



Study Notes For Learning Theories

This section forms part of

The NCEF in Association with the IHF

Fit For Life Lifestyle Management Specialist Module



UNIVERSITY of LIMERICK
OLLSCOIL LUIMNIGH

Learning Theories

Learning Theories are attempts at explaining the methods and ways by which people learn. There are many theories which offer to explain how people learn but there is very little agreement amongst educators as to which theory best describes the process of learning.

It is extremely important for FFL presenters to have an insight in how people learn as this will assist you in getting your message across to your audience and increase the likelihood of them taking it in and remembering it.

This section will cover 4 popular theories

Behaviourism

Cognitivism

Constructivism

Multiple Intelligences

In general it can be said that if all learning theories were placed on a spectrum, behaviourism would be at one end, constructivism at the opposite end and all the other theories could be placed on the line between these two.



- Teacher /tutor Centered
- Audience / student have a passive role

- Student / audience are active in their own learning
- Teacher / tutor has a facilitation and guiding role

Behaviourism

John B. Watson (1878-1958) is generally regarded as being the founder of the school of behaviourism. They suggest "we learn by receiving stimuli from our environment that provoke a response." (Rodgers, 1998). Early behaviourists were concerned with stimulus-response connections. In one of the best known examples of classical conditioning Ivan Pavlov (1846-1936) caused his dogs to salivate at the sound of a bell. This occurred because the dog had learned to associate the sound of the bell (a neutral stimulus) with feeding time. Thus behaviour is controlled through the pairing of an unconditioned stimulus (food) with a neutral stimulus.

B.F. Skinner circa 1940 expanded behaviourism with his work on operant conditioning. Operant conditioning focuses on a reward system (positive reinforcement) and punishment (negative reinforcement). According to Skinner (1964), "the application of operant conditioning to education is simple and direct. Teaching is the arrangement of contingencies of reinforcement under which students learn."

Behaviourism can be likened to a reward system, which places the teacher/lecturer in an active role and learners in a passive role within the learning environment i.e. all learning is centred around the teacher.

With this in mind the behaviourist approach in the classroom can be described as the belief that the teachers / presenters have all the knowledge and it is their job to distribute this knowledge to a passive audience. (Often described as the "Jug & Mug" approach)

Sample Instances of Behaviourism in Practical Situations

Positive Reinforcement or Reward: Responses that are rewarded are likely to be repeated. E.G.

- Good grades reinforce careful study
- A "Well Done!" remark or encouragement from a tutor/presenter prompts further interaction from an audience / class
- A group who have worked hard all day are let home a little early

Negative Reinforcement: Responses that allow escape from painful or undesirable situations are likely to be repeated.

- Being excused from an assignment because of good class interaction or groupwork.
- Being excused from extra study due to good performance
- Extinction or Non-Reinforcement: Responses that are not reinforced are not likely to be repeated.
- Ignoring student misbehaviour or silly remark should extinguish that behaviour.
- Punishment: Responses that bring painful or undesirable consequences will be suppressed.
- Penalising late attenders by withdrawing privileges (coffee break) should stop their lateness.

Application of the Behaviourist Approach

The behaviourist approach to presenting may be appropriate where the topic to be covered is complex and it is highly likely that the intended audience has very little or no prior knowledge of the material. (e.g. some areas of anatomy & physiology)

It may also be suitable where time is limited and the material needs to be covered. Task work and groupwork can be time consuming

The behaviorist approach in the form of a lecture is well known and adults can be comfortable with it as they are not required to interact with other members of the audience or the presenter.

Constructivism

According to Forrester and Jantzie (2004), "constructivists believe that all humans have the ability to construct knowledge in their own minds through a process of discovery and problem solving." Bencze (2004) states that constructivism is the building of knowledge that takes place in individuals' minds through problem solving and discovery.

Constructivism also calls for understanding of learning not just the memorisation of facts. Learners are active in their acquisition of knowledge rather than passive recipients. According to Hanley (1994) learners must connect new information with prior experiences, unless this connection is made, memorised facts and/or information will be quickly forgotten.

A key difference between constructivists and behaviourists is evident in how they view the role of the teacher. As stated earlier behaviourism tends to be very teacher focused whereas according to Forrester and Jantzie (2004) the constructivist view of teaching is “to teach in such a way as to produce the most learning for the least teaching.”

According to Forrester and Jantzie (2004), “constructivists believe that all humans have the ability to construct knowledge in their own minds through a process of discovery and problem solving.” Bencze (2004) states that constructivism is the building of knowledge that takes place in individuals’ minds through problem solving and discovery.

Constructivism also calls for understanding of learning not just the memorisation of facts. Learners are active in their acquisition of knowledge rather than passive recipients. According to Hanley (1994) learners must connect new information with prior experiences, unless this connection is made, memorised facts and/or information will be quickly forgotten.

A key difference between constructivists and behaviourists is evident in how they view the role of the teacher. As stated earlier behaviourism tends to be very teacher focused whereas according to Forrester and Jantzie (2004) the constructivist view of teaching is “to teach in such a way as to produce the most learning for the least teaching.”

Application of the Constructivist Approach

- Setting a task for members of the class / audience. E.g. instead of the presenter listing the health benefits of physical activity, set the class the task of writing in their notes what they think are 5 health benefits of physical activity. This simple task makes the learning more active and makes the class start thinking for themselves
- Groupwork: Give the group a problem to solve that is related to the topic being discussed. E.g. A short case study about an office worker whose blood pressure is high and stress levels within his/her place of work are also very high. Set the group the task of discussing the changes that could be made to improve the worker's lifestyle and how these changes could be implemented.

Cognitivism

Cognitivists believe that learning occurs when a learner processes information. The input, processing, storage, and retrieval of information are the processes that are at the heart of learning. The instructor remains the manager of the information-input process; but the learner is more active in planning and carrying out his/her own learning than in the behaviorist environment. Instruction is not simply something that is done to a learner but rather involves the learner and empowers their internal mental processes.

According to Huitt, (2003) the most widely accepted Information processing Model is the "Stage Theory" of Atkinson and Shiffrin (1968). This model proposes that information is processed in 3 stages:

1. Sensory Memory changes all varieties of information from the environment (sound, light, heat etc) into electrical energy as this is the only source of information the brain can understand. Information must be attended to immediately to transfer it to the next stage. It is suggested that individuals pay more attention to the information if it has an interesting feature or if the information connects to an already known pattern.

2. Short Term Memory (STM), also called working memory is created by the individual paying attention to an external stimulus or an internal thought. STM can last from 15-20 seconds to 20 minutes if the information is rehearsed. The amount of information any individual can process in the STM is variable (3-7 units) but this may be improved through the organisation of the information into components, by relevance, through chronological sequencing or through connections with previously known data. This is also known as "chunking"

3, Long Term Memory (LTM) There are two processes involved in moving the information into the LTM; elaboration and distributed practice.

Once the information is in the LTM it is stored and categorised using 3 structures called declarative, procedural and imagery memory.

- Declarative memory includes networks of connected ideas or concepts
- Procedural memory stores information on how to do certain activities, cycle a bicycle, build a wall, etc.
- Imagery memory contains references to pictures.

Application of the Cognitive Approach

- Keep the amount of information or bullet points on a slide to 4 or 5, this helps in information processing.
- Group similar topics together and don't chop and change between unrelated subjects
- Link new information to previously learned material and build on it from there
- Keep sessions short (distributed practice) with small breaks between them even for 1-2 minutes just to stand up and stretch out.

Multiple Intelligences

Dr. Howard Gardner developed the theory of Multiple Intelligences in 1983. The theory suggests that the traditional concept of individuals having just one intelligence, the level of which has to be gauged through measurable tests, is very limited.

Gardner (2004), states that there are at least eight different human intelligences. These include the traditional language and logical intelligences and also musical, spatial, bodily/kinaesthetic, interpersonal, intrapersonal and naturalist. Learners have all of the intelligences but not in equal profiles.

This theory has many implications for learning and teaching. Gardner (2004), suggests that exposing the learner to a variety of approaches to teaching activates different intelligences. Thus the implication for a class or group of learners is that they all learn differently and teachers need to provide several approaches in order to accommodate the group.

Application of Multiple Intelligences Theory

- Present topics using a variety of material including
 - a. Projector and screen
 - b. Diagrams as well as text
 - c. Video and audio
 - d. Handouts / crosswords / quizzes which include pictures and diagrams as well as text
- Use practical simulations and demonstrations
- Use practical learning exercises