ADOPTION OF LEARNING THEORY FOR EFFECTIVE LEARNING

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ABSTRACT

Theoretically, the paper considered learning theories and their adoption for effective learning. Learning occurs through a series of learning events. People learn from one another via observation, imitation, and modeling. People also learn through observing others' behaviours, attitudes, and outcomes of those behaviors. In other words, learning involves constructing one's own knowledge from one's own experiences. The study observed that learning tasks for intellectual skills are organised in a hierarchy according to complexity: stimulus recognition, response generation, procedure following, use of terminology, discrimination, concept formation, rule application, and problem solving. In the light of social learning theory, it is considered that "men's" cognitive and symbolic functioning is more important in acquiring new behaviour than the psychoanalytic theory. In the same manner, for cognitive strategies to be learned, there must be a chance to practise developing new solutions to problems. The study concludes that gaining attention, informing learners of objectives, stimulating recall of prior learning, presenting the stimulus, providing learning guidance, eliciting performance, providing feedback, assessing performance, and enhancing retention and transfer are conditions for learning that must be accomplished before the next in order for learning to take place. What distinguishes Tolman's theory of cognition from other theories is that it states that learning can occur without reinforcement. It was recommended in the paper that it pays to understand the connections between concepts and breakdown information with logical connections for the retention of material and better understanding.

KEYWORDS: Learning theory, Social learning theory, Instructional learning theory & Cognitive learning theory.

Introduction

Learning theories describe the conditions and processes through which learning occurs, providing teachers with models to develop instruction sessions that lead to better learning. These theories explain the processes that people engage in as they make sense of information and how they integrate that information into their mental models so that it becomes new knowledge. Learning theories also examine what motivates people to learn and what circumstances enable or hinder learning. Learning theory describes how students receive, process, and retain knowledge during learning. Learning theory and research have long been the province of

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education and psychology, but what is now known about how people learn comes from research in many different disciplines. Although there are many different approaches to learning, there are three basic types of learning theories: social learning theory, instructional theory, and cognitive theory of learning. Humanists also believe that learning is part of a process of self-actualization. They believe that learning should be internally motivated and driven by students' interests and goals, rather than externally motivated and focused on a material end goal such as test score or employment (Sharp, 2012).

Since knowledge is actively constructed, learning is presented as a process of active discovery. Social learning theory is increasingly cited as an essential component of sustainable natural resource management and the promotion of desirable behavioural change (Muro & Jeffrey 2008). This theory is based on the idea that we learn from our interactions with others in a social context. The role of the instructor is not to drill knowledge into students through consistent repetition, or to goad them into learning through carefully employed rewards and punishments. Behaviorism is primarily concerned with observable and measurable aspects of human behavior. In defining behavior, behaviourist learning theories emphasise changes in behaviour that result from stimulus-response associations made by the learner. Behaviorism is primarily concerned with observable and measurable aspects of human behavior. In defining behavior, behaviourist learning theories emphasise changes in behaviour that result from stimulus-response associations made by the learner.

Behavior is directed by stimuli. An individual selects one response instead of another because of prior conditioning and psychological drives existing at the moment of the action (Parkay & Hass, 2007). According to Clark (2018), behaviour and learning entail more than just responding to environmental stimuli and require rational thought and active participation in the learning process. Cognitivist teaching methods aim to assist students in assimilating new information into existing knowledge and enable them to make the appropriate modifications to their existing intellectual framework to accommodate that information. People are sometimes hesitant about learning theories because they believe they will be useless in the real world, but learning theories are widely applicable. The models and processes that they describe tend to apply across different populations and settings, and they provide us with guidelines to develop exercises, assignments, and lesson plans that align with how our students learn best. Learning theories can also be engaging. People who enjoy teaching often find the theories interesting and will be excited when they start to see connections between the theory and the learning they see happening in their own classrooms.

Theoretical Review

Social Learning Theory of Bandura (1925)

Bandura's Social Learning Theory posits that people learn from one another via observation, imitation, and modeling. The theory has often been called a bridge between behaviourist and cognitive learning theories because it encompasses

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attention, memory, and motivation. Bandura was regarded as the father of cognitive theory by all scholars (Bandura, 2006a). People learn through observing others' behaviours, attitudes, and outcomes of those behaviors. Bandura's social learning theory explains human behaviour in terms of continuous reciprocal interaction between cognitive, behavioral, and environmental influences on each other.

Bandura (1925) opined that apart from classical and operant conditioning, human beings and some animals also learn through social means. Bandura demonstrated that cognition plays a role in learning, and social learning theory has become more cognitive in its interpretation of human learning over the last 30 years; these points are supported by Newman (2007). As a result, he proposed that "men's" cognitive and symbolic functioning is more important in learning new behaviours than psychoanalytic theory. However, as children learn the differences between, say, a dog and a cat, they can adjust their schema to accommodate this new knowledge (Heick, 2019). Bandura performed several experiments on children. According to Green and Peil (2009), this theory provides a framework for understanding, predicting, and changing human behavior. He demonstrated that observation of filmed or live models engaging in fear-provoking interactions (such as snake phobias) is effective in eliminating or reducing fears. He conducted experiments on nursery school children who were exposed to film of aggressive adults (models) hitting a plastic doll (victim) for a few minutes. The result was that children who watched the aggression towards the doll behaved in a similar way, while those children who did not see the film were not aggressive towards the doll.

Furthermore, Bandura, in redefining his theory, came up with assumptions and hypotheses about thinking and reasoning. He sees cognition as a term used by psychologists to describe the process of thinking and reasoning. Finally, he added the concept of reciprocal determinism, which has to do with the mutual influence of children's thoughts, behaviour, and environment on each other. He insisted that children are not completely controlled by their environment as they partly create these environments. For instance, children have a choice of television programmes. As they make these choices, they create their own viewing environment that invariably affects their future development. In short, reciprocal-determinism describes the opportunity for people to shape their destinies as well as the limits of self-direction. Bandura's concepts of human nature, reciprocal determinism, real life, and symbolic models have implications for this study.

Bandura's view of human nature has implications for the study, as it forms one of the theoretical foundations for it. The social cognitive theory can be applied to motivation and learning for students and teachers in that students will begin to see the need to learn mathematics with computer-assisted instruction, which is bound to simplify and promote effective learning. Social cognitive theory research offers support that modelling can be useful for incorporating new strategies into learning for students. According to Bandura's observational learning theory, students acquire self-regulative functions by observing models. Observational learning occurs when students or teachers observe a well-trained model like CIA and experience an increase in their knowledge and understanding. Lastly, the mutual relationship

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between a student or teacher, their environment, and their behaviour is pointed out as a key component in Bandura's triadic reciprocal determinism theory.

Instructional theory of Robert M. Gagne (1965)

Instructional theory focuses on how to structure materials to promote the education of humans, particularly youths. This theory stipulates that there are several different types or levels of learning. The significance of these classifications is that each type requires different types of instruction. Gagne identifies five major categories of learning: verbal information, intellectual skills, cognitive strategies, motor skills, and attitudes. Different internal and external conditions are necessary for each type of learning. For example, for cognitive strategies to be learned, there must be a chance to practise developing new solutions to problems; to learn attitudes, the learner must be exposed to a credible role model or persuasive arguments.

Gagne suggests that learning tasks for intellectual skills can be organised in a hierarchy according to complexity: stimulus recognition, response generation, procedure following, use of terminology, discrimination, concept formation, rule application, and problem solving. The primary significance of the hierarchy is to identify prerequisites that should be completed to facilitate learning at each level. Prerequisites are identified by doing a task analysis of a learning or training task. Learning hierarchies provide a basis for the sequencing of instruction.

According to Gagné, learning occurs through a series of learning events. Each of the nine learning events are conditions for learning, which must be accomplished before the next in order for learning to take place, termed:

1. Gaining attention: To ensure reception of coming instruction, the teacher gives the learners a stimulus. Before the learners can start to process any new information, the instructor must gain the attention of the learners. This might entail using abrupt changes in the instruction.

2. Informing learners of objectives: The teacher tells the learner what they will be able to do because of the instruction. The teacher communicates the desired outcome to the group.

3. Stimulating recall of prior learning: The teacher asks for recall of existing relevant knowledge.

4. Presenting the stimulus: The teacher gives emphasis to distinctive features.

5. Providing learning guidance: The teacher helps the students in understanding (semantic encoding) by providing organization and relevance.

6. Eliciting performance: The teacher asks the learners to respond, demonstrating learning.

7. Providing feedback: The teacher gives informative feedback on the learners' performance.

8. Assessing performance: The teacher requires more learner performance, and gives feedback, to reinforce learning.

9. Enhancing retention and transfer: The teacher provides varied practice to generalize the capability.

Some educators believe that Gagné's taxonomy of learning outcomes and events of instruction oversimplifies the learning process by over-prescribing. However, using them as part of a complete instructional package can assist many educators in becoming more organised and staying focused on their instructional goals. Constructivism views learning as a process in which the learner actively constructs or builds new ideas or concepts based upon current and past knowledge. In other words, "learning involves constructing one's own knowledge from one's own experiences." Constructivist learning, therefore, is a very personal endeavor, whereby internalised concepts, rules, and general principles may consequently be applied in a practical real-world context.

The implication of the theory is that this study addresses the role of instructional technology in learning. When teachers employ the nine learning events/conditions for learning in teaching students, using a complete instructional package like computer-assisted instruction (CAI), their academic performance level is improved. These goals assist many educators in becoming more organised and staying focused on their instructional goals. The teacher acts as a facilitator who encourages students to discover principles for themselves and to construct knowledge by working to solve realistic problems. This is also known as "knowledge construction as a social process" (see social constructivism). By learning, one can get good results. Constructivism itself has many variations, such as generative learning, discovery learning, and knowledge building. Regardless of the variety, constructivism promotes a student's free exploration within a given framework or structure.

Cognitive Theory of Learning of Edward Tolman (1930)

In the 1930s, Edward Tolman proposed a theory of learning called cognition. He did not accept the behaviourist theory, which states, "Behavior is an automatic response to an event". Tolman's theory proposed that there are paths that we can follow and tools that we can use to achieve our goals. Among Tolman's ideas was the one that acts as if a particular type of behaviour will lead to a certain goal. Tolman's theory was somehow based upon the belief that we expect specific outcomes to result in specific behavior. People within a society become so enculturated into the systems and beliefs of that society that they often accept them as "normal" and do not see them as imposed structures (Roth, 2018). What distinguishes Tolman's theory of cognition from the other theories is that it states that learning can occur without reinforcement. That is, one can learn from past experience, but only if one is motivated enough to turn motivation into behavior. It is said that motivation in the context of cognitive theory has two purposes:

(1)   To allow internal tension to create a demand for the goal, and

(2)   To establish the events that one will concentrate on.

Two main types of motivators are identified: deprivation and incentives. Tolman's theory gained wide acceptance in the 1960s, and several researchers began expanding upon his work, including Julian Rotter. In cognitive theory, it is believed that when one encounters new experiences, the reasoning from the past experience will guide one's action. For instance, one who has a serious headache goes to the hospital to consult the physician and learns that he is having a migraine and that medical treatment for migraine is taking two tablets of Panadol thrice a day and Analgin two tablets twice a day. This implies that one is then able to imbibe the knowledge on how to treat such a medical problem.

Cognition refers to mental activities such as thinking, remembering, learning, and speaking. That is, if we apply a cognitive approach to learning and teaching, our understanding is focused on information and concepts. If we are able to understand the connections between concepts, breakdown information and rebuild it with logical connections, then our retention of material and understanding will increase. Cognitive theory views learning as a process of recognition.

Cognitive theory maintains that the way one thinks largely determines how one feels and behaves. This proves that memory is an important component of this theory. Cognitive development theories first identify the capabilities that represent the highest levels of human thought. This theory of learning focuses largely on the mind and attempts to model how information is received, assimilated, stored, and recalled. Cognitivists argue that while the environment is an important input to learning, learning itself is simple; it is done by the collection of input and the production of output. Cognitivists are interested in the specific functions that allow the brain to store, recall, and use information, as well as in mental processes such as pattern recognition and categorization, and the circumstances that influence people's attention (Codington-Lacerte, 2018). According to cognitive psychology research, traditional methods of study, including rereading texts and drilling practice, or the repetition of terms and concepts, are not effective for committing information to memory (Brown et al., 2014).

This theory is relevant to the study in that it requires teachers to be well schooled in instructional design and have a solid knowledge of theories of learning and instruction so that they can respond in some sort of informed way to students. It also requires the teacher to monitor and modify strategies as they've been prescribed. e.g., new methods of learning such as computer-assisted instruction (CAI) that will allow the students to invent prescriptive principles when the need arises. For instruction to be successful, it must therefore constantly monitor and adapt to unpredicted changes in student behaviour and thinking as instruction proceeds. Constructivist teachers act as guides or coaches, facilitating learning by developing supportive activities and environments and building on what students already know (Kretchmar, 2019b).

Conclusion

Learning theories are meant to help instructors understand the processes and circumstances that enable learning and, by extension, offer guidance in developing

activities and environments that best support learning. In the light of social learning theory, it is considered that "men's" cognitive and symbolic functioning is more important in acquiring new behaviour than the psychoanalytic theory. In the same manner, for cognitive strategies to be learned, there must be a chance to practise developing new solutions to problems. As for Gagne, learning tasks for intellectual skills are organised in a hierarchy according to complexity: stimulus recognition, response generation, procedure following, use of terminology, discrimination, concept formation, rule application, and problem solving. In Gagne's instructional theory, it is established that gaining attention, informing learners of objectives, stimulating recall of prior learning, presenting the stimulus, providing learning guidance, eliciting performance, providing feedback, assessing performance, and enhancing retention and transfer are conditions for learning that must be accomplished before the next in order for learning to take place. Tolman's cognitive theory of learning has influenced many areas of inquiry: education, health sciences, social policy, and psychotherapy, among others. What distinguishes Tolman's theory of cognition from other theories is that it states that learning can occur without reinforcement.

Recommendations

1. It pays to understand the connections between concepts and breakdown information with logical connections for the retention of material and better understanding.

2. Both students and teachers should be well abreast with the principles of learning theories and effective application of it in learning.

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