

## **Theory Of Cognitive Development By Jean Piaget**

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### **Abstract**

Although many core themes and concepts unite the field of cognitive development, it is a wide and varied field, particularly when it comes to cognitive development in early. Piaget proposed four cognitive developmental stages for children, including sensorimotor, preoperational, concrete operational, and the formal operational stage. Although Piaget's theories have had a great impact on developmental psychology, his notions have not been fully accepted without critique. Piaget's theory has some shortcomings, including overestimating the ability of adolescence and underestimating infant's capacity. Piaget also neglected cultural and social interaction factors in the development of children's cognition and thinking ability. Cognitive development occurs at several stages during childhood. As a result, cognitive development studies the nature of child development in terms of how they gain conscious control over their intellect and behavior. Piaget contributions, particularly in regards to the process of education among children and transferring cognition into psychology, have had a significant effect on the science of child development.

**Keywords: Cognitive Development, Child Development**

### **INTRODUCTION**

The area of human development is essentially important for any educator, parent, minister or anyone in the field of leadership. Commonly speaking, the physical components - including aging as another important matter - are usually the main aspects while observing growth. Yet, they are not the only factors of development; consequently, any leader should be capable to identify all areas of growth that eventually will affect the subjects' personality, behavior, actions and reactions. Almost all scientists agree that someone's behavior is either condition by his environment or by his intrinsic value. That refers to the nature-nurture debate. Some believe in the combination of both. Some authors label the nurture aspect as civilization or environment.

Civilization - as a factor of impact on one's behavior - embraces history, family background, social system and components, and space of evolution. Nature covers biological components such as genetic composition or heredity, and all internal factors of development. Considering either nurture (influences of environment) or nature (individual characteristics), scientific studies have established some general outlines that

define individuals at a specific stage of life while providing some common characteristics of their behavior.

Jean Piaget, a Swiss psychologist was particularly concerned with the way thinking develops in children from birth till they become young adults. To understand the nature of this development, Piaget carefully observed the behaviour of his own three kids. He used to present problems to them, observe responses slightly after the situations and again observe their responses. Piaget called this method of exploring development clinical interview.

Piaget believed that humans also adapt to their physical and social environments in which they live. The process of adaptation begins since birth. Piaget saw this adaptation in terms of two basic processes: Assimilation and Accommodation. Assimilation refers to the process by which new objects and events are grasped or incorporated within the scope of existing schemes or structures. This means that when you are faced with new information, you make sense of this information by referring to information you already have (information processed and learned previously) and try to fit the new information into the information you already have. For example, a 2-year-old child sees a man who is bald on top of his head and has long frizzy hair on the sides. To his father's horror, the toddler shouts "Clown, clown". Accommodation is the process through which the existing schemes or structure is modified to meet the resistance to straightforward grasping or assimilation of a new object or event. In order to make sense of some new information, you actual adjust information you already have (schemas you already have, etc.) to make room for this new information. For example, a child may have a schema for birds (feathers, flying, etc.) and then they see a plane, which also flies, but would not fit into their bird schema. In the "clown" incident, the boy's father explained to his son that the man was not a clown and that even though his hair was like a clown's, he wasn't wearing a funny costume and wasn't doing silly things to make people laugh. With this new knowledge, the boy was able to change his schema of "clown" and make this idea fit better to a standard concept of "clown".

According to Piaget there are 4 basic elements in development:

1. Maturation.
2. Experience.
3. Social transmission (learning through language, schooling or teaching by parents)
4. Equilibrium.

The important concept of Piaget's theory of cognitive development is the fixed progression from one stage to another. Piaget viewed cognitive growth as a progressive change. Growth varies from person to person. Piaget assumed that it follows a fixed sequence.

### **Stages of cognitive development.**

Piaget has identified 4 sequential stages through which every individual progresses in cognitive development. Each stage has an age span with distinctive learning capabilities. This would be helpful in framing curriculum. And understanding of this development sequence is indispensable for parents as well as for teachers because these

influences a great deal during infancy, childhood and adolescence. The 4 developmental stages are discussed below:

### **1. Sensori-Motor Stage.**

This stage begins at birth and lasts till the child is about 2 years old. It is called Sensori-Motor Stage, because children's thinking involves seeing, hearing, moving, touching, testing and so on. This stage marks a transitional stage for a person from a biological to a psychological being. In the first few weeks of life the baby's behaviour consists simply of reflex responses, such as sucking, stepping and grasping. Later the reflex disappears and the baby chooses what and when to grasp. During this period the infants attain the concept of object permanence. This refers to the understanding that objects and events continue to exist even when they cannot directly be seen, heard or touched. Till this kind of understanding is achieved, an object that is out of sight remains out of mind and therefore, becomes non-existent. A second major accomplishment in the Sensori-Motor period is learning to reverse actions. E.g., we give a toy to a child that has ten detachable parts. We detach all parts. Through trial and error, the child gradually learns to attach all the parts of the toy.

### **2. Pre-Operational Stage (2 to 7 Years).**

This stage is called Pre-Operational because the children have not yet mastered the ability to perform mental operations. Children's thinking during this stage is governed by what is seen rather than by logical principles. Following are the accomplishments of Pre-Operational Stage:

#### **a. Semantic function.**

During this stage the child develops the ability to think using symbols and signs. Symbols represent something or someone else; for example, a doll may symbolize a baby, child or an adult.

#### **b. Egocentrism.**

This stage is characterized by egocentrism. Children believe that their way of thinking is the only way to think.

#### **c. Decentering.**

A pre-operational child has difficulty in seeing more than one dimension or aspects of situation. It is called decentering.

#### **d. Animism.**

Children tend to refer to inanimate objects as if they have life-like qualities and are capable of actions.

#### **e. Seriation.**

They lack the ability of classification or grouping objects into categories.

#### **f. Conservation.**

It refers to the understanding that certain properties of an object remain the same despite a change in their appearance.

### **3. Concrete Operational Stage (7 to 11 years).**

At this stage a child is concerned with the integration of stability of his cognitive systems. He learns to add, subtract, multiply and divide. He is in a position to classify

concrete objects. In short, children develop the abilities of rational thinking but their thinking is tied to concrete objects.

#### **4. Formal Operational Stage (11 & above).**

This type is characterized by the emergence of logical thinking and reasoning. Other important cognitive attainments during this period are: the ability to think about the hypothetical possibilities and to solve problems through logical deductions and in a systematic manner.

#### **Educational Implications**

Piaget (1952) did not explicitly relate his theory to education, although later researchers have explained how features of Piaget's theory can be applied to teaching and learning. Piaget has been extremely influential in developing educational policy and teaching practice. For example, a review of primary education by the UK government in 1966 was based strongly on Piaget's theory. Discovery learning – the idea that children learn best through doing and actively exploring – was seen as central to the transformation of the primary school curriculum.

The report's recurring themes are individual learning, flexibility in the curriculum, the centrality of play in children's learning, the use of the environment, learning by discovery and the importance of the evaluation of children's progress – teachers should 'not assume that only what is measurable is valuable. Because Piaget's theory is based upon biological maturation and stages, the notion of 'readiness' is important. Readiness concerns when certain information or concepts should be taught. According to Piaget's theory children should not be taught certain concepts until they have reached the appropriate stage of cognitive development.

According to Piaget (1958), assimilation and accommodation require an active learner, not a passive one, because problem-solving skills cannot be taught, they must be discovered. Within the classroom learning should be student-centered and accomplished through active discovery learning. The role of the teacher is to facilitate learning, rather than direct tuition. Therefore, teachers should encourage the following within the classroom:

1. Focus on the process of learning, rather than the end product of it.
2. Using active methods that require rediscovering or reconstructing "truths."
3. Using collaborative, as well as individual activities (so children can learn from each other).
4. Devising situations that present useful problems, and create disequilibrium in the child.
5. Evaluate the level of the child's development so suitable tasks can be set.

#### **Conclusion**

Piaget divided children's cognitive development in four stages, each of the stages represent a new way of thinking and understanding the world. He 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. According to Piaget, intellectual development takes place through stages which occur in a fixed order and which are universal (all children pass through these stages regardless of social or cultural background). Development can only occur when the brain has matured to a point of "readiness". Schemas are mental structures which contains all of the information we have relating to one aspect of the world around us. According to Piaget, we are born with a few primitive schemas such as sucking which give us a mean to interact with the world. These are physical but as the child develops they become mental schemas. These schemas become more complex with experience.

Cross-cultural studies show that the stages of development (except the formal operational stage) occur in the same order in all cultures suggesting that cognitive development is a product of a biological process of maturation. However the age at which the stages are reached varies between cultures and individuals which suggests that social and cultural factors and individual differences influence cognitive development.

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