Thinking

Thinking is a cognitive process in which mental activity that goes on in the brain when a person is organising and attempting to understand information and communicating information to others. It is organised and goal directed. Thinking is an internal cognitive process which can be inferred from overt behaviour. We can say that thinking is a silent speech because thinking is based on concepts and words.

Our thought process is based on mental images, i.e., mental representations that stand for objects or events that have a picture like quality. It is basically a mental representation of a sensory experience.

Concepts are ideas that represent a class or category of objects, events, or activities.

Concepts can represent many different levels of objects or events. Concepts can be very general form such as ‘fruit’ called superordinate concept. The concept ‘mango’ is more specific but can still be a basic level type. Alphonso mango would be a subordinate concept.

Concepts can be classified as Natural Concepts and Artificial Concepts also.

Mental images and concepts are building blocks of thinking.

Cognition includes thinking, problem solving, concept formation, and the processing of information to obtain judgments and decisions. Thinking is a problem-solving process in which we use ideas or symbols in place of overt activity. It varies from the use of motor trial and error to those of mental images and previously programmed rules.

The information processing approach is a different way of understanding thinking and related processes. This approach looks at the process of thinking in terms of active processing of information by the human brain. It involves various capacities as planning, decision making and solving the problem.

The information processing perspective suggest that cognitive development can best be understood in terms of improvements in basic aspects of information processing.

Thinking is involved in the system of inputs-central processing-outputs where these three aspects function as a whole. Language is important in thinking.

Reasoning differs from trial and error in three important ways. In reasoning the goal may not be clear; whereas in explicit problem solving, variations in behaviour result from changed external stimuli, in reasoning this may not be so simple. And in reasoning, symbolic stimuli are used. Reasoning begins with a question for which we do not have a ready answer.

Problem solving is an orderly process. It begins with a definition of the problem, asking first of all if it is a real problem. Next comes working on the problem, organizing it in relation to principles. We go through the process of coming to a conclusion, determining the best possible one. Effective problem solving then involves doing something about the conclusion. Reviewing our activity is necessary to build good thinking habits, so that we know what to do or not to do when next we meet a similar problem. The review is important in enabling us to learn from experience.

Problem solving is thinking directed towards the solution of a specific problem. Mental set, functional fixedness, lack of motivation and persistence are some of the obstacles in problem solving.

Reasoning refers to realistic thinking process that draws a conclusion from a set of facts. Deductive and inductive reasoning facilitate problem solving. When we start with assumption then it is called deductive reasoning but when our reasoning is based on facts and observation than it is called inductive reasoning. Analogy is a form of reasoning. These two forms of reasoning lead us to make judgement.

Judgement is a process of forming opinions, reaching conclusions and making evaluations based on the available material.

Judgement and decision making are interrelated process.

The production of something novel and original with social appropriateness is called creative thinking. The-process of solving problems by combining ideas or behaviour in new ways is creativity. Type of thinking in which a problem is seen as having only one answer is known as convergent thinking. Type of thinking in which a person starts from one point and come up with many different ideas or possibilities based on that point is called divergent thinking.

Process of creative thinking involves preparation, incubation, illumination and verification stages. Creative thinking is a product of heredity and environment. Habitual learning, perceptual, motivational and emotional blocks and cultural barriers are the main obstacles to develop creative thinking.

Brainstorming Practicing fluency and flexibility of thoughts, enjoying activities in which imagination and original thinking is involved, avoiding temptation for immediate reward, being self confident and positive attitude are some of the strategies through which one can realise the creative potential.

Language is a system of combining symbols (such as words) so that an unlimited number of meaningful statements can be made for the purpose of communicating with others. Language is distinctly human. Language and thought are intricately related. Major development in language occurs during the first two or three years of age.

Most of Psychologists believe that language development in children is a product of heredity and environment. Children universally seem to have a ‘critical period’ for learning language.

Cognitive development is about how a child’s way of knowing the world or thinking, changes over time. Piaget and Vygotsky were pioneers in this field and developed theories about the way cognitive development occurs. According to Piaget, children’s thinking is qualitatively different from that of adults, passing through distinct stages of development. He further stated that all children progress through these changes in exactly the same sequence, although the specific age at which a child makes a transition from one stage to another can vary.

Vygotsky, a Russian psychologist lead emphasis on the role of the social environment in the development of cognitive processes in children.

Words That Matter

1. Thinking : It is the base of all cognitive activities or processes and is unique to human beings. It is a higher mental process through which we manipulate and analyse the acquired or existing information.

2. Image : An image is a mental representation of a sensory experience. It can be used to think about things, places, and events.

3. Concept: Concepts are mental categories for objects and events, which are similar to each other in one or more than one way.

4. Prototype : A prototype is a best represented active member of category.

5. Mentally set: It is a tendency of a person to solve problems by following already tried mental operations or steps.

6. Reasoning: It is the process of gathering and analyzing information to arrive at conclusions.

7. Deductive Reasoning : The kind of reasoning that begins with an assumptions is called deductive reasoning.

8. Inductive Reasoning : Reasoning, that is based on specific facts and observation, is called inductive reasoning.

9. Judgement: In judgement we draw conclusion, form opinions, evaluate events, objects, based on knowledge and available evidences.

10. Creative Thinking: It involves the production of something new and original it may be an idea, object or solution to a problem. .

11. Vertical Thinking : It involves mental operations that move in a straight line back and forth between lower and higher level concepts.

12. Lateral Thinking : It involves looking for alternative ways of defining and interpreting only one correct answer.

13. Functional Fixedness : It problem solving it occurs when people fail to solve a problem because they are fixed on a thing’s usual function