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TOPIC: PIAGET'S THEORY OF COGNITIVE
DEVELOPMENT

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- Cognition refers to thinking and memory processes, and cognitive development refers to long-term changes in these processes. One of the major theories of cognitive development is of Piaget. Piaget who was working primarily at Geneva University in Switzerland, began his investigations into the workings of the child's mind because of an interest in epistemology. Epistemology is a branch of Philosophy, is the study of knowing. Piaget wanted to discover how we come to know what we know. Piaget used phenomenological method to study the child's mind. The phenomenological method is characterized by asking a child a series of carefully worded questions that direct the child's attention to particular details of the child's immediate world. The child's responses reveal the way in which the he or she thinks about the world. Piaget's investigations suggest that there are four stages of cognitive development, the development of the way in which the child thinks.



- Piaget introduced the concept of **schemas** as the basic units of knowledge, the building blocks of intellectual development. **schemas** are the mental images or generalizations that form as people experience the world. Schemas, in other words, organize past experiences and provide a framework for understanding future experiences. At first, infants form simple schemas. Later, children form more complex schemas.
- Two related processes guide this development: **Assimilation** and **Accommodation**. In **assimilation**, infants and children take in information about new objects by trying out existing schemas and finding schemas that the new objects will fit. They assimilate the new objects into their existing schemas. So when an infant is given a squeaker toy, he will suck on it, thus assimilating it into the sucking schema he has developed with his bottle.
- In **accommodation**, the person tries out familiar schemas on a new object, finds that the schemas cannot be made to fit the object, and changes the schemas so that they will fit.

- After observing children closely, Piaget proposed that cognition developed through distinct stages from birth through the end of adolescence. By stages he meant a sequence of thinking patterns with four key features:
 - They always happen in the same order.
 - No stage is ever skipped.
 - Each stage is a significant transformation of the stage before it.
 - Each later stage incorporated the earlier stages into itself.
 - Piaget proposed four major stages of cognitive development, and called them
 - (1) sensorimotor intelligence,
 - (2) preoperational thinking,
 - (3) concrete operational thinking, and
 - (4) Formal operational thinking. Each stage is correlated with an age period of childhood, but only approximately.
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- 1) **The sensorimotor stage** is associated with infancy (birth to two years old). During this stage the infant has consciousness, but not self-consciousness. He or she is, of course, aware of the environment. There are reflexes. This is a time when mental activity is confined to schemas about sensory functions, such as seeing and hearing, and to schemas about motor skills, such as grasping and sucking. Piaget believed that during the sensorimotor stage, infants can form schemas only of objects and actions that are present or things they can see, hear, or touch. The representation acquires a permanence lacking in the individual experiences of the object, which are constantly changing. Piaget called this sense of stability **object permanence**, a belief that objects exist whether or not they are actually present. It is a major achievement of sensorimotor development, and marks a qualitative transformation in how older infants (24 months) think about experience compared to younger infants (6 months).



- **2) The preoperational stage** is associated with toddlerhood and the preschool age (two to seven years old). The term preoperational is used to suggest that during this stage the child has not yet grasped the concept of cause and effect. Instead, the child tends to think in magical terms. Magical thinking is characterized by an absence of the recognition of the importance of the laws of nature.
 - Two additional characteristics of the preoperational stage are anthropomorphic thinking and egocentrism. **Anthropomorphic thinking** is characterized by a tendency to explain natural events in terms of human behavior. **Egocentrism** is a tendency to perceive oneself as existing at the center of the universe. These children do not yet have what Piaget called conservation, the ability to recognize that important properties of a substance or a person such as number, volume, or weight, remain the same despite changes in shape or appearance. They are thinking on two levels at once—one **imaginative** and the other **realistic**. This dual processing of experience makes dramatic play an early example of **metacognition**, or reflecting on and monitoring of thinking itself. This is why teachers of young children often make time and space in their classrooms for dramatic play, and sometimes even participate in it themselves to help develop the play further.
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- **3) The concrete operations stage** is associated with middle childhood (seven to twelve years old). Children can count, measure, add, and subtract. They can use simple logic and perform simple mental manipulations and mental operations on things. Piaget called this period the concrete operational stage because children mentally operate on concrete objects and events. During this stage, children are usually interested in how clocks work, how measurements are made, and why this causes that to happen. They often like to assemble things. Children at this stage understand the logic of **reversibility**—that if you just poured the water from one container to another, you can pour it back, and it will be the same amount. Nor do they understand the concept of **complementarity**—that one glass is taller but narrower, and the other is shorter but wider. The development of concrete operational skills support students in doing many basic academic tasks, in a sense they make ordinary schoolwork possible.



- **4) The formal operations stage** is associated with adolescence and adulthood. It is characterized by the ability to think in abstract terms. The adolescent and adult can understand algebra. Formal operational thought makes it possible to use both inductive and deductive logic. The adult can reflect, analyze, and rethink ideas and viewpoints. It is marked by the ability to engage in hypothetical thinking. They can think logically and systematically about symbols and propositions.
- For teachers, the limitations of Piaget's ideas suggest a need for additional theories about development—ones that focus more directly on the social and interpersonal issues of childhood and adolescence.

