April 15, 2022

Cognitive Development in Children: Piaget's Theory

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Jean Piaget (1896 - 1980), a famous Swiss developmental psychologist, was one of the most prominent developmental researchers during the twentieth century. His early work focused on biology and philosophy, and he sought to investigate how an adult developed the ability to reason logically and form accurate judgments from facts.

Throughout his career, Piaget researched the development of logical reasoning in children. By examining children's memory processes, his goal was to document the stages of cognitive growth. He felt that our capacity for "abstract symbolic reasoning" sets us apart from other species. More than anything else, Piaget was interested in how children's cognitive skills changed throughout their lives.

Piaget developed an interest in children's reasoning while working in a Parisian IQ testing facility. It occurred to him that younger children's answers were markedly different from those of older children. Their responses did not, according to Piaget, show a lack of intelligence due to inexperience, but rather; he believed this was due to younger youngsters thinking differently.

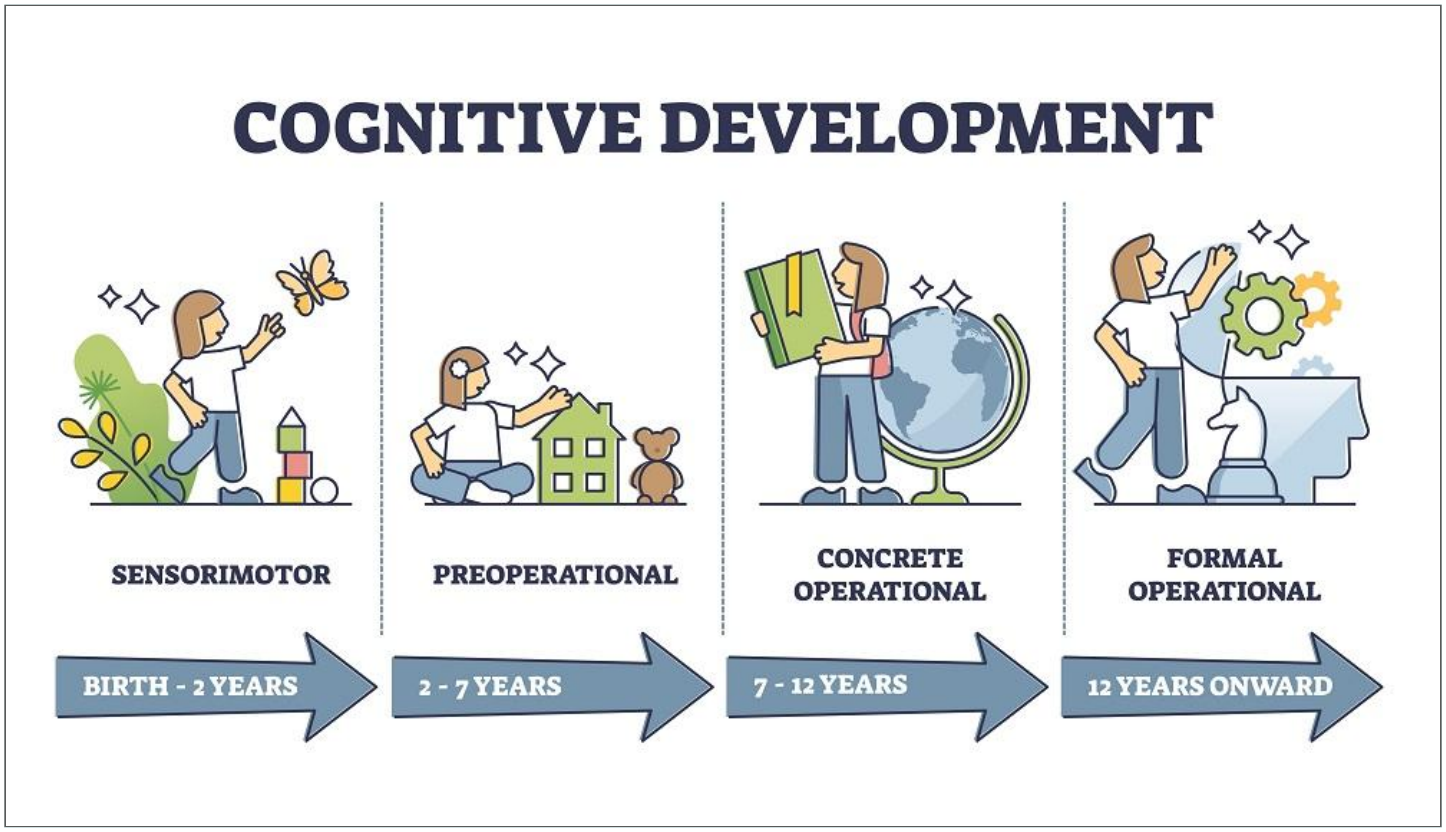
Cognitive Processes

According to Piaget, children balance assimilation and accommodation when processing knowledge or a new experience. In assimilation, new information is taken in and integrated into preexisting mental models, whereas in accommodation, the preexisting mental model is adapted and changed in light of the new knowledge. In other words, when children learn a new concept, they first evaluate their existing understanding and then alter their expectations to integrate the new information. These two processes are

utilized throughout one's life. As a result, children's long-term development is highly influenced by the new concepts they are exposed to.

Schemata (sometimes referred to as schema or schemes) are cognitive systems children employ to define their world and implement a plan of action. Schemata influence behavior and are compelled by a biological need to achieve harmony between systems and the environment. The term for this balancing act is called equilibration.

Based on Piaget's hypothesis, children progress through a series of stages until they reach adult-level thinking. Since a child must pass from one level to the next, this model can be defined as a "staircase" model. Piaget's theory is built upon four distinct phases in children:



Sensorimotor Stage

Infant – age 2

From birth, babies learn through touch, sight, and sound. They have a strong oral fixation and tend to put items in their mouths as a way of exploring. Piaget noted that infants' activities reveal their mental processes. While an infant's first experience with a toy may be confusing, repeated exposure allows them to understand how it works and what it represents cognitively. Around six months, children start organizing ideas into solid conceptions. As a result, we may see knowledge in newborns when they learn to

recognize a thing for what it is. For example, by repeatedly playing with a soft ball, a newborn learns what it is and remembers their previous experiences with it.

A few innovative experiments were devised by Piaget to understand what newborns were thinking. As a result of his research, it was concluded that babies do represent objects and comprehend their permanence. Piaget put a toy behind a blanket in one of his trials. Unlike babies less than six months of age, toddlers (children between the ages of 18 and 24 months) showed initiative in searching for the toy on their own. To describe this understanding, Piaget used the term “object permanence,” which means that the child is aware of the item even when it is not in plain sight. He saw this as a significant development within this stage and illustrative of the distinctions between toddlers and young babies regarding their mental processes.

Unlike other stages, the sensorimotor level doesn’t involve the use of language. Early intellectual development, according to Piaget, is essentially the result of a child’s interactions with items in their surroundings.

Preoperational Stage

Ages 2-7

Throughout the sensorimotor stage, children continue to expand their object representations. As a marker of this age and stage, imaginative play, “playing pretend” or

playing make-believe games are common. There are two substages in this stage: the use of symbols, and the development of memory and imagination, even though the way they utilize items can look nonsensical. Dramatic play helps them develop these memory and symbolism skills, even if the way they represent objects is incorrect.

One of the first signs of metacognition, or dual thinking, can be seen in children's dramatic play. When youngsters are playing, they also consider the real-world experience, so children should be encouraged to engage in imaginative activities in early elementary school. Children in this stage are also considered to be highly egocentric.

Learning app for kids may be used to train a child's memory and imagination.

Concrete Operational Stage

Ages 7-11

At this level, intelligence is displayed by logically manipulating symbols connected to concrete objects. Early school years foster scientific thinking and awareness of conservation rules, such as weight and volume. A youngster can comprehend various viewpoints and a single point of view on a given circumstance. A focus moves from "learning to read" to "reading to learn" and from spelling to writing activities, around the ages of 8-9.

Attention and processing abilities, receptive and expressive language and the ability to build and remember long-term memories are all required within these skill sets. However, this stage is hindered by a lack of understanding of abstract concepts. Operational thinking grows through two functions not seen in the previous stage of development: reversibility and decentering.

First, reversibility enables a child to change the sequence in which any procedure is carried out. A child might try out an experiment in several ways, such as out of sequence (think building a block tower in different ways or a child engaging in water play). Reversibility is an important learning skill since many classroom methods include multi-step activities.

The second ability is decentering, enabling a young learner to look at a problem from several perspectives. Perspective-taking is an essential element of the operational stage. This capability emerges in the preoperational period when youngsters begin to play make-believe. According to Piaget, children at the concrete operational stage make more deliberate and planned choices, indicating awareness of decentering.

Formal Operational Stage

Ages 11 – Adulthood

There is a return to egocentric thinking early in this stage. Cognitive ability is displayed at this level by the logical application of symbols to abstract principles. In this stage, children can think more abstractly, make thoughtful inferences, and have the capacity to manipulate different outcomes. Students are much more successful with hypothetical problem solving because of their better ability to engage in self-reflection and multi-perspective thinking.

Piaget demonstrated these processes by conducting science experiments in middle- and high-school settings. Students were not allowed to manipulate any objects related to a scientific problem but were instead limited to discussing factors verbally with each other only. This meant that the students were required to mentally picture all the aspects of the problem separately while accounting for the elements that stayed constant. Logically addressing these problems was a strong indicator of formal thinking.

Piaget's Theory in Research

Piaget used a lot of case studies to exemplify this in his research, and some of his ideas have been backed up by more correlational and experimental methods. However, his theory has received some criticism because of its inability to generalize to other skills learned throughout childhood. For example, his formal operational stage demonstrated skills only found in educational scientific problem-solving.

Piaget's theory of cognitive development is highly significant to teaching and learning. It is based on constructivist learning principles (learners construct new knowledge by building on what they already know). Research on constructivist-based teaching shows that a wide variety of concrete experiences benefit and support high-quality learning. Children should have many opportunities to engage in hands-on, exploratory activities that focus on the process of learning, not the end result. Visit Kids Academy for quality learning activities that you and your child can do together. Pay special attention to the learning worksheets that are aimed at fastening the current experience and developing new patterns and knowledge in children.

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