

University of Djilali Bounama Khemis Miliana

Level :3rd Year Counselling & guidance

Subject :English

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LESSON ONE :Cognition and Development

Piaget's theory of cognitive development

Piaget's theory of **cognitive development** changed our understanding of how thinking develops in a child. Before Piaget, people believed that the difference in thinking between children and adults was that adults knew more – as you get older, you simply learn more information. In the first part of the 20th century Piaget (1926, 1954) proposed something radically different. He claimed that adults don't just know more – they think in quite a different way.

Piaget believed that cognitive development was a result of two influences: *maturation* and the environment. Maturation refers to the effects of the biological process of ageing. As children get older, certain mental operations become possible. At the same time, through interactions with the *environment*, their understanding of the world becomes more complex.

MECHANISMS OF COGNITIVE DEVELOPMENT

Schemas

Schemas are mental structures that represent a group of related concepts, such as your schema for a dog (fur, four legs, wet nose). Schemas can be *behavioural* (such as grasping an object) or *cognitive* (such as classifying objects). Rather like individual computer programs, schemas are 'programs' that people construct for dealing with the world.

When a child is born it already has a few schemas. An example of such a schema is the grasping reflex. Another example is a mental representation of a human face. It seems that, from birth, infants can distinguish a human face from all the other objects they see.

From birth onwards the infant's schemas develop as a result of interactions with the environment. New experiences lead to new schemas being developed. For example, the infant learns separate schemas for the different faces of people he/she knows, and learns to distinguish between dogs and cats.

Assimilation and accommodation

What is the exact process by which schemas become more complex? Piaget

proposed two ways this might happen: **assimilation** and **accommodation**. Assimilation A child initially tries to understand any new information in terms of their existing knowledge about the world. For example, a baby who is given a new toy car to play with may grasp or suck that toy in the same way that they grasped or sucked a rattle.

Assimilation occurs when an existing schema (such as sucking) is used on a new object (such as a toy car). Assimilation, therefore, involves the incorporation of new information into an existing schema.

Accommodation

Accommodation occurs when a child adapts existing schema in order to understand new information that doesn't appear to fit. Learning to drive a manual car involves developing a convenient schema for working the three pedals. What would happen if you drove an automatic car (no clutch pedal)? Assimilation into your existing schema would not work, so accommodation must (quickly!) occur.

Assimilation is the process of fitting new information and experiences into existing schemas, while accommodation is the process of changing the existing schemas when new information cannot be assimilated. For example, a child may have the schema 'four legs and fur = dog'. Every new instance of a creature with the same characteristics is assimilated into this schema. However, one day someone uses the word 'cat' for an animal with four legs and fur and this challenges the current schema. The child recognises that this animal has four legs and fur and its tail doesn't wag, which doesn't fit the dog schema. This new information cannot be assimilated into the existing schema; instead the child's schemas must alter to accommodate the new information – a new schema is formed. Remember, a schema is a packet of information about a thing or action.

Equilibration

The driving force beyond these changes or 'adaptation' is the principle of equilibrium. The intellect strives to maintain a sense of balance, i.e. equilibrium. If an experience cannot be assimilated into existing schemas, then there is a state of imbalance which is experienced as an unpleasant state and the individual seeks to restore balance through a process called **equilibration**. Cognitive development is the result of adaptation between the individual's existing schemas and environmental 'demands' for change, such as new experiences which don't fit existing schemas.

Lifespan

learning

The processes outlined above take place throughout life as our experiences (the

‘environment’) present us with knowledge. Such knowledge can either be assimilated or we must accommodate by creating new schemas. However, there are some limitations on what can be learned at different ages. A young child cannot always accommodate new experiences to new schemas because his or her mind is simply not mature enough.

Questions :

1. Explain what is meant by the term *schema*. Refer to Piaget’s theory of cognitive development in your answer.

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2. Piaget used the terms **assimilation** and **accommodation** to explain cognitive development. Distinguish between assimilation and accommodation.

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LESSON TWO :

STAGES OF COGNITIVE DEVELOPMENT

According to Piaget, there are four stages of cognitive development: (1) the sensorimotor stage, (2) the preoperational stage, (3) the concrete operations stage, and (4) the formal operations stage.

Stage 1: Sensorimotor stage (0–2 years)

The task for the infant is first to learn to co-ordinate sensory input (i.e. what they see and feel) with motor actions (i.e. their hand movements and sensations). Piaget used the term ‘circular reactions’ to describe how an infant repeats actions over and over again to test sensorimotor relationships. The key development of this stage is **object permanence** – very young infants lose interest in an object when it is hidden behind a pillow because they assume it has ceased to exist. Around eight months they realise that objects that are out of sight still exist.

Stage 2: Pre-operational stage (2–7 years)

Piaget used the term ‘operations’ to describe internally consistent logical mental rules, such as the rules of arithmetic. At the pre-operational stage children have a kind of logic, but it can’t be used as a basis for understanding how the world really works. For example, a very young child believes most things are alive (the table, the moon, etc.).

This lack of logic-based reasoning means that children rely on what they see – they rely on appearance rather than reality. Piaget demonstrated this in his **conservation** tasks. A pre-operational child fails to see the logic that volume cannot change, i.e. they fail to be able to ‘conserve’ volume.

Children at this stage are **egocentric** in their thinking. They only see the world from their position and are not aware of other perspectives.

A final important quality of thinking in this stage relates to **class inclusion**. Young children can classify objects into categories such as type of animal but they have difficulty with the following kind of categorisation task: when categories include smaller sub-groups which are all part of the bigger category. For example, the category ‘animal’ includes all cats and dogs, and the category ‘dogs’ includes spaniels, Doberman, etc.

Doberman and dogs are included in the category animal – a logical line of reasoning that young children haven’t got. The task that Piaget used was to show children four toy cows, three black and one white, and ask: ‘Are there more black cows or more cows?’ Pre-operational children couldn’t answer this

correctly and said more black cows.

Stage 3: Concrete operational stage (7–11 years)

At this stage children acquire the rudiments of logical reasoning. Piaget believed that conservation was the single most important achievement of the concrete operational stage because it provides evidence of the child's command of logical operations.

What children are lacking is the ability to think in the abstract.

Stage 4: Formal operational stage (11+ years)

Children can now solve abstract problems. They can solve problems using hypotheticodeductive reasoning, thinking like a scientist – for example, developing hypotheses and testing them to determine causal relationships. Children also display idealistic thinking – they are no longer tied to how things are but are able to imagine how things might be if certain changes are made (e.g. thinking about an ideal world).

QUESTIONS

1-Which one of the following statements describes what Piaget meant by 'object permanence'? Circle your chosen answer.

- A.** Understanding that something exists even when it's not physically present.
- B.** Understanding that something has the same properties even when it appears to change form.
- C.** Understanding that something in a sub-group must also belong to the larger grouping.
- D.** Understanding what other people can see when they look at something.

2-Read the item below and answer the questions that follow.

Ahmed is not able to describe what his fellow pupils can see from another side of the classroom.

Malik knows to look for his toy car when it ends up rolling under the chair.

Sadik understands that her sister has the same amount of milk as her even though it is in a taller glass.

- A- Name the child who demonstrates conservation.....
- B- Name the child who demonstrates object parmanence.....
- C- Name the child who demonstrates egocentrism.....
- D- Name **one** of Piaget's stages of intellectual development.....

LESSON THREE :

Vygotsky's theory of cognitive development

Vygotsky's theory of cognitive development proposes that cognitive abilities such as learning and problem solving are developed through social interaction with others during childhood. According to Vygotsky, culture and environment play a large role in cognitive development. He believed social interactions with others help a child to learn and develop. Vygotsky's theory is made up of several components which explain cognitive development. These components are the zone of proximal development, inner speech, and scaffolding. Let's explore them.

The zone of proximal development in Vygotsky's theory of cognitive development

According to Vygotsky, children should always be taught in the zone of proximal development.

Zone of proximal development: it's when a child is able to solve some problems by themselves but might need extra guidance from a responsible person who can solve the problem.

The person helping the child to learn initially takes responsibility in helping them do so, but gradually shifts this responsibility over to the child. Once a child masters a task, the responsible adult can figure out the next zone of proximal development to continue to help the child learning.

If a child can't master a task even with assistance from an adult, then the task is not yet within the child's zone of proximal development, and the level of learning difficulty should be reduced. Not helping a child to learn, or helping too much can interfere with cognitive development.

A child being shown how to ride a bike without stabilisers with guidance from a responsible adult. The child may already have the developmental abilities to be able to ride a bike without stabilisers. However, to learn this skill they require social interaction and guidance.

Inner speech in Vygotsky's theory of cognitive development

Inner speech develops as beliefs and concepts are processed internally. According to the theory, children acquire knowledge from their environment, which teaches them how to think. Children are thought to develop inner speech and use this to help them to solve problems. Vygotsky also referred to this as **internalisation**. It is an important force in cognitive development. For those who have developed their inner speech, this is used on a regular daily basis to help solve problems, reason, and more. A young child may speak their thoughts out loud but as they grow they are able to internalise their thoughts.

Scaffolding in Vygotsky's theory of cognitive development

Scaffolding was not a term originally proposed by Vygotsky, but by other theorists who expanded on his work. Scaffolding is the activities provided by the adult or teacher to help a child master a task in the zone of proximal development. As a person builds knowledge, internalises it, and confidence increases, the level of external support is gradually reduced.

Driving independently after passing your driving test and gradually no longer needing the presence of a driving instructor or another person to support you whilst driving.

Evaluation of Vygotsky's theory of cognitive development

Let's study some of the weaknesses and strengths of Vygotsky's theory.

Advantages

- The theory has demonstrated the importance of social interaction in learning. This has had many practical implications on teaching. For example, schools put a focus on environmental factors such as peer relationships, group work, teacher attitudes, and classroom atmosphere.
- Many psychologists in developmental psychology support Vygotsky's theory and have applied it to their work. For example, A. Brown's Community of learner's model (2018) demonstrates the importance of children and adults working together, involving adults facilitating learning through the **scaffolding** technique and children learning from each other.
- The theory encourages parents, education systems, and children to reach their full potential. The theory can lead to increased levels of knowledge, development of cognition, thoughts, and behaviours.

Applying the theory to a child's development may allow for the child to develop stronger friendships in childhood, building confidence, positive mental health, self-esteem, teamwork, and can lead to positive relationships in adult life.

Disadvantages

- The theory doesn't consider specific children developmental characteristics at different ages, but focuses more on the overall process of development during childhood. By contrast, Piaget strongly emphasises the different stages of development.
- The theory does not expand upon the cognitive processes that occur during development.
- Children learn and explore a lot on their own without assistance from others. Vygotsky may have overemphasised the social factors in his theory.
- There may be limits on practicality on putting the theory into practise, particularly for teachers who are unable to facilitate friendships and group work in school due to behavioural issues from disruptive children. There may also be limits in school capacity, such as time, staff, and funding.
- Concepts such as inner speech are difficult to measure.

Vygotsky Theory of Cognitive Development - Key takeaways

- Vygotsky's theory of cognitive development proposes that learning and cognitive abilities are developed through social interaction with others during childhood.
- The theory is made up of three key components: zone of proximal development, inner speech, and scaffolding.
- The theory has several advantages and implications in society, as it could influence education, schools, and parenting.
- The disadvantages of the theory are that it doesn't describe specific stages of development as Piaget did, in some situations it may be difficult to put it into practice, and it is difficult to measure concepts such as inner speech.

Vygotsky's theory of cognitive development

Vygotsky's theory proposed that cognitive development progresses and is influenced through social and cultural factors.

Piaget believed that cognitive development was self-taught while Vygotsky believed others like a teacher helped in development. Piaget's theory had stages while Vygotsky's had no stages but key factors.

Children learn and explore a lot on their own without assistance from others. Vygotsky may have overemphasised the social factors in his theory.

QUESTIONS :

Choose the correct answer

1-The zone of proximal development is :

A -the gap between the child's potential and the child's tasks that they can't do with or without help

B-the gap between the child's current abilities and the tasks they can't yet do with or without help

C-the gap between a child's current abilities and the tasks they can do alone

D-the gap between what the child can do with help and the potential level

2- One difference between Piaget and vygotsky is :

A-Piaget stated that kids learn through instructions and guidance

B-Vygotsky said that cognitive development is driven by assimilation and accommodation

C-Vygotsky's practical application is peer tutoring whereas piaget's practical application is flip learning

D-Piaget acknowledges culture differences whereas vygotsky did not.

3-One similarity of Piaget and Vygotsky is :

A-both acknowledge that cognitive abilities develop in a sequence

B-both acknowledge individual differences

C-both acknowledge culture differences

D-both acknowledge nature vs nurture

4- Scaffolding is :

A-simple forms of learning that results in spontaneous learning

B-a form of learning that occurs in school

C-a form of learning that occurs between people

D-temporary support to help a child complete a task