

Jean Piaget's Cognitive Development

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ABSTRACT

Jean Piaget, (1896-1980) was a Swiss Biologist, Philosopher and a Psychologist. Jean Piaget gives cognitive development theory. Jean Piaget's theory of cognitive development suggests that children move through four different stages of mental development. The first stage is Sensory motor stage in first stage senses are teaches, reflex actions, imitative behavior and object performance. Children not only learn how to perform physical actions such as crawling and walking; they also learn a great deal about language from the people with whom they interact. Piaget believed that developing object permanence or object constancy, the understanding that objects continue to exist even when they cannot be seen, was an important element at this point of development. Second stage is Pre-Operational Stage. 2nd stage the emergence of language that is one of the major hallmarks of the preoperational stage of development. At this stage, kids learn through pretend play but still struggle with logic and talking the point of view of other people. They also often struggle with understanding the idea of constancy. Third stage is Concrete Operational stage while thinking becomes much more logical during the concrete operational state, it can also be very rigid. Kids at this point in development tend to struggle with abstract and hypothetical concepts. Fourth Stage is Formal Operational stage. The ability to thinking about abstract ideas and situations is the key hallmark of the formal operational stage of cognitive development. The ability to systematically plan for the future and reason about hypothetical situations are also critical abilities that emerge during this stage. Piaget's theory of cognitive development helped add to our understanding of children's intellectual growth. It also stressed that children were not merely passive recipients of knowledge. Instead, kids are constantly investigating and experimenting as they build their understanding of how the world works.

Keywords: *Object Permanence, Egocentric, Constructivism, Schemas, Assimilation, Accommodation, Equilibration, Sensory-Motor Stage, Pre-Operation Stage, Concrete Operational Stage, Formal Operational Stage*

Jean Piaget, (1896-1980) was a Swiss Biologist, Philosopher and a Psychologist. Being a Biologist, he knew the importance of environment and process of adaptation. Being a philosopher, he had a keen interest in Epistemology. He is also known as the father of Child Psychology. Piaget believed that children take an active role in the learning process, acting much like little scientists as they perform experiments, make observations, and learn about the world. As kids interact with the world around them, they continually add new

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knowledge, build upon existing knowledge, and adapt previously held ideas to accommodate new information.

Constructivism means Child collects small-small units of knowledge, Child adds their chunks and makes a bigger concept, Children create their own world to knowledge by their chunks. Cognition means mental process that includes sensation, Perception, imagery, retention, recall, thinking, reasoning and problem solving. Jean Piaget's theory of cognitive development suggests that children move through four different stages of mental development. Cognitive theory not only focus on understanding how children acquire knowledge, but also the nature of intelligence. Jean Piaget divided his cognitive development into four stages Piaget's stages are: Sensory-Motor Stage (birth to 2 years), Pre-operation stage (2-7 Years), Concrete Operational Stage (7-11 Years), Formal Operational Stage (Adolescence to adulthood).

STAGES OF COGNITIVE DEVELOPMENT

Though his observation, Piaget developed a stage theory of intellectual development that included four distinct stages:

- **Sensory-Motor Stage (birth to 2 years):** The infant knows the world through their movements and sensations. Children learn about the world through basic actions such as sucking, grasping, looking and listening. They are separate beings from the people and objects around them. They realize that their actions can cause things to happen in the world around them. Infants learn that things continue to exist even though they cannot be seen (object permanence)
- **Pre-operation stage (2-7 Years):** 2nd stage also known as Pre-childhood or toy age, Memory and imagination are developing. Children at this age are egocentric, which means they have difficulty thinking outside of their own viewpoints. 'Operation' Mental Process, transductive reasoning, Crucial stage for language development, Child learn to think first and develops the language later, irreversibility Child shows two forms of play de-centration and de-contextualization, animism. The main achievement of this stage is being able to attach meaning to objects with language. It's thinking about things symbolically. Symbolic thought is a type of thinking where a word or object is used to represent something other than itself.
- **Concrete Operational Stage (7-11 Years):** Third stage is also known as later childhood or Pre-gang age, Children are much less egocentric in the concrete operational stage. It is marked by more logical and methodical manipulation of symbols, Stage of logical thinking & concrete operations. reversibility develops. Transitivity develops, Classification comes, Conservation, Relationship, Child understands that quantity, area or volume doesn't change with the change in form of shape or size. The main goal at this stage is for a child to start working things out inside their head. This is called operational thought, and it allows kids to encountering things in the real world.
- **Formal Operational Stage (Adolescence to adulthood):** 4th stage also known as gang age, a milestone of this period is using symbols to understand abstract concept. Not only that, but older kids and adults can also think about multiple variables and come up with hypotheses based on previous knowledge. In this stage child develops abstract thinking, Deductive Reasoning comes, Hypothetical thinking, Hypothetic-Deductive Reasoning, Adolescent Ego centrism, Age of Divergent/Convergent/Creative thinking.

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Piaget believed that people of all ages developed intellectually. But he also believed that once a person reaches the formal operational stage. It's more about building upon knowledge, not changing how it's acquired or understood.

IMPORTANT CONCEPTS (COGNITIVE PROCESSES)

To better understand some of the things that happen during cognitive development, it is important first to examine a few of the important ideas and concepts introduced by Piaget.

The following are some of the factors that influence how children learn and grow:

- **Schemas-** A schema describes both the mental and physical actions involved in understanding and knowing. Schemas are categories of knowledge that help us to interpret and understand the world. In Piaget's view, a schema includes both a category of knowledge that helps us to interpret and understand the world. In Piaget's view, a schema includes both a category of knowledge and the process of obtaining that knowledge. As experiences happen, this new information is used to modify, add to, or change previously existing schemas.
- **Assimilation-** The process of taking in new information into our already existing schemas is known as assimilation. The process is somewhat subjective because we tend to modify experiences and information slightly to fit in with our preexisting beliefs.
- **Accommodation-** Another part of adaptation involves changing or altering our existing schemas in light of new information, a process known as accommodation.

Accommodation involves modifying existing schema, or ideas, as a result of new information or new experiences. New schemas may also be developed during this process.

- **Equilibration-** Piaget believed that all children try to strike a balance between assimilation and accommodation, which is achieved through a mechanism Piaget called equilibration. As children progress through the stages of cognitive development, it is important to maintain a balance between applying previous knowledge (assimilation) and changing behavior to account for new knowledge (accommodation). Equilibration helps explain how children can move from one stage of thought to the next.
- **A Word Form Very Well-** One of the most important elements to remember of Piaget's theory is that it takes the view that creating knowledge and intelligence is an inherently active process. "I find myself opposed to the view of knowledge as a passive cop of reality," Piaget explained. "I believe that knowing an object means acting upon it, constructing systems of transformations that can be carried out on or with this object, knowing reality means constructing systems of transformations that correspond, more or less adequately, to reality."
- Piaget's theory of cognitive development helped add to our understanding of children's intellectual growth. It also stressed that children were not merely passive recipients of knowledge. Instead, kids are constantly investigating and experimenting as they build their understanding of how the world works.

EDUCATIONAL IMPLICATION OF PIAGET'S THEORY

Piaget's theories align more with play-based school programs, or environments where kids are offered opportunities for trial and error, and interaction with the real world. Piaget's philosophy can be incorporated into any education program. providing chances for trial and error. Focus on the process of learning versus the end result. Providing children with visual aids and other prop, like models, to illustrate different ideas and concepts. Using real-life

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examples to paint complex ideas, like word problems in math. Providing chances to classify or group information. Outlines and hierarchies are good examples and allow kids to build new ideas from previous knowledge. Offering problems that necessitate analytical or logical thinking. Brain teasers can be used as tool in this instance. Provides a broad development perspective to the education for building a curriculum for the children. Piaget based curriculum requires that children should not skip any stage.

Children learn speedily if we provide concrete material to them. A teacher should arouse the curiosity of the child through planned activities. Treat a child as a discussion. Constructivism-Discovery Learning, Problem Solving, Projects, Activity based method. Teacher as facilitator, Individual Differences, Readiness to learn (Cognitive level). We can also help our child throughout the stages by catering to their specific learning style at the time-

- *Sensory-Motor Stage* Use real objects in play activities. Connect play to the five senses. Implement routines for the youngest children. They are predictable and may be highly useful with developing communication.
- *Pre-operation stage* – Children learn best by doing. Allow them to actively interact with a variety of things in their environments. Including books, people, games, and objects. Ask questions while children are engaged in daily routines and allow them to come up with their own ideas. Point out new things and encourage children to question you about those things.
- *Concrete Operational Stage*- Create timelines, three dimensional models, science experiments, and other ways to manipulate abstract concepts. Use brain teasers and riddles to foster analytical thinking. Focus on open-ended questioning.
- *Formal Operational Stage*- Offer step-by-step explanations of concepts and utilize charts and other visual aids. Explore hypothetical situations. You may relate them to current events or social issues. Broaden concepts whenever possible.

CRITICISMS

There are some criticisms of Piaget's stages. In particular, researchers in the 1960s and 1970s argued that Piaget may have underestimated children's abilities by using confusing terms and particularly difficult tasks in his observations. In other studies, children have been successful with demonstrating knowledge of certain concepts or skills when they were presented in a simpler way. Piaget's theory also explains that trying to teach children particularly advanced concepts would be unsuccessful. Children may be able to learn advanced ideas even with brief instruction. Children may be more adaptable and competent than Piaget's stages give them credit for. Last, Piaget primarily examined white, middle-class children from developed countries in his work. As a result, his findings may be skewed to this subset of people, and may not apply as directly to other groups or locations. Culture/society (Socio-Cultural) influence ignored, Effect of training ignored, Trouble with stages, Under-estimated child's abilities, Over-estimated adult's abilities.

CONCLUSION

Piaget's work is known all over the world and is still an inspiration in fields like psychology, sociology, education, epistemology, economics and law as witnessed in the annual catalogues of the Jean Piaget Archives. He was awarded numerous prizes and honorary degrees all over the world.

Conclusively the results of Piaget's work changed the way that teachers, parents and all those who work with and around children observe the children's behaviour and response to

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their environment. Piaget's work specifically had an impact on the teaching of education in schools.

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Conflict of Interest

The author(s) declared no conflict of interest.

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