PIAGET'S COGNITIVE DEVELOPMENT

The Contributions of Jean Piaget

Jean Piaget[1] was born August 9, 1896, in Neuchâtel, Switzerland. His first interests were in biology. A gifted child, he published his first paper at age ten on the albino sparrow, followed by several articles on mollusks and snails by the time he was fifteen. When he was 27, he married a fellow student at the University of Neuchâtel, Valentine Chatenay, and as their three children were born, Piaget began to watch them as intensely as he had observed snails as a boy. He developed his theories of learning based on his careful observations of his children and a nephew and their cognitive development.

Piaget developed an intense interest in identifying and classifying how children learn when he was at the University. This idea, called cognitive development, explains how a person's ability to think, learn, remember, problem-solve, and make decisions changes over time. His theory suggested that the rate of cognitive development was related to physical development. He believed that a child's cognitive development was not just about gaining knowledge, but also about the child's ability to develop an idea of the world, or a schema. In order to create this schema, the child must actively explore and interact with the environment using the ideas of assimilation and accommodation. Assimilation happens when a child adds new knowledge to existing knowledge. Accommodation happens when new information replaces or changes existing knowledge. Cognitive equilibration results when the child changes existing schemas or forms new ones in order to create a new understanding.

Theory of Cognitive Development

Before Piaget's theory, it was believed that children's minds were smaller versions of adult minds. He argued, however, that children think differently from adults and that intelligence grows in stages. Each of the four stages he identified represents a new way of thinking and understanding the world. Teaching and learning need to be active, exploratory processes to experiment and discover things, to question, to discuss, and to reflect and solve problems. Piaget believed that learners were active in developing their knowledge and that children were capable of learning certain material in certain stages of cognitive development. He offered four conditions to his theory:

1. The stages always happen in the same order.
2. No stage is ever skipped.
3. Each stage is a significant transformation of the stage before it.
4. Each later stage combines the earlier stages into itself.

Description of the Four Stages

The first stage of development is the **sensorimotor stage**, which begins at birth and peaks around age two. Children learn about the world through their senses and through the handling of objects. Children at this age experience life through basic reflexes, senses, and motor responses. They interact with their environment and constantly make new discoveries. They learn to walk, and their sense of touch introduces them to countless things in their environment. One important aspect of learning that happens during this phase is the idea of object permanence, or the understanding that objects continue to exist even though they cannot see them. Near the end of this stage, children attach names and words to objects and discover the stimulus response reaction. In other words, a baby communicates their

[1] Pronunciation: Zhan Pee-ah-Zhay

needs to parents by crying or making other noises. The child is able to have physical interactions with their environment, create a reality, and understands how it works.

The **preoperative stage** lasts from about the age of two to around seven years old. Language and imagination are the major accomplishments of this stage. Children become more and more talented at using objects to represent ideas, and they have the ability to follow a logical train of thought. They understand ideas related to letters, numbers, and space like the differences between *on* and *in*. They know the difference between the past and the present. Problem-solving is a very important part at this stage. The child's vocabulary increases and sentences progress from one and two-word phrases to complete sentences. However, their world view is self-centered, and they assume that everyone else shares that point of view.

The **concrete operational** stage lasts from about ages 7 to 11. These years are known as the pre-teen years. At this stage, children are capable of using logical processes of thinking on the basis of clear evidence. Problem-solving and reasoning reach adult capacity. Children move from a self-focused view to imagining things that happen beyond their individual worlds. They become less self-centered and begin to understand that not everyone shares their thoughts, beliefs, or feelings. They depend on concrete facts and physical objects to finally decide something. They understand some abstract ideas, but they still rely mostly on what they can see.

The **formal operational** stage lasts from ages 11-15. Children develop abstract and hypothetical reasoning. The child can now create possible solutions to a problem in a well-thought-out fashion. In decision-making, they think about moral questions of right and wrong. And they are able to use logic to solve problems, to view the world around them, and to plan for the future. They weigh the chance that unexplainable things can happen. The highest level of thinking appears during this stage, and the child is capable of going beyond clear evidence.

Piaget's Influence on Modern Psychology

Piaget changed our understanding of cognitive development by proposing that children are not passive receivers of information, but active constructors of their own knowledge. He drew attention to the role of social interaction, language, and play in the development of children's thinking. His theory has motivated many researchers to investigate how children learn and think in different domains, such as mathematics, science, morality, and art. He has also influenced educational practices, such as discovery learning and teamwork, and adapting instruction to the child's level of understanding. Some scholars have criticized Piaget for being too stiff, too general, and relying too much on his own observations without considering alternative perspectives. His theory has also been rewritten and extended by other researchers who have combined new findings and perspectives. Piaget's theory remains a valuable foundation for understanding the cognitive development of children.

Sources

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