

## COGNITIVE AND LANGUAGE DEVELOPMENT

### 3.1 COGNITIVE DEVELOPMENT

#### 3.1.1 What is Cognition

The term 'Cognition' is used to cover a broad range of abilities, all of which involve internal, mental activities. These include processes such as reasoning, interpreting, assessing and representing. The approach now favoured by cognitive psychologists focuses upon how the individual represents information mentally, with one aim being to explain behaviour of the level of the reasons, judgments and rationale used.

This term also refers to the mental events involved in knowing about the world. Roughly, the word is synonym for "thinking".

#### 3.1.2 Piaget's Theory of Cognitive Development

The most comprehensive account of cognitive development is the work of Jean Piaget, a Swiss psychologist. A proponent of the genetic-structure view. Piaget proved that cognitive development is the result of an adaptation process. Just as animals adapt their appearance or behaviour to a changing environment. Piaget saw the child as adapting cognitively as his or her world expands. To Piaget, intelligence is the result of adaptation to one's environment. In its simplest sense adaptation is the maintenance of an equilibrium or state of balance between the organism and environment. When the child encounters a new object, a new idea that balance is disrupted. This loss of equilibrium impels the child to grow cognitively and so come to understand this new element **Assimilation and Accommodation**

Adaptation involves two complementary

**Processes:** Assimilation and Accommodation

**Assimilation:** occurs when new information is incorporated into existing knowledge and is dealt with through existing behaviors. A breast fed infant can assimilate a bottle nipple, identify it as nipple and operate it through the existing seeking routine.

**Accommodation:** Accommodation occurs when new information produces a reorganization of existing knowledge and the acquisition of new responses.

Both processes are necessary for cognitive or intellectual growth. Children must integrate new information into existing knowledge and expand existing knowledge to encompass new and different elements.

**Organization:** After experiencing assimilation or accommodation the child organized the materials. Piaget calls the units into which people organize information schemes or schemata (a scheme is a summary of knowledge about a particular concept).

Adaptation then, involves incorporating information into existing schemata (assimilation) and modifying existing schemata (accommodation).

### **3.1.3 Piaget's Developmental Stages**

Piaget proposed that intelligence develops through a sequence of four cognitive stages maturationally related to age. Children progress through the stages as they experience uncertainty and attempt to adapt their understanding of the world to reduce mental entropy.

#### **(i) The Sensorimotor Stage (0-2 Years)**

For Piaget, the sensorimotor stage is composed of six sub stages.

During the sensorimotor stage, children's understanding of the world is based totally on their sensory and motor interactions with it. Schemata at this stage are all organized systems of overt behavior. The earliest schemata are composed of basic reflexes, such as sucking through which children explore the world around them. As the body and brain mature children become better able to control and direct their movements and to coordinate sensory and motor information. Schemata expand to include coordinated voluntary action. Children learn to discriminate between and classify objects based on their perceptual properties: such as "feels smooth" and the ways they respond to motor actions such as "it rolls".

Linking actions with objects to produce reactions, for example, kicking a mobile to make it move, leads to a basic understanding of cause-effect relationship.

A child at this stage is egocentric, unable to conceptualize a world existing outside his or herself that is affected by the actions of others. Sensorimotor children also lack an appreciation of the permanence of objects. To the young infant, "out of sight is out of mind". The disappearance of an object is not troublesome, attention moves rapidly elsewhere. However, after a child's first birthday, the protests after when mother leaves the room or a toy is taken away demonstrate the emergence of the concept of object permanencies. The child "knows" these things or people continue to exist "somewhat" and express this in demanding to have them.

The other major achievement of that stage is the emergence of the symbolic function the ability to represent objects and events mentally. This skill is important for language acquisition.

## **(ii) The pre-operational Stage**

The pre-operational stage is divided into two sub-stages: the pre-conceptual phase (2-3 Years) and the intuitive phase (4-5 Years).

### **(a) Pre-Conceptual Phase**

Pre-conceptual children are capable of symbolic schemata, rather than being lived to the behaviour schemata of infancy. They can organize information mentally by thinking about the properties of objects and events or about the relationships between them.

Language appears, and children begin to draw pictures that represent things. However they tend to be egocentric in that they use their own experiences and ideas as the basis for this organization. Thus a drawing of three trees of different sizes is said to depict the “daddy”, “mummy” and “baby” tree. Although they understand the concepts of classification of objective systems for organization information. To a three-years-old, a bird cannot be a bird if it cannot fly. The sun goes down to make it dark so we can sleep. These interpretation seem perfectly logical to the pre-concept child.

### **(b) The Intuitive Phase**

In the intuitive phase, thinking begins to become more logical and objective classification and problem solving skills improve and egocentrism begins to decline. However intuitive phase children still cannot referent a series of actions mentally and thus cannot solve problems requiring attention to sequences.

## **(iii) The Concrete Operational Stage (6 to 12 Years)**

During this stage the ability to use logic becomes mature. Concrete operational children are much less egocentric and are more objective about the world around them. Their representational skills have improved to the point that they can follow a sequence of actions and coordinate information about more than one dimension of an object or event.

Concrete operational children have mastered the idea of conservation, understanding that changes in the appearance of objects do not necessarily imply changes in properties. For example, one cup of fruit juice is same amount whether it is poured into a tall thin glass or a short squat cup.

Concrete operational children have also mastered hierarchical classification, as in understanding that the class of “birds” may have two sub groups, “flying birds” and non flying birds.

They are able to use logical rules or operation, such as addition and subtraction, and to see relationship between rules, such as subtraction being the opposite of addition. Thinking at this stage is present-oriented and tied to concrete, physical evidence. Although much of their problem solving is often trial and error, their performance improves greatly.

#### **(iv) The Formal Operational Stage (12 Through Adulthood)**

In formal operation, thinking becomes more abstract, systematic and probabilistic. Adolescents are able to think hypothetically (making guesses about explanations for events) to consider possibilities and to image picture outcomes of present actions.

Adolescents learn to solve problems by systematically generating and testing hypotheses a far cry from the more random trial and error approach of childhood. They can use past experiences and present Events to assign probabilities to possible outcomes and they can reason deductively. This type of logical reasoning is the basis of the scientific method. It also contributes to the self absorption show by many adolescents.

### **3.2 Language Development**

#### **3.2.1 Theories of Language Acquisition**

**a. Learning Theory:** B.F Skinner offered a learning theory explanation for language changes using the principles of operant conditioning. In this view, children are reinforced first of making sounds, then for combining sounds, and later for using these sound combination as words in appropriate contexts. Parents and others continue conditioning language behaviour by later reinforcing children's combinations of words in grammatical sentences.

**b. Social Learning:** Many psychologists see operant conditioning as an unlikely explanation of language change. Children learn language so quickly that it is difficult to imagine enough conditioning experiences occurring in such a short time. They included further processes for language development link process of imitation. They argued that in addition to being reinforced for appropriate language children imitate the language of the models around the explanation has its own limitations such as research indicators that children are limited in ability to imitate language that is more sophisticated than their usual speech.