reaction occurs as a result of effect. The mistake can be prevented by establishing and changing the effect used for the reaction. Punishing a student making mistake can enable the others not to make the same by observing that.

b) The Knowledge and Mistake in Cognitive Approach: In addition to gaining behaviors in behaviorism, cognitive approach considers the process and individual differences.

1) Hierarchical Learning Theory of Gagne: According to this theory, learning process consist of 8 stages from simple to difficult. One mistake in one of the stages of this approach can cause mistakes in the following ones, which shows that learning environment has the potential for mistakes and misconceptions.

2) Learning theory of Jerome Bruner: According to the approach "learning through discovery", individual conceptualize and categorize the stimulus he come across. In other words, he tries to classify the concepts in terms of their characteristics and look for answer with common characteristic for each one.

3) Learning Theory of David Ausbel: The approach "teaching through presentation" give importance to how the students conceptualize present concepts and the degree of academic comprehension of the concept which will be use for making association. Consolidating what have been learned so far, reminding if necessary and eliminating misconceptions are essential.

4) Absolute Learning Theory of Bloom: Bloom concentrates on individualized learning. He thinks that the learning process should take place according to the objectives by determining the pre-learning. He claims that the learning environment should be reorganized depending on students' interests and wishes in addition to the deficiencies and pre-learning. Whether the students learn absolutely or not should be determined. That is, the approach implies the fact that sometimes absolute learning cannot e able to take place or sometimes misconceptions can appear.

5) Learning Theory of Jean Piaget: Students construct his knowledge at the end of his own experiences depending on his physical development, the level of his maturity, and his experiences. In this regard, the society the child is in and the culture wanted to be transferred are of great importance.

In concrete procession stage, the child need object to disintegrate the whole. Given the children in primary school are in concrete procession stages, it is not surprising their not

understanding or misunderstand abstract associations. It is a well known fact that the students make mistakes in numeric field lessons especially including abstract concepts in the first stage of primary school education. In this meaning, the mistakes should be also analyzed in terms of the culture.

In general, cognitive approaches accept misconceptions and argue that some modification should take place.

c) The Knowledge and Mistake in Constructivism: In a student-centered learning environment, the role of the teacher is not to teach the lesson. The teacher is expected to be a guide for the students (Sönmez, 1993, Ersoy, 2002; MEB Müfredat Geliştirme Süreci, 2007). However, guiding students for their understanding is described as a difficult and complex process. In their studies, Turan and Sayek stated the fact that it is complicated to write a prescription of when the teacher should interfere and to what degree it should take place (Turan, Sayek, 2006).

In addition to the misconception of cognitive approach, constructivism emphasizes the fact that it is very usual for mistakes to come out. Therefore, it argues that the learning environment should be analyzed carefully, the process of construction should be understood well and scientific knowledge should be obtained. To say more, may be there is nothing wrong or mistake. Just as, there isn't any fact (true). So, the way human being comprehends should be clear; then actions should be taken according to that.

II) The Changeable Nature of Knowledge and the Mistake: Today, though the basic structure regarding the source, existence and teaching ways of information is still the same, the point of views are changing. The viewpoints regarding what is true and what is wrong are also changing quickly. Hence, the nature of the knowledge causes the mistake itself.

In this regard, the nature of knowledge makes it essential to talk about the nature of the mistake just as the teachers' viewpoints of information affects teaching-learning activities.

III) Spiral Curriculum and its Susceptibility to Mistakes: Every piece of knowledge in the new curriculum is taught through making associations with the previous concept, subject, unit or the subject of the previous years in the frame of spiral and cumulative structure (Ersoy ve Ardahan, 2003).

This spiral and abstract structure make it necessary for a concept to be constructed by making associations with a lot of other concepts. Therefore, understanding from which process an individual goes through in order to construct the information and understanding the ways of he constructs the information becoming more and more difficult, which mostly causes wrong constructions.

Student-centered instruction makes it difficult to conduct a lesson without facing with a mistake when its nature depending on generalizations and guess and the nature of spiral structure integrate. That is, the lesson starts with a sample case or an example and the student is required to obtain the definition, to guess the nature of the process and make a generalization following. In this sense, it is natural for a student to make mistake while guessing of making generalization through just one example.

Conclusions and Suggestions:

As it is seen above, it is clear that teaching theories hasn't got a clear viewpoint related to mistakes because of their point of views about instruction. However, the nature of knowledge and the spiral and abstract structure of scientific information are susceptible to mistakes. Nevertheless, because the teacher is in the role of a guide in a student-centered learning environment, the essentiality of using different techniques apart from telling the students that they are wrong or telling them the right answer is emphasized in most of the theoretic studies.

For these reasons;

a) Studies concerning the existence, source and the nature of mistake and its role in the instruction should be carried out.
b) The techniques used by the teacher while dealing with the mistakes should be determined.
c) The factors affecting the way teacher use the techniques should be established. By this way, it will be possible to create techniques and model for dealing with the mistakes.

The existence and the source of mistake, its role in instruction and establishing the ways used to deal with them will be useful for teachers and teacher candidates to gain when they are a university student. These studies will help teachers and teacher candidates to create a classroom environment in which they can feel themselves comfortable and these studies can

be used in order to create a student-centered learning environment where the mistakes are inevitable.

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