

W4 Portfolio Activity: Cognitivism

The Theory of Cognitivism



Cognitive psychology derived its name from the Latin term *Cognos ere*, referring to knowing and information. Cognitivism in psychology is a theoretical framework for understanding the mind that gained roots in the 1950s. The cognitive movement was formed because behaviorism neglected to explain cognition. Behaviorism concentrates on studying behavior that can be observed. Cognitive Theory stresses the acquisition of knowledge, and growth of mental structure. Acquiring knowledge is an activity that consisting of the internal arranging of mental structures within the mind. The information that is stored within memory is formed in an organized, meaningful manner. Cognitivism is a branch of psychology that conceptualizes the student's learning process by focusing on different mental processes, including how people perceive, think, remember, learn, solve problems, and direct their attention to one type of stimulus more than to another. (Wikipedia-Contributors, 2021)

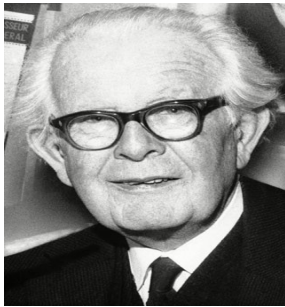
Principle Characteristics of Cognitivism

- Learning involves an internal, mental change rather than the external behavior change.
- Learning is a process of relating new information to previously learned information.
- Some learning processes are unique to human beings, complex language is an example.
- Learning involves the formation of mental representations or associations that are not necessarily reflected in overt behavior changes.
- Knowledge is organized and stored in schema.
- Different environmental conditions are part of the learning process.
- The focus of scientific inquiry must be objective, systematic observations of people's behaviors, but behaviors often allow reasonable inferences about unobservable mental processes.
- Cognitive processes are the focus of study. (Euston-Contributors, 2021)

Cognitivism



Key Researchers of Cognitive Theory



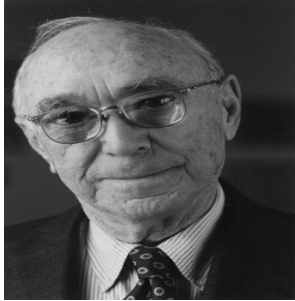
Jean Piaget (1896-1980) Piaget believed that mental development from birth to adulthood is progressive going from minor to major, and this governs the development of intelligence. (ABY58, 2021)

Famous Quote: "Education, for most people, means trying to lead the child to resemble the typical adult of his/her society...but for me and no one else, education means creators...You have to make inventors, innovators...not conformists." (A-Z Quotes, 2021)



Lev Vygotsky (1896-1934) Vygotsky's theory of cognitive development focused on the ideas that social interaction and imaginative play are large contributors to the process of cognitive development in children. He believed that the social interactions that children engaged in helped them to both discover and create meaning from the things that they discover. (ABY58, 2021)

Famous Quote: “Every function in the child’s cultural development appears twice: first, on the social level, and later, on the individual level; first, between people (interpsychological) and then inside the child (intrapsychological). This applies equally to voluntary attention, to logical memory, and to the formation of concepts. All the higher functions originate as actual relationships between individuals.” (A-Z Quotes, 2021)



Jerome Bruner (1915-2016) Bruner was a psychologist and pedagogue who developed the theory of learning by discovery, which encouraged students to acquire knowledge by themselves. (ABY58, 2021)

Famous Quote: “Learners are encouraged to discover facts and relationships for themselves”. (A-Z Quotes, 2021)



David Ausubel (1918-2008) Ausubel was the creator of significant learning, which explained that learning was the incorporation of new information to the cognitive structure of people facilitating their learning. (ABY58, 2021)

Famous Quote: “The most important single factor influencing learning is what the learner already knows. Ascertain this and teach him accordingly”. (A-Z Quotes, 2021)



Robert Gagne (1916-2002) Gagne created the eight different levels of learning. (ABY58, 2021)

Famous Quote: “The Gagne Assumption is that different types of learning exist, and that different instructional conditions are most likely to bring about these different types of learning”. (A-Z Quotes, 2021)



Howard Gardner (1943-Present) Gardner developed the theory of multiple intelligences. The theory of multiple intelligences proposes the differentiation of human intelligence into specific modalities of intelligence, rather than defining intelligence as a single, general ability. (ABY58, 2021)

Famous Quote: “The biggest mistake of past centuries in teaching has been to treat all students as if they were variants of the same individual and thus to feel justified in teaching them all the same subjects the same way”. (A-Z Quotes, 2021)

Strengths of Cognitivism

1. There has been a lot of testing of the cognitive approach resulting in much evidence backing the theory. The approach has many practical applications. The cognitive approach relies heavily on experiments as its main research method. The experiments allow the determination of both cause and effect, but more importantly high control over confounding variables.
2. The cognitive approach highlights people’s thought processes. The approach tries to look inward and find out how the brain interprets stimuli. The approach highlights how cognition greatly affects behavior and why it is important for people to understand how their brain works. The cognitive approach is extremely helpful for those that want to cheat their brain and change their behavior for the better. This approach contrasts with the behavioral approach that focuses only on outward actions.
3. The cognitive approach can be combined with other approaches. The approach is both useful for learning more about thought processes and helping people improve their behavior. A big advantage about it is that it can easily work together with other approaches to create a therapy that will bring about positive results. For instance, cognitive-behavioral therapy is a combination of the cognitive approach and the behavioral approach with the goal to correct wrong cognitive processes to produce more favorable actions. This type of therapy has been proven to be helpful to those with phobias, anxiety disorders, obsessive-compulsive disorder, and post-traumatic stress disorder.
4. Compared to the other kinds of approaches, the cognitive approach is often called reductionist, which means that it attributes complex human behavior to simple cognitive approaches. Reductionism enables us to understand behavior in simple terms and be able to apply theories to more areas, as it is more nomothetic than a holistic approach.

Limitations of Cognitivism

1. The cognitive approach dismisses important factors in human behavior. Individuals that believe in this approach think that everything boils down to just cognitive processes. The cognitive

approach does not consider other factors that may affect behavior, such as genes, individual experiences, biological structures, and even chemical balances. This approach may lead to the generalization of human behavior, which does not sit well with many people who think that everyone is different. The approach can be defeating for people who have different thought processes and behaviors than normal because of one or more factors listed above.

2. The cognitive process is based on controlled experiments. A reason why psychologists prefer the cognitive approach is that it is founded on experiments that are regarded to be scientifically sound because it uses the scientific method. Yet, many people point out that these experiments may not be valid as they look. Psychologists only get responses that are closely tied to the stimuli that their subjects are exposed to by observing people in a controlled environment. Psychologists do not get to observe how their subjects act in the real world, where they are exposed to several stimuli at once and must react based on this mixture of information.
3. There is no agreed upon definition or application of the theory. For instance, Jean Piaget concentrated on the universal stages of cognitive development and biological maturation, however failed to consider the effect that the social setting and culture may have on cognitive development.
4. The cognitive approach ignores other factors towards behavior that have been shown to affect behavior. There are some that believe Jean Piaget, has neglected cultural, educational, and social effect on the cognitive development of children. For example, Piaget did not evaluate children from diverse backgrounds to identify cognitive development stages among children's societal backgrounds. In Western Society, Piaget only examined children who had formal education compared to Society outside the west. (Alahmad, 2020)

Implications for Instructional Design

The cognitivist approach looks at the learner's predisposition to learning. For instance, how does the learner activate, maintain, and direct their learning? As well, cognitivist examine the learner's how to design instruction, if it can be assimilated. For example, cognitivists look at the learner's existing mental structures. Using the cognitive approach there are some specific assumptions or principles that direct the instructional design including the following: active involvement of the learner in the learning process, learner control, meta cognitive training (e.g., self-planning, monitoring and revising techniques), the use of hierarchical analysis to identify and illustrate prerequisite relationships (cognitive task analysis procedure), facilitating optimal processing of structuring, organizing and sequencing information (use of cognitive strategies such as outlining, summaries, synthesizers, advance organizers etc.), encouraging the students to make connections with previously learned materials, and creating learning environments (recall of prerequisite skills; use of relevant examples, analogies).

In application of instructional design, cognitivist can do the following:

- Make use of feedback (knowledge of results) to guide and support accurate mental connections.
- Look at the learner to determine their disposition to learning (i.e., How does the learner activate, maintain, and direct their learning?).
- Examine the learner to determine how to design instruction so it can be easily assimilated (i.e., What are the learner's mental structures?).

- Emphasize the role that environmental conditions play in facilitating learning. Instructional explanations, demonstrations, illustrative examples, and matched non-examples are all considered to be instrumental in guiding student learning. (Elkhider, 2016)

Instructional Methods:

- Lecture
- Visual Tools: Mind Maps, Charts etc. to facilitate memorization for learning,
- Multiple Choice and Essay Assessment.

References:

1. Image of Cognitivism (N.d.) Retrieved from <https://www.bing.com>
2. Wikipedia-Contributors (2021) Cognitivism. Retrieved from <https://en.wikipedia.org/wiki/cognitivism>
3. Euston-Contributors (2021) Cognitivism. Retrieved from <https://www.euston96.com/en/cognitivism>
4. Image of Cognitivism Thought Process (N.d.) Retrieved from <https://www.bing.com>
5. Image of the Quote from Jean Piaget. A-Z Quotes (2021). Retrieved from <https://azquotes.com/author/jeanpiaget>
6. Famous Quote from Lev Vygotsky. A-Z Quotes (2021). Retrieved from <https://azquotes.com/author/levvygotsky>
7. Famous Quote from Jerome Bruner. A-Z Quotes (2021). Retrieved from <https://azquotes.com/author/jeromebruner>
8. Famous Quote from David Ausubel. A-Z Quotes (2021). Retrieved from <https://azquotes.com/author/davidausubel>
9. Famous Quote from Robert Gagne. A-Z Quotes (2021). Retrieved from <https://azquotes.com/author/robertgagne>
10. Aby58 (2021). Learning Theories. Retrieved from <https://timetoast.com/timelines/learningtheories>
11. Alahmad, M. (2020, July) Strengths and Weaknesses of Cognitive Theory. Retrieved from <https://researchgate.net>

12. Elkhider, I. (2016, April 11). Applying Learning Theories and Instructional Design Models for Effective Instruction. Retrieved from: <https://journals.physiology.org/doi>