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Comparing Learning Theories: An Holistic Perspective

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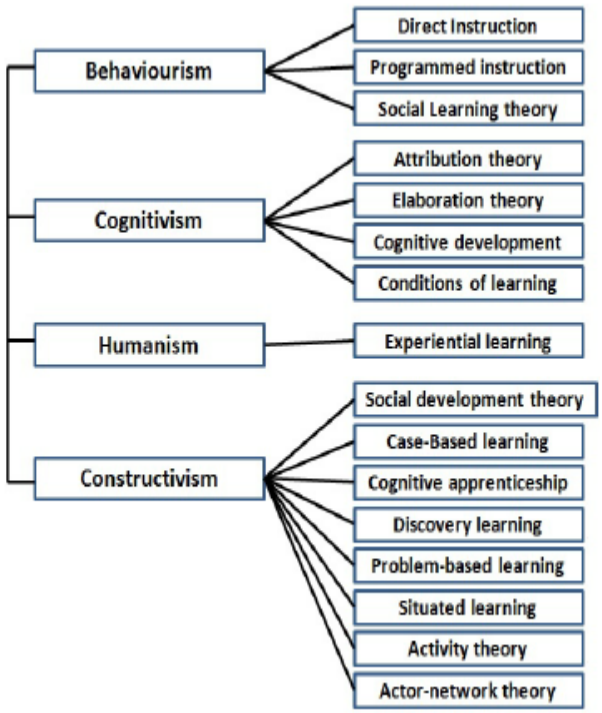
ABSTRACT

Learning theories are a set of principles that explain how individuals acquire, retain, and recall knowledge. By studying and knowing the different learning theories, one can better understand the process of learning. The principles of these theories can be used as guidelines to select instructional tools, techniques and strategies that promote learning.

1. Introduction

Learning theories are an organised set of principles explaining how individual require, retain and recall knowledge. This theories are foundation of education system and also have an impact on classroom environment and therefore one can say that these are reliable set of principles that help understand how learning occurs and what are the factors influencing it.

The major learning theories are behaviourism, constructivism, cognitivism, humanism and connectivism. It is the principles of these theories that can be used as guidelines to help select the institutional tools and techniques and strategies that promote learning.



There are **fiveprincipalmodels** of educational learning theories; behaviorism, cognitivism, constructivism, humanism and 21st Century skills-connectivism.

2. Behaviourism

It is a view in which behaviour of one individual is explained by external factors and it works with effective tools of learning and behaviour modification termed as positive and negative reinforcement along with punishment and reward system. The view believes that behaviour are acquired through association between stimuli and responses. Behaviourism has originated from the work of B.F. Skinner and the concept of operant conditioning. This theory views learners as a blank slate who must be provided with experience. Thus we can say that behaviourism refers to the association of two elements that lead to change in behaviour.

In a classroom situation teacher use behaviourism when they reward or punish student behaviour.

Behaviourism is a teacher centred theory and views learners as the passive subject and not the active subject. Based on the work of Evan Pavlov. The theory demonstrate that any change in behaviour is reflective and same learning. Therefore as a result the teachers often provide practice and drills to student to master the information given to them and review the activities.

The Drawbacks: This theory is that the learner is not prepared for higher order or creative thinking and never take the initiative to change and improve things and as a result is only prepared for recalling and basic facts automatic responses or performing tasks.

Example: Application of this theory- drill, repetitive practice, providing an incentive to do more, to participate, verbal reinforcement and establishing rules.

Examples and applications of behaviorist learning theory:

- Drill / Rote work
- Repetitive practice
- Bonus points (providing an incentive to do more)
- Participation points (providing an incentive to participate)
- Verbal Reinforcement (saying “good job”)
- Establishing Rules

Unfortunately, Behaviorism instruction does not prepare the learner for problem solving or creative thinking. Learners do what they are told and do not take the initiative to change or improve things. The learner is only prepared for recall of basic facts, automatic responses or performing tasks.

Behavioral Learning Theories

Theories	Theorist	Basic Concepts
Connectivism (1898)	Thorndike	Trial and error, law of effect ,law of exercise and law of readiness
Classical conditioning	Pavlov	Unconditional stimulus(UCS) to unconditional response(UCR). Depends on Stimulus and response compatibility
Modern Behaviourism	Watson	Pavlov's model UCS can be converted into NS(Neutral stimulus).this turns into CS
Operant conditioning	Skinner	Positive and negative reinforcement,Behaviour modification and Shaping

3. Cognitivism

It is a learning theory developed by Jean Piaget in which a child develops cognitive pathways in understanding physical responses to experiences. It believes that information processing leads to understanding and retention and considers that student learn most effectively through reading text and lecture instruction.

The learners mind is like a mirror from which new knowledge and skills are reflected and therefore, one of the paradigms of learning in this theory is that human process the information they receive rather than merely responding to stimuli. Cognitive information processing is used when a learner play an active role in seeing ways to understand and process information.

In cognition information is processed through the sensory registers and goes into the short term memory initially and eventually in a long term memory.

The teacher's role with understanding of this theory is that she must show the content in relation and continuation from chapter to chapter.

Cognitivism theories-Gain knowledge and structure by information processing

Theories	Theorist	Basic Concepts
Purposive Behaviorism	Tolman	Behaviour is goal directed .Stimuli shows the direction to reach goal. Mediated by expectations, representaions, preceptions and other internal and externous variable.
Meaningful Reception Learning	David Ausubel	Presenting material an organized and meaningful way; refers to the learning of ideas concepts, and principles by relating the new information to previously gained knowledge; Depends on personal factors such as age, background, SES, and education; Prior experiences decide whether students find learning to be meaningful or not
Conditions of Learning	Gagne	Learning outcomes, events, hierarchies; Phases – Preparation for learning, acquisition and performance, transfer of learning, taxonomy of learning

Examples and applications of cognitive learning theory:

- Classifying or chunking information
- Linking Concepts (associate new content with something known)
- Providing Structure (organizing your lecture in efficient and meaningful ways)
- Real world examples
- Discussions
- Problem solving
- Analogies
- Imagery / providing pictures
- Mnemonics

4. Constructivism

Constructivism is a philosophical viewpoint about the nature of knowledge.

There are many flavours of constructivism but one prominent theorist known for his constructivist views is Jean Piaget, who focused on how humans make meaning in relation to the interaction between their ideas.

The concept of constructivism has influenced a number of disciplines, including psychology, sociology education and the history of science. During infancy, constructivism examined the interaction between human experiences. This theory highlights on preparing people to problem solve. The learner needs to have a many base of knowledge by which the interpretation of ideas can be done. Therefore it is seen that the outcomes are not always predictable because learners have their own notion of constructing knowledge.

Constructivism is one of main agent of active learning. For example, if the given material is beneficial to the person then

they will master it. But if the material is irrelevant they will not going to learn it.

And to conclude I would say that my teaching approaches is constructivism approach, my aim is to teach the students based on their prior knowledge and gradually build up mam there. I prefer to ask deep questions to them and give them challenging problems to motivate them. This is to help them to consume new knowledge. Mainly the student should be able to construct their own understanding and building on what the student already knows. The plus point in my teaching is that there is a lot of interaction between me and my students. Factors or applications used by me in the classroom are: Case studies, research projects, problem based learning and brainstorming.

Theories	Theorist	Basic Concepts
Socio-cultural Theory	Vygotsky	Social interactions are vital; knowledge is co-constructed between two or more people; self-regulation is developed through internalization of actions & mental operations in social settings; Development occurs through use of culturally transmitted tools (language); ZPD
Gestalt Theory	Gestalt	Learning is a cognitive phenomenon involving reorganizing experiences into different perceptions of people, things, or events
Theory of Instruction	Gagne	Learners may identify their own learning outcomes, arrange for conditions and supply own events of instruction; learner is a processor of information during instruction; outcomes involve verbal information, intellectual skills, cognitive strategies, motor skills, and attitudes
Cognitive Development	Piaget	Depends on four things: biological maturation, experience with physical and social environment, and equilibration; Equilibration is the driver force behind the occurrence of change; Accommodating/Assimilating to construct own reality Sensorimotor, Preoperational, Concrete operational, Formal operational
Cognitive Growth	Bruner	Highlighted the different ways children represent knowledge; Views represent a functional account of human development and have important implications for teaching and learning; Modes of knowledge representation – Enactive/Motor Responses, Iconic,/Action-Free Mental Images, Symbolic/Symbol Systems (language, math, etc.); Spiral Curriculum

Examples and applications constructivism:

- Case studies
- Research Projects
- Problem based learning
- Brainstorming
- Collaborative learning / group work
- Discovery learning
- Simulations

5. Humanism

It is a philosophical and ethical stance that emphasizes the value and agency of human beings, individually and collectively and generally prefers critical thinking.

In this individual is a subject which undergoes a natural process to reach self-actualization. There are several factors affecting humanistic learning- scenarios, role modelling, experiences, exploring and observation. The learner's self-esteem plays important role in humanism. The awareness about one's strength and weaknesses is important, therefore role of a teachers is to encourage her students, help in finding their strength and weaknesses. For example, a student need to feel positive about learning chemistry. A teacher should work towards the development of student's confidence and improve their self-esteem and give them the oppourtunity to speak up. A healthy and cordial environment is build when a teacher shares his/her feelings, views and opinion with students and build a good rapport.

Theories	Theorist	Basic Concepts
Hierarchy of Needs	Maslow	Human actions unite by direction toward goal attainment; Lower order needs must be met before higher-order needs can affect behavior ; Deprivation Needs – Physiological, Safety, Belongingness, Esteem; Highest level is Self-actualization; Behavior is motivated by desire for personal growth
ClientCentered Therapy; Actualizing Tendency	Rogers	An ongoing process life represents consisting of personal growth or achieving wholeness; Is a motivational construct and presumed to be innate; Our experiences and interpretations of the environment help or hurt attempts at growth; Development→Self-Experience; Need for positive self-regard – unconditional is critical, problems occur when people experience conditional
Self-Worth Theory	Atkinson	Assumes success is valued and that failure, or the belief that one has filed, should be avoided because it implies low ability; People want to be viewed as able, but failure creates feelings of unworthiness; to preserve self-worth, people must feel able and demonstrate their ability to others

6. Connectivism

It is a new learning theory where people learn through forming connections. This theory is developed along with digital technology age and adapting to new changes. This theory suggests that learning is not restricted to a level of formal education but can also happen via other media of knowledge such as job skills, networking, experience and other technological tools. This theory can also be known as the learning theory for the Digital Age. A learner's progress must

continue where he/she can refer to the learning material available on the internet.

Theories	Theorist	Basic Concepts
Connectivism theory	Downes and Siemens	Management and leadership, Media News Information, MOOC-massive open online course, Design of learning environments –offline and online.

7. Conclusion

It is important to understand and value of each theory and decide upon a strategy before its use.

Some points to consider are:

- Level of knowledge of the learners.
- The thought processing demands.
- Desired outcome.

A single theory alone cannot be applied to every student. For example, behaviourist theory is good for novice learner where learning is based on facts. Cognitivism theory for established learner where they make connections using fact based information. A sophisticated learner will choose constructivist theory where they use fact based information and knowledge connections for greater understanding. Teaching and learning methodologies have been reviewed, changed and modified as per the need as there are learners of different experience, needs and learning styles. Therefore, application of different learning theories will be beneficial to create perfect environment for both teachers and learners.

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