

## Session 4

### Learning Theories: Jean Piaget's Cognitive Development and Lev Vygotsky's Sociocultural Theory of Cognitive Development

#### A. Introduction

The Cognitive Development theory of Jean Piaget has a little similarity with the theory of Socio-cultural on cognitive development of Lev Vygotsky but the context on the acquisition of knowledge is different. On Piaget's it is more focus on individual development while on Vygotsky's it is more of social interaction.

#### B. Session Objectives

- To explain each development stages in the Cognitive Development theory of Piaget.
- To describe the different school and home scenarios that are related to the cognitive development of the child and adolescent learners.
- To compare and contrast the Cognitive Development theory of Piaget to Lev Vygotsky's Cognitive Development on Sociocultural context.

#### C. Session Content

##### 1. Topic 1

In the above situations, the children were of different in age, so there should be an obvious differences in their way of thinking, they were at different stages of cognitive development. Perhaps no one influenced the field of cognitive development more than Jean Piaget. By reading this module, you will gain an understanding of the cognitive development of children and young people and find ways to apply this understanding to teaching pupils.

From his studies, Piaget devised the stages of cognitive development. Piaget explored the implications of his theory not only for aspects of thinking, but also for intelligence and moral development. His theory has been widely

applied in teaching and curriculum development, especially in preschool and elementary school curricula.

### **Basic Cognitive Concepts**

**Schema.** Piaget used the term "schema" to refer to the cognitive structures by which people intellectually adapt and organize their environment. It is an individual's way of understanding or creating meaning for a thing or experience. It's like a mental cabinet, and each drawer has folders that contain files about what he experienced.

**Assimilation.** It is the adaptation of new experience into an existing or previously established cognitive structure or schema. If the child sees another dog, this time a little smaller, he would feel what he saw, adding this new information (a different appearance of a dog) to his dog diagram.

**Accommodation.** This is the process of creating a new model. If the same child now sees another animal that looks a bit like a dog, but somehow different. He can try to match it with his dog model and say, "Look mom, what a funny looking dog. His barking is funny too!" Then the mother explains: "It's not a funny-looking dog. It's a goat!" With the mother's additional descriptions, the child now creates a new model, the goat model. Now he adds a new file to his locker.

**Equilibration.** Piaget believed that people have a natural need to understand how the world works and to find order, structure and predictability in their lives. Balance is getting the right balance between assimilation and adaptation. When our experiences do not match our schema (plural of schemas) or cognitive structures, we experience cognitive disequilibrium.

This means that there is a difference between what is experienced and what is understood. We then try to rebalance through assimilation and adaptation.

## **Piaget's Stages of Cognitive Development**

### **Stage 1. Sensori-motor Stage.**

The first stage corresponds from birth to childhood. This is the stage when the child, who is initially reflexive in grasping, sucking and reaching, becomes more organized in his movements and actions. The term sensorimotor focuses on the visibility of the senses and muscle movements through which the child learns about himself and the world.

**Object permanence.** This is the ability of the child to know that an object still exists even when out of sight.

### **Stage 2. Pre-Operational Stage.**

**Symbolic Function.** It is the ability to imagine objects and events. A symbol is a thing that represents something else.

**Egocentrism.** It is a child's tendency to see only his own point of view and assume that everyone else has the same point of view. A child cannot take other people's points of view.

**Centration.** It refers to a child's tendency to focus on only one thing or event to the exclusion of other aspects.

**Irreversibility.** Preoperative children are not yet able to reverse their thinking. They understand that  $2 + 3 = 5$ , but they don't understand that  $5 - 3 = 2$ .

**Animism.** It is the tendency of children to attribute human characteristics or qualities to inanimate objects.

**Transductive reasoning.** This refers to a type of reasoning in the pre-functional child that is neither inductive nor deductive. The reasoning seems to be concrete to concrete, ie. if A causes B, then B causes A.

**Stage 3. Concrete-Operational Stage.** This stage is characterized by the ability of the child to think logically but only in terms of concrete objects.

This stage is characterized by the child's ability to think logically, but only with concrete objects.

**Decentering.** It refers to the child's ability to perceive different characteristics of objects and situations. The child is no longer focused and limited to one aspect or dimension. In this way, the child can be more logical when dealing with specific objects and situations.

**Reversibility.** In the phase of concrete actions, the child can now observe that certain actions can also be done in reverse.

**Conservation.** It is the ability to know that certain properties of objects, such as number, mass, volume or surface area, do not change even when their appearance changes.

**Seriation.** It refers to the ability to order or arrange things in a series based on a single dimension, such as weight, volume, or size.

### Stage 4. Formal Operational Stage.

In the final stage of formal operations covering ages between 12 and 15 years, thinking becomes more logical. They can now solve abstract problems and can hypothesize. This stage is characterized by the following:

**Hypothetical Reasoning.** It is the ability to present various hypotheses about a problem and gather and weigh information to make a final judgment or decision. This can be done without specific goals. Individuals can now address "What if" questions.

**Analogical reasoning.** It is the ability to perceive a relationship in one case and then use that relationship to narrow down possible responses in another similar situation or problem.

**Deductive Reasoning.** It is the ability to think logically by applying a general rule to a specific case or situation.

### 2. Topic 2

When Vygotsky was a small boy, he was educated by a teacher who used the Socratic method. This method was a systematic question-and-answer approach that allowed Vygotsky to explore current thinking and practice higher understanding. That experience, his interest in literature and teaching led him to define social interaction and language as two central factors in cognitive development. His theory became known as the sociocultural theory of development.

Piaget	Vygotsky
More individual in focus Believed that there are universal stages of cognitive development	More social in focus Did not propose stages but emphasized on cultural factors in cognitive development
Did not give much emphasis on language	Stressed the role of language in cognitive development

### **Social interaction.**

Piaget's theory was more individualistic, while Vygotsky's theory was more social. Piaget's work on Piaget's tasks focused largely on how an individual's cognitive development became evident through the individual's own task processing. Vygotsky, on the other hand, placed more emphasis on social interactions that influenced the cognitive development of individuals. For him, the social environment or community plays an important role in human development. Vygotsky emphasized that effective learning occurs through participation in social activities, making the social context of learning crucial. Parents, teachers and other adults around the students participate in the process. They explain, model, help, provide guidance and feedback to the learner. Peers, on the other hand, collaborate and enrich the learning.

### **Cultural factors.**

Vygotsky believed in the crucial role of culture in the cognitive development of children. Piaget believed that as a child develops and matures, it goes through universal stages of cognitive development that allow it to move from simple exploration with the senses and muscles to complex reasoning. Vygotsky, on the other hand, looked at the wide variety of experiences that culture gives a child. For example, one culture's view of education, of educating children at an early stage, can influence a child's cognitive development.

### **Language.**

Learners can use language to know and understand the world and to solve problems. Language has a social function, but it also has an important individual function. This helps the learner to regulate and reflect on their thinking. Children talk to themselves. Watch preschoolers play and you might hear, "Gagawin ko itong airplane (holds a rectangular block), Tapos ito ang airport (holds two long blocks)." For Vygotsky, this "talking to oneself refers to the thinking happening in the child's head." This will eventually lead to a private conversation. Private speech is a form of self-talk that directs the child's thinking and actions. Vygotsky believed in the important role of activity in learning. Children learn best through hands-on activities, not passive listening. Learning by doing is even more fruitful when children interact with experienced adults and peers.

## **Zone of Proximal Development**

When a child tries to perform a skill independently, he may not be good at it right away. So alone he can pass some qualifications. We call it the zone of true development. However, under the guidance of a more experienced other (MKO), a qualified adult, or a more advanced peer, a child can gain higher qualifications. Vygotsky called the zone of proximal development the difference between what a child can achieve independently and what he can achieve with the guidance of another. A zone represents a learning opportunity where an experienced adult, such as a teacher or an older or more advanced peer, can support a child's development. The support or help that enables the child to perform a task that he cannot perform on his own is called scaffolding. Scaffolding is not about completing a task for the child while they watch.

## **D. Conclusion**

Both theories that were presented by Piaget and Vygotsky complement one another in term of cognition. Both can be applied in and out of he school context. They are also applicable when incorporated with the teaching strategies and approaches.

## **E. References**

- Acero, V.; Javier, E. & Castro, H. (2004). Human development and learning. Manila, Philippines: Rex
- Bergin, C. & Bergin, D. (2012) Child and adolescent development in your classroom. USA: Elm Street Publishing
- Chozas, M. (2011) General psychology (Modular approach, revised edition). Quezon City, Philippines: St. Andrew.
- Corpuz, B., et.al. (2010). Child and Adolescent Development: Looking at Learners at Different Stages. Quezon City, Philippines: Lorimar
- Dacey, J. & Travers, J. (2004). Human development across the lifespan (fifth edition). NY: McGraw-Hill.
- Lucas, M. & Corpuz, B. (2014). Facilitating learning: A metacognitive process. Quezon City, Philippines: Lorimar.
- Santrock, J. (2002) Life-span development, (8<sup>th</sup> edition). NY: McGraw-Hill. NY

