

University Setif2
Faculty of Letters & Languages
Department of English Language & Literature
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Learning Theories (Second Semester)

I. Behaviorism

From about 1920 through the mid-1950s, behaviorism became the dominant learning theory. It states that all behaviors are acquired through conditioning processes. It has to do with the change in either the form of frequency or the observable behavior.

1. How does learning occur?

In this theory, learning is accomplished when the proper response is demonstrated following the presentation of an environmental stimulus. Behaviourists care about the stimulus and the response and how to strengthen the association between them. The learner is passive reacting only to the environmental stimuli. Responses that are reinforced are going to re-occur in the future.

2. Which factors influence learning?

The environmental stimulus and the reinforcements are the major factors that influence learning. The teacher should know how to arrange and present the stimuli within the environment, when to present a certain stimulus to reinforce the proper responses and what is the most effective reinforcement for a certain student (individual differences among learners)

What is the role of memory?

Memory was never addressed by behaviorism. They care more about habits but they mention nothing about memory or the mental capacities. They believe that if the learner practices, he is ready to respond; if he does not practice, he is not ready yet. Practice is perceived as a tool to respond and memorize. According to Winn (1990), "no attempt is made to determine the structure of students' knowledge nor to access which mental process is necessary for them to use" (one of the major shortcomings of behaviorism is their ignorance of the mental processes).

3. How does transfer occur?

In this theory, transfer is the application of learned knowledge in new situation. Transfer is a matter of generalization. The learner is going to react to the identical stimulus with the same response. For example, a learner will name body of the monkey in the same way he names the human body because for example he had a previous exposure to the human body.

4. What is the role of the teacher?

In this theory, in order to elicit the most appropriate response, the teacher should determine which stimulus can elicit the desired response, provide the environmental conditions which help the learner to make correct responses in reaction to the target stimulus, provide reinforcement for learner's responses and provide the learner with similar situation to practise.

II. Cognitivism

Until the 1960, behaviourism was the dominant theory in education. However, during that time, it became clear that this theory was unable to account for the mental aspects of learning. There as a need for a theory that can explain the cognitive processes happening in the mind of the individual.

Cognitivism came as a reaction and cognitivists try to free themselves from the empirical study of overt behaviours to look for explanations of that behaviour dealing with its psychological aspect.

A clear distinction between bahviourism and cognitivism in terms of approaching learning is provided by Brown (2000) in which he claims that "...behavioural psychologists were interested in description, in answering "what" questions about human behaviour which means the objective measurement of behaviour in controlled circumstances....cognitive psychologists were, to be sure, interested in "what" questions, but they were far more interested in a more ultimate question, "why": what underlying reasons, genetic and environmental factors and circumstances caused a particular event?

Behaviourists cared about the observable behaviour but for the cognitivists, they care about why this happen. For them, changes in observable behaviours are indications of what is happening in the individuals' mind. "Observable behaviour is the interpretation of the cognitive mental processes of the learner".

1. How does learning occur?

Learning is defined as the process of "knowing" which has to do with the discrete change in learner's state of knowledge rather than change in the overt behaviour as response to a certain stimulus. It has to do with what the learner knows and how they came to know it as a result of the interaction of mental processes. Learning is a mental activity that entails internal processing and structuring by the learner. Therefore, cognitivism addresses issues of how knowledge or information is received, organised, stored and retrieved by the mind to be used in future situations when necessary.

- The learner is active in the process of learning by activating those cognitive processes, unlike behaviorism where the learner is totally passive and reacts to stimulus only.

2. What is the role of the memory?

In this theory, memory has a huge importance and significant role. Memory is defined as the ability to recall or retrieve the learnt information. With no memory, learning cannot take place. In this regard, Atkinson and shiffin (1968) developed a model of human memory which was later modified and introduced as consisting of 4 stores of memory: Sensory, short term, working and long term. The following quote explains the functioning of memory while processing the information.

Grider (1993) argues that "the processing of information for storage includes several key components. When one experiences sensory input, the raw data is briefly captured in a sensory buffer. This receiver has unlimited capacity, but information disappears quickly unless attention transfers it to the short-term memory Working memory is similar to short term memory except that this store is utilized for specific mental operation such as addition. Information that is encoded into long term memory is organised, meaningful and permanent"

The learner uses the sensory memory to receives the physical information for a very brief time in its sensory form (visual and auditory). When paying attention, the information moves to short term memory where it is stored for 15-30 seconds. With revision, addition and modification, the information is organized at the level of the working memory where it is divided into chunks. After rehearsal and practice, the information goes to long term memory

where to be stored for a long period of time and used when necessary. Learning occurs when the information is stored in long term memory.

According to the way we store information, we have two types of learning:

1. Rote learning: occurs when we store the information as isolated entities that have little or no association with the existing cognitive structure “previous knowledge” so there is no relationship between what is new and what is learnt before.
2. Meaningful Learning: occurs when we relate the new knowledge to the existing cognitive structure and this can happen when the old information stored in long term memory jumps to the short memory where it is related to the new information in the sensory memory then moving again to the short-term memory, working memory and stored finally in the long-term memory.

“Meaningful learnt information is better memorized in long term memory and easily gets retrieved when necessary”.

Forgetting is the inability to retrieve the information from long term memory due to memory loss or interference. *Interference* occurs when a new or old information blocks the access to the target information due to some problems at the level of memorizing, and memory loss or mental problems.

3. Which factors influence learning?

Like behaviourists, cognitivists emphasise the external factors which are influential such as the teaching material, examples, practice, pictures, demonstrations, explanation and feedback. These factors provide the learner with mental cues to help him process the information in an organized way.

Unlike behaviourists, cognitivists highlight the mental processes that lead to problem solving, information processing and thinking. It includes the psychological aspects such as: attitudes, opinions, beliefs and perceptions.

4. How does transfer occur?

Transfer has to do with how the information is memorized in memory. For successful transfer the learner should store the information itself and the contexts in which he uses this information. E.g.: knowing the structure of simple present and the situation where to use it.

5. What is the role of the teacher?

The teacher should help the learner to use his mental processes appropriately by:

- helping learners organize the information in a meaningful way. The teacher may provide learners with models and frameworks of structuring the information to facilitate processing.
- creating learning environment where the learner can relate the previously learned knowledge (recalling prerequisites). In doing so, the teacher determines learners’ existing knowledge (prerequisites) to design knowledge that readily fit the existing structure.

Brown (2000) claim that “any learning situation can be meaningful if (a)- a learner has a meaningful learning set that is a disposition to relate the new learning task to what they already know, (b)- the learning task itself is potentially meaningful to the learner – that is relatable to the learner’s structure of knowledge”

- The teacher should give corrective feedback –knowledge of result – to help the learner to create the appropriate mental connections.

Feedback in behaviorism Vs cognitivism

- For behaviorists: feedback is in the form of reinforcement for correct answers and punishment for wrong answers.
- For cognitivists: there is no external feedback, corrective feedback is given only to help learners relate information correctly

III. Constructivism

During 1980s, a new theory of “constructivism”, which roots in cognitivism, has emerged emphasizing a more active role of the learner. This theory is located at the end of a continuum of learning theories. Along this continuum there is a shift from teaching to learning, from passive knowledge acquisition to the active manipulation of knowledge.

Behaviourism cognitivism constructivism



1. How does learning occur?

Both cognitivism and constructivism perceive learning as a mental activity but they differ in the way they perceive the mind and knowledge.

- Cognitivists perceive the mind as a reference tool of stored information about the world, and knowledge as given and absolute that can be mapped on the learner by the teacher.
- Constructivists perceive the mind as a filter of the information from the world to produce its own understanding and knowledge as a constructed entity by the learner.

For cognitivism, knowledge is given and learners process it. For constructivism, it is a constructed knowledge, the learner is the one who constructs that knowledge while the teacher acts like a guide. The learner uses the mind to give meaning to that knowledge and constructs it.

For cognitivism, the learner transfers the external information to the memory and accepts it as it is. For constructivism, the learner creates meaning through personal interpretation of external information from the world based on individual experiences.

2. Which factors influence learning?

The environment –context – and the learner –cognition- are the factors that interact to produce knowledge. In this theory, knowledge is co-produced by both context and cognition. Learning is contextually determined. Therefore, knowledge should be embedded in context in which it is used. With each new use or situation, knowledge evolves and changes. We learn vocabulary through exposure to the word in context as opposed to learning its meaning from a dictionary.

Learning words from the context ----- constructivism

Learning words from the dictionary -----cognitivism

3. What is the role of memory?

In this theory, knowledge is not merely stored in memory. It is developed through continuous contextualized use. The learner keeps creating new understanding with each new use or situation.

- 1- Memory is always under construction: the internal structure of knowledge is always open to reconstruction and modification.
- 2- Memory is a context dependent process: it changes according to the context and the cognitive structure keeps evolving with each new context.

In this theory, meaningful learning is related to modification and it is affected by three factors:

* The activity or experience *the concept or knowledge *the culture or context

Meaningful learning is about going through an experience to construct knowledge that is used in a particular context. It is about editing knowledge i.e. bringing the old knowledge, modifying it and then restoring it again.

3- How does transfer occur?

Transfer has to do with the involvement in authentic tasks built in meaningful contexts. Learning occurs in contexts within which knowledge is embedded. If learning is

decontextualized, the transfer cannot take place. The authenticity of context is critical to the individual's ability to use knowledge in new situations. Learning happens when you are engaged in the task (you learn to drive while you actually drive a car) through "practice".

4. What is the role of the teacher?

Both cognitivists and constructivists perceive the active nature of the learner. However, cognitivists see him as more than just an active processor of the information. He interprets the information to create meaning.

In this theory, the teachers' role is crucial:

- 1- The teacher should: (A) emphasize the context in which knowledge is to be learnt and applied (he should design authentic contexts and tasks that are related to those contexts e.g., the task is learning how to order food, the context is the restaurant. (B) The knowledge should be presented in a variety of contexts (different uses of the same knowledge (ordering food) restaurant, hotel, delivery... etc)
- 2- The teacher should encourage learners' active manipulation and application of knowledge through task engagement using what they learnt (e.g. role play).
- 3- The teacher should help learners construct knowledge then evaluate and update what is constructed.

To sum up the role of the teacher in constructivism, Jonassen (1999) said that the teacher's role is "to provide multiple representations of reality (contexts), emphasize knowledge construction instead of knowledge reproduction, emphasize authentic tasks in meaningful contexts rather than abstract instruction out of the context, provide learning environments such as real world setting, encourage thoughtful reflection for the experience, enable content and context dependent knowledge construction, avoid over-simplification and represent the complexity of the real world, support collaborative construction of knowledge through social negotiations among learners.

"The main difference between the three theories is the way knowledge is perceived".

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