Chapter 8

Thinking

❖ Thinking-Nature

- Thinking is the basis of all cognitive activities and processes.
- It involves manipulation and analysis of information received from the environment.
- It is the higher mental process through which things are manipulated and the required information is analysed.

❖ Obstacles in Problem Solving

- **Mental Set:** It is the tendency of a person to solve problems by following the previously tried mental operations because of prior success. However, it can create a mental rigidity since the problem solver does not think of new rules and ideas.
- **Lack of Motivation:** Motivation is a very important condition to solve problems. Sometimes people give up easily while encountering a problem or when they have met a failure previously. Thus, they become de-motivated and are unable to solve problems.

❖ Reasoning

- Reasoning is the process of gathering and analysing information to arrive at conclusions.
- Its goal is to determine the conclusion from certain given information. This can be done through the following:
  i. **Deductive reasoning:** It begins with an assumption that a person believes to be true, and later on the conclusion is based on that assumption only. Thus, it is reasoning from general to particular.
  ii. **Inductive reasoning:** It is based on specific facts and observations. It involves the drawing of a general conclusion based on particular observation.

❖ **Decision-Making and Judgement**

- Decision-making is the idea to choose among the alternatives by evaluating the cost and benefit associated with each alternative.
- Judgements are conclusions that are drawn from opinions or events.
- Some judgements are automatic and occur because of habits.

❖ **Creative Thinking**

- It involves the production of something new and original.
- Creative thinking is of two types:
  i. Convergent
  ii. Divergent–It includes fluency, flexibility, originality and elaboration.
- The stages in the processing of creative thinking are:
  i. Preparation
  ii. Incubation
  iii. Illumination
  iv. Verification

❖ **Barriers of Creative Thinking**

- **Habitual:** The tendency to be overpowered by habits according to a particular way of thinking acts as a barrier to creative thinking.
- **Perceptual:** It prevents the formation of novel and original ideas.
- **Motivational and Emotional:** They prevent creative thinking because lack of motivation or too much of emotion acts as a barrier and one cannot think from a fresh and a neutral perspective.
- **Cultural:** It refers to excessive adherence to traditions, expectations, conformity, pressures and stereotypes. The cultural block arises due to the fear of being different.

❖ **Steps to Enhance Creative Thinking**

- Becoming more aware and sensitive in order to notice and respond to the feelings, sights, sounds etc. around.
- Generating maximum amount of ideas or solutions to a given task, in order to increase the flow of thoughts.
- Osborn's 'brainstorming' technique can be used to increase the flexibility of ideas. It involves thinking freely, without any limitations or pre-conceptions.
- Experience and practice leads to creative thinking.
- Engaging in activities which require the use of imagination and original thinking.
- Generating many ideas and then choosing the best out of them.
- Getting a feedback from the proposed solutions.
- Giving the ideas a chance to incubate.
- Resisting the temptation of getting immediate rewards.
- Developing independent thinking in making judgements.
- Visualising causes or consequences of all the solutions made.
- Being self-confident and positive.

❖ **Thinking and Language**

- Thinking takes place with language as language determines the contents of thoughts.
- The linguistic relativity hypothesis argues that the thoughts of individuals are determined by the language they use.
- According to Jean Piaget, thought determines language as well as precedes it.
- He opines that language is one of the wheels of thinking and thought is necessary to understand the language.

❖ **Development of Language**

- Language is acquired by human beings through the following stages:
  i. The newborn makes many sounds, which gradually gets modified into words.

ii. Later, after six months babbling stage begins when the newborn repeats the consonants and vowel sounds. By nine months these sounds elaborate and form into repetitive patterns called echolalia.

Gradually, they speak one to two letter words such as *ma* or *da*. These are called holophrases.

- Psychologists and linguists such as B.F. Skinner and Noam Chomsky respectively have given different theories for the acquisition of languages by human beings.
- B.F. Skinner is of the view that humans learn the same way as animals do by associating with objects, imitation and reinforcement.
- According to Chomsky, the rate at which the child acquires words and grammar without being taught cannot be explained only by learning principles. It happens during a critical period of learning as children are born with a universal grammar.

❖ **Important Terms and Definitions**

- **Bilingualism:** It refers to the proficiency of communication in any two languages
- **Brainstorming:** A problem-solving strategy in which an individual or a group collects all possible ideas and evaluates them only after all ideas have been collected. Its main idea is to differentiate between production of ideas and evaluation of their worth.
- **Concepts:** Mental representations of thinking that represent ideas, objects and people and experiences.
- **Convergent thinking:** It is used to solve problems with only one correct solution to a problem.
- **Functional fixedness:** Inability to solve problems by viewing an object only with its usual function.
- **Illumination:** A stage representing a spontaneous creative idea, resulting in a feeling of excitement and satisfaction.
- **Incubation:** A point of saturation where an individual might get stuck into the problem and leave the task for some time.

- **Language:** A set of symbols with meanings and rules to organise them, which is used to communicate with each other is known as language.
- **Mental representation:** An image of a sensory experience, used to think.
- **Mental set:** Tendency to solve a problem, using a previous method that might not work on the next problem.
- **Problem solving:** It refers to constant thought processes that are directed towards the solution of a problem.
- **Reasoning:** Thinking process that draws a solution or conclusion from different facts and options.
- **Syntax:** The rules to form phrases and sentences in a language.