

## Chapter 20

# Structuring of Knowledge and Cognitive Load

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### ABSTRACT

*The objective of this part is to explain the process of knowledge structure and how cognitive load to be influenced on this process by theoretical way in the process of education learn and in the rank of winning the student's knowledge. Cognitive load is defined such that it is in the working memory border, it has got inner, outside and effective load element, it is taken to control by different education project and when a mission propose, a structure come into being. Cognitive load is affected from education environment and education materials on teaching learning process. When you want to use it in an effective way using education environment and education materials one of the fundamental challenges is cognitive load. The excessive cognitive load can be explained that the users can be drown and minds can be mixed because of the choices which have of a lot of component, road and the vehicle. Because of this reason, in this part it is discussed what can be done in order to take the extreme cognitive load over by understanding cognitive load concept. For this reason in different environments the discovery which obtains from scientific works, takes importance the efforts that can take the knowledge understandable and can reach the knowledge by easy way.*

### INTRODUCTION

Today; accessing information in the fastest and most accurate way is one of the major needs of human beings. While people may attain information production and search in an easy way, it could be

sometimes a demanding activity. Therefore; the importance of findings collected by in the view of scientific studies for individuals to reach the information they want, has raised. How to learn information is one of the significant questions that distract people's minds for a long time.

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## **MAIN FOCUS OF THE CHAPTER**

### **A. Knowledge Structure**

The researches subject of how you learn the knowledge exposed this problem. While some students have got better understanding level, others have got less understand level. At his point both cognitive psychologists and educationalist pointed on the knowledge construction. Herbert and Burt (2003) who did a lot of Works on the knowledge construction, shed light on how the knowledge can be understandable. On the knowledge construction, Piaget well upon the importance of the fitting to the logic rules and he explains the relation with language development. According to Piaget language is an extension of idea. When idea develops the language develops itself. When the child's actions that are on the objects and real life, increases their physical actions replace the mental action and is internal by providing the actions to thoughts. For example if a child develops length concept he will use long and short word in a correct way. Vygotsky states that the knowledge's construction related to a person's social interaction and his experience. At this point both a child and environment are active. The construction takes a shape with both cooperation when little children make on observation make imitation or take a help from an expert, some of the skills are gained in process by natural and chance. Also Stanford, at the knowledge construction, explains with the imitation of social cooperation. The imitation is a way that the people's ideas and their belief are followed. As you know similarity can be also explained two different existences or the reality has got a lot of same properties and the relations between them. Consequently, knowing features or reality can be possible with their distinguish between their resemble and different. The definition can be possible if internal construction pairs with sensorial conformity. So start out with resembles, it is formed the best example in mind

and is evaluated the relation between examples. By coming from these relationships, the categories that the skills and knowledge are organized and make groups are concepts (Martortella, 1986).

Human beings learn the concepts by realizing or not realizing. Person's experimentation and their actions on the objects are important on the development of their concepts structure. In order to hold a systematic memory structure for the person, their thought has to be classified and stored in categories. Facts are brought up by a procedure like observation, experiment, measurement and counting. However the knowledge that is gained by this way is chunk.

Children in general classify the skills according to their actions on objects in their life. Consequently knowledge is prepared and is prevented dispersion. In fact to take the memorial process and datum dispersion meaningful is to procedure the knowledge. For example, thousand data can be found like the sun rises every day, water boils at 100 C0. However we want to know some of the rules principles or laws that are dominated all of the relationships between facts. If we don't feel this desire and necessity the universe, the events that are singular and broken off can be seen aims. Consequently reaching from facts to generals are "producing a knowledge" (Özlem, 2003). However the concepts which are difficult arrange the thoughts and complex as to events are the main stone of the thoughts the concept is explained one word or a sentence that represent the facts categories.

Shortly summarizing the fact's groups similarity and commenting them, form the concepts. Their different is to mean abstract image that shored concepts to events and the facts to concrete.

The generalizations are the results of the concepts that comment similar and connected each other. Another mean, the concepts are the meaningful sentences of the concepts, fact and idea that comments their relationships. The event, concepts and generalization are construction of the knowledge. (Doğanay, 2002). In this way, "learn-

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