Cognition refers to thinking and memory process, and cognitive development refers to long – term changes in these processes. One of the most widely known perspectives about cognitive development is the cognitive stage theory of a Swiss psychologist named Jean Piaget. Piaget studied how children and youth gradually become able to think logically and scientifically.

Key words:

- Psychologist
- Long – term
- Cognition
- Staircase
- Sensorimotor
- Preoperational

Piaget believed that learning was proceeded by the interplay of assimilation (adjusting new experience to fit prior concepts) and accommodation (adjusting concepts to fit new experiences). The to – and – for of these two processes leads not only to short – term learning, but also to long – term developmental change. The long – term developments are really the main focus of Piaget's cognitive theory.

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:

1. The stages always happen in the same order.
2. No stage is ever skipped.
3. Each stage is a significant transformation of the stage before it.
4. Each later stage incorporates the earlier stages.

Basically, this is a staircase model of development. Piaget proposed four more stages of cognitive development, and called them:

1. Sensorimotor intelligence
2. Preoperational thinking
3. Concrete operational thinking
4. Formal operational thinking

Each stage is correlated with an age period of childhood, but only approximately.

In Piaget's theory, the sensorimotor stage occurs first, and is defined as the period when infants think by means of their senses and motor actions. As every new parent will attest, infants continually touch, manipulate, look, listen to, and even bite and chew objects. According to Piaget, these actions allow children to learn about the world and are crucial to their early cognitive development.

The infant's actions allow the child to represent objects and events. A toy animal may be just a confusing array of sensations at first, but by looking, feeling, and manipulating it repeatedly, the child gradually organizes her sensations and actions into a stable concept. The representation acquires a permanence lacking in the individual experiences of the object, which are constantly changing. Because the representation is stable, the child knows or at least believes that toy animal exists even if the actual toy animal is temporarily out of sight. Piaget called this sense of stability object permanence, a belief that objects exist whether or not they are actually present.

During much of infancy, a child can only barely talk, so sensorimotor development initially happens without the support of language. It might therefore seem hard to know what infants are thinking. Piaget devised several simple, but clever experiments to get around their lack of language, and these experiments suggest that infants do indeed represent objects even without being able to talk.

In the preoperational stage, children use their new ability to represent objects in a wide variety of activities, but they do not yet do it in ways that are organized or fully logical.

As children continue into elementary school, they become able to represent ideas and events more flexibly and logically. Their rules of thinking still seem very basic by adult standards and usually operate unconsciously, but they allow children to solve problems more systematically than before, and therefore to be successful with many academic tasks.

In the concrete operational stage the child may unconsciously follow the rule: ''if nothing is added or taken away, then the amount of something stays the same''.

This simple principle helps children understand certain arithmetic tasks as well as perform certain classroom science experiments. Piaget called this period the concrete operational stage because children mentally operate on concrete objects and events. They are not yet able, however, to operate systematically about

representations of objects or events. Manipulating representations is more abstract skill that develops later, during adolescence.

For the conclusion, the last stage in Piaget's theory is really about a particular kind of formal thinking: the kind needed to solve scientific problems and devise scientific experiments. Since many people do not normally deal with such problems in the normal course of their lives, it should be no surprise that research finds that many people never achieve or use formal thinking fully or consistently, or that they use it only in selected areas with which they are very familiar. 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.

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