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GENOCIDE PREVENTION: GENOCIDE EDUCATION PROJECT
NATIONAL TEACHER TRAINING
FOR LOWER AND UPPER SECONDARY SCHOOL OF CAMBODIA

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COGNITIVE DEVELOPMENT
JEAN PIAGET

Piaget has been identified as a constructivist as well as an interactionist. His interest in cognitive development came from his interest in the origin of knowledge and his training in the natural sciences. Piaget was very interested in how children come to know and understand their world. He developed his cognitive theory by actually observing and studying children (some of whom were his own children). Using a set of questions as a starting point, he followed the child's train of thought and allowed the questioning to be flexible. Piaget believed that children's spontaneous or unprompted comments provided valuable clues to understanding their thinking. He was not interested in a right or wrong answer, but rather what forms of logic, reasoning and thinking process the child used (Singer, 1978). After many years of observation, Piaget concluded that cognitive development is the result of the interaction of hereditary and environmental factors. As children develop and constantly interact with the world around them, knowledge is invented and reinvented and evolves through time. Piaget's theory of cognitive development is strongly formulated in the biological sciences. He saw cognitive growth as an extension of biological growth and as being governed by the same laws and principles (London, 1988). He argued that cognitive development controlled every other aspect of emotional, social and moral development.

Stages of Cognitive Development

Piaget discovered that children think and reason differently at different periods in their lives. He believed that everyone experiences an orderly sequence of four distinct stages. Although every normal child passes through the stages in exactly the same order, there is some variability in the ages at which children attain each stage. Piaget's four stages of cognitive development are:

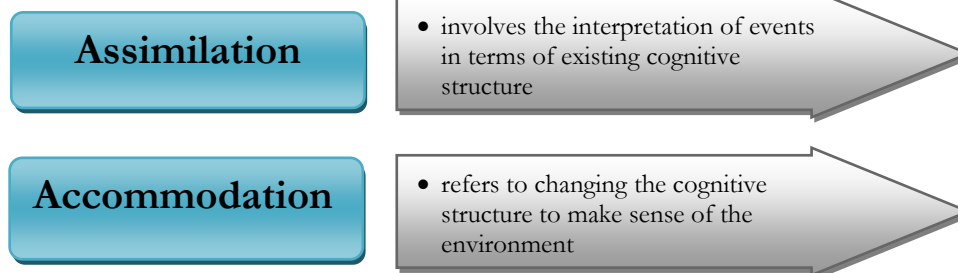| Stages s	Age Range	Cognitive Tasks
Sensorimotor	birth to 2 years	Learn mastery of concrete objects.
Preoperational	2 years to 7 years;	Learn mastery of symbols.
Concrete Operational	7 years to 11 years	Learn mastery of classes, relations, and numbers and how to reason.
Formal Operational (abstract thinking)	11 years and up	Learn mastery of thought (Evans, 1973).

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The stages of cognitive development identified by Piaget are linked with age span and individual characteristics of the child. According to Piaget, each stage has many detailed structural forms. For example, the concrete operational period has more than forty distinct structures covering classification and relations, spatial relationships, time, chance, movement, number and measurement.

Cognitive structures change through the processes of a constant effort of adaptation: assimilation and accommodation.

Assimilation
- involves the interpretation of events in terms of existing cognitive structure

Accommodation
- refers to changing the cognitive structure to make sense of the environment

Example	Principle
In the sensorimotor stage, teachers should try to provide a rich and stimulating environment with ample objects for student to play with. In the concrete operational stage, teachers should provide learning activities that involve problems of classification, ordering, location, conservation using concrete objects.	1. Children will provide different explanations of reality of different stages of cognitive development. 2. Cognitive development is facilitated by providing activities or situation that engage learners and require adaptation (i.e., assimilation and accommodation). 3. Learning materials and activities should involve the appropriate level of motor or mental operations for a child of given age, avoid asking students to perform tasks that are beyond their current cognitive capabilities. 4. Use teaching methods that actively involve students and present challenges.

Implication for Education

Piaget's educational pedagogy emphasizes a learner-centered educational philosophy. Therefore, educational curriculum and learning experiences should be plan to allow opportunities for assimilation and accommodation. Students need to explore, to experiment, to manipulate, to question, and to search out answers for themselves-activity is essential. However, this does not mean that they should be allowed to do whatever they want.

So what role should teacher take on? Teacher should be able to assess the students' present cognitive level, their strengths and weaknesses. Instruction should be individualized as much as possible and students should have opportunities to communicate with one another, to discuss and debate the issue. Teachers should take on the role of facilitators of knowledge-they are there to guide and stimulate the students. Teachers should allow students to make mistakes and to learn from them.

Learning is much more meaningful if students are allowing to experiment on their own rather than listening to the teachers lecture. The teacher should present students with materials and activities that allow them to discover new learning.

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