Behaviourism and Cognitive Learning Theories in Education

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With the evolution of psychology and sociology, people have started to have a better grasp of the way the learning ability of humans is supposed to happen. Learning frameworks were developed to comprehend the learning patterns of individuals and to understand how the human mind learns anything new (Capuzzi Stauffer, 2016, p.65).

These learning frameworks are based on the premise of how knowledge is absorbed and accumulated by a person, as well as the mechanism for retaining that knowledge. There are many factors that play an important role in the development of learning theories. For instance, prior experience, as well as cognitive, environmental, and emotional influences, also impact the learning ability of a person (Beck et al. 2015, p. 45). The two core learning theories that are going to be discussed during the course of this paper are Behaviourism and Cognitive Information Processing, which is also called cognitivism. While the theory of behaviorism was based on the fact that the changes in behavior trigger or complement the learning process, the cognitive theory talks about the fact that information processing leads to better understanding and retention of the problem (Beck et al. 2015, p.45).

Understanding the Theory of Behaviourism

Some of the background work for the theory of behaviorism was carried out by B. F. Skinner, and the main idea behind the theory was that of operant conditioning (Beck et al. 2015, p. 45). The theorists who were proponents of the theory believed that knowledge exists independently and outside of people (Beck et al. 2015, p. 45). The basic premise of this theory is that people are blank slates and that experience needs to be provided to these blank slates to ensure that their learning process can be augmented (Capuzzi and Stauffer, 2016, p. 65). The practitioners of the theory also tend to believe that an association between stimuli and responses occurs when new behaviours and changes are observed over time. As there is this association, there is bound to be some change in the behavior of the people (Beck et al. 2015, p.45).

Learning Process in Behaviourism

When one talks about the way the learning process is carried out in behaviorism, the key thing that needs to be considered is how objective observations change behavior (Capuzzi Stauffer, 2016, p.65).

The practitioners of this theory tend to believe that the learning process is simply an acquisition of a new behavior or change in the underlying behavior pattern of the individual (Beck et al. 2015, p. 45). The theory postulates that learning is supposed to begin when a cue or stimulus from the environment is presented. When that cue is presented, the learner is supposed to react to that stimulus. The idea is to make sure that there must be some sort of response to that stimulus (Beck et al. 2015, p. 45). Reinforcement involves consequences that establish the desired behavior, along with the results that the individual expects to obtain from it (Fleeson and Jayawickreme, 2015, p. 92). For instance, studying for a test and getting a good grade are examples of consequence and reinforcement according to practitioners of behaviorist theory (Beck et al. 2015, p. 45). The new behavioral pattern has to be learned quite a few times before one can be sure that it has become part of the overall learning process (Beck et al. 2015, p. 45). When there is a change in behavior, it signifies how the learning occurred with the passage of time (Beck et al. 2015, p. 45). Teachers tend to use behaviorism when they are rewarding or reprimanding students for certain behavior (Beck et al. 2015, p. 45). It has to be noted that behaviorism does not prepare the learner for problem-solving or creative thinking (Fleeson and Jayawickreme, 2015, p. 92). The learners are merely doing what they are told, and there is no initiative or improvisation to ensure that things are improved to an extent (Ashby and Valentin, 2017, p. 188). The learner is only able to recall the facts and the automatic response that they have prepared for things. At the same time, the whole learning process is restricted to performing certain tasks and not going beyond these tasks. Thus, at times, this learning theory stifles the learning process (Ashby and Valentin, 2017, p.188).

Cognitivist or the Cognitive Information Processing Theory

In comparison, cognitivist or cognitive information processing theory addresses the thought process behind a person's behavior (Fleeson and Jayawickreme, 2015, p. 92). Thus, rather than relying on the external stimuli, it talks about the importance of why the information that is processed and received by human beings is important rather than just merely responding to the external stimuli most of the time (Ashby and Valentin, 2017, p. 188). The main idea of the theory is that humans process the information they receive in a different manner. The changes in the behavior are going to be observed most of the time (Ashby and Valentin, 2017, p. 188). The changes, though, only act as an indicator of what is going on based on the thought process of the learner (Ashby and Valentin, 2017, p. 188). It has to be noted that one of the main premises of this theory is that the learner's mind functions like a mirror and that new knowledge and skills are reflected in that mirror (Payne et al. 2015, p. 3). One of the instances when cognitive information processing is being used is when the learner intends to play an active role when it comes to seeking ways to understand and process the information in the right manner (Fleeson and Jayawickreme, 2015, p. 92). The idea is to determine how to process what is already known and stored in a person's memory during a given time period (Ashby and Valentin, 2017, p.188).

Learning Process in the Cognitive Information Processing Theory

One of the key beliefs of cognitive learning theorists is that learning occurs through the internal processing of information (Ashby and Valentin, 2017, p. 188). The main contrast that can be seen with behaviorism is the fact that internal processes are the ones that guide learning rather than external stimuli (Fleeson and Jayawickreme, 2015, p. 92). The approach tends to pay more attention to what is going on in the mind of the learner (Hofmann and Otto, 2017, p. 89). The mental processes are the core focus of this theory rather than any behavior that can be observed from the onset (Fleeson and Jayawickreme, 2015, p. 92). Changes in behavior are observed, but they are only used as an indicator of what is happening inside a person's mind. A key aspect of the learning process in this theory is how experiences are reorganized (Fleeson and Jayawickreme, 2015, p. 92). New experiences can be acquired with the help of new insights, and old insights can be changed (Ashby and Valentin, 2017, p. 188). The idea is that learning is based on how changes in knowledge are stored in memory (Ashby and Valentin, 2017, p. 188). As a matter of fact, the change in behavior is only the starting point when it comes to the realization of the learning process (Montano and Kasprzyk, 2015, p. 124). For instance, the learning process is said to be completed when information is classified and chunked or when concepts are linked. Real-world examples can also ensure that clarity regarding some of the concepts used in modern education is achieved (Ashby and Valentin, 2017, p.188).

Comparing and Contrasting Theories

Looking at the way both of the theories are going to work out, the key thing that needs to be noted is how both theories have different rationales when it comes to the learning process. At the same time, behaviorist theories are about how learning is a process that is completely based on external stimuli. On the other hand, if one talks about cognitive theories, one tends to discuss the importance of learning as something that comes from within and is an internal process (Ashby and Valentin, 2017, p.188).

Which Theory is More Appealing?

Looking at the way both of these theories work out, there is rationality on both sides of the argument. While the behaviorist theory tends to give importance to the external environment, it has to be noted that it does not explain why different people who are exposed to the same learning environment are not picking up the same concepts. At the same time, it does not tend to explain the underlying fact of how important it is to make sure that the person develops the skill from within (Ashby and Valentin, 2017, p. 188). The cognitive theory becomes more appealing due to the fact that it gives importance to observation as well as the internal compartmentalization of the learning process (Ashby and Valentin, 2017, p.188).

Intelligence in Learning

When one talks about the host of literature regarding learning in recent days, one of the things that are emphasized a lot these days is the emotional side of learning. The sample and research carried out by the University have shown that empirical studies need to be conducted to ensure better skill development among students. At the same time, there are four main areas in which learning plays an important role in an individual's conceptual development. They include:

- Making sure that they bring about psychological adjustments to the changes in the environment around them.
- Ensuring that the quantity and quality of interpersonal relationships are appropriate
- Significant reduction in the academic performance of the students.
- The appearance of behavior that disrupts learning, as well as involvement in substance abuse

In the last few years, one of the key issues discussed regarding the role of intelligence in education has been the psychological well-being of students. The framework regarding the theory is that perception, assimilation, and the regulation of emotional processes are very important in the overall learning process. When the overall evaluation of these components was carried out, the conclusion was reached that the skill measurement of the people had improved to a great extent. Students who are better at controlling their emotional impulsiveness are more likely to be successful in the long run as far as their overall mental health and well-being are concerned.

Information Processing in Learning

For Cognitive Psychology, the action of the subject is determined by its representations. For the processing of information, these representations are constituted by some type of computation. The concept of learning in human beings and the way information is processed are more or less based on the way computers are supposed to operate. In other words, in certain ways, they work as a metaphor for the way information processing is carried out at the individual level among people. Psychological research carried out in recent years has focused on recognizing human behavior under different circumstances. Thus, enough attention has been placed on memory, perception, and the way patterns of recognition work out in people's behavior. The information processing model integrated contributions of the behavioral model within a cognitive scheme, highlighting the importance of internal structures as mediators of behavior.

The processing of information begins with the selection of stimuli in the sensitive register by virtue of the mechanisms of attention and selection. Once the information is selected, it is encoded and stored for short periods of time in the short-term memory. Retention and recovery determine the processing of information in long-term memory. Retention depends on the way in which the information has been encoded. The recovery is a program that involves the reconstruction and organization of the recovered material. Storage in long-term memory is achieved by assimilating the meanings of new

information into personal systems. Memory implies an effort towards meaning and memory, a construction. That is, memory is constructive, abstract, and based on meanings. The schemes have been rescued by current cognitive psychology. The new schema concept has a computational origin. That is, it has been rescued in the framework of studies on Artificial Intelligence. The schemes are the concepts available to the processing system. A schema is a data structure to represent generic concepts stored in memory. Therefore, schema theory is considered a theory of the representation and use of concepts stored in memory. It is a general theory of processing. All information processing depends on the activation of schemes.

Motivation as a Driver for Learning

Motivation plays a fundamental role in our learning. According to one study, motivation influences our performance in mathematics more than our IQ. Specifically, the researchers found that intelligence was strongly related to student achievement in mathematics but only in the initial development of the subject matter. Motivation and study skills were significant factors in the development of later mathematical skills. Students who felt competent were intrinsically motivated, used skills such as explaining, synthesizing, making connections with other materials, avoiding learning by memorization, and showed greater development in mathematics than those who did not feel motivated. The behavior of people can serve as an indicator to measure motivation. It is a fairly reliable indicator that teachers can use to estimate students' motivation and be able to act on it. Research has shown that interaction between teacher and student is more important to the learning process than structural factors, such as educational materials and class size. This relationship between student and teacher is important not only in the first school years but also later, when the challenges become greater.

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