

## Unit 8

### Thinking and Language

**After reading this chapter, you would be able to:**

Understand the meaning, nature Elements and types of thinking.

Understand types & nature of language.

To know theoretical aspects of Thinking.

To know the language determination.

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## Introduction

Every person uses the word thinking many times in his daily life. Sometimes can be used while recalling the name of any object or things (“I am not able to recall the name”), paying attention, as a synonym of uncertainty (“I think may be my relatives will come to my place”). Thinking has its own independent identity. Thinking has an elaborative meaning which consists of many psychological mechanisms. Thinking is generally organized and target oriented. Everything included cooking till solving mathematical problem has a target. In this chapter thinking and development of language has been explained. First of all meaning of thinking, nature and types has been discussed. The light has thrown on the process of thinking and basic elements of thinking. At last language, nature of language, types, structure, development, role of language and its uses in a person’s life has been discussed.

### Meaning and nature of thinking:

Thinking is a mental process which exists in every living organism. Psychologists have defined thinking through various methods. Some psychologists have called it as a mental manipulation of the informations received from the environment, while some said it as a mediatory process, which takes place between the problem and its solution, or right response.

According to Baron (1992), “Thinking involves mental manipulation of concepts, propositions and images.”

According to Silverman (1978), “Thinking is a process that enables us to find solutions to problems by using symbolic representations of stimuli and events.”

According to Santrock (1995), “Thinking involves mentally manipulating information as and when we form concepts, solve problems, reason and make decision.”

On analyzing the above definitions, we found some basic information about the thinking process which is as follow:

- i) Thinking involves mental manipulations of symbols, images etc. This makes clear that physical presence of the object is not required in thinking. We make imaginary symbols on the basis of past experiences and the thinking process takes place on the basis of these symbols. The mental manipulation which takes place during thinking can’t be seen outside. Therefore, thinking is a covert behavior.
- ii) Thinking is a mediatory process, which means that it is a process that takes place in between the stimuli (or any problem) and right response towards that stimuli (or its solution). This specifies that thinking process involves a solution of any problem. That is why some psychologists like Whittaker called it as a problem solving behavior.

**Types of thinking:** Zimbardo and Ruch (1977) divided thinking into two parts.

1. Autistic thinking
2. Realistic thinking

The description of these two is as follow:

1. **Autistic thinking:** Autistic thinking is type of thinking in which a person expresses his imaginary views and wishes. Dreams, dream fantasies and wishes etc. are some of the examples of autistic thinking. If a student imagines that after completion of his studies he will become an officer, he will own a big

bungalow with a big classic car and he will travel in that car with his beautiful wife, than this would be surely an example of autistic thinking. The main quality of such type of thinking is that it won't be able to solve any problem.

2. **Realistic thinking:** Realistic thinking is type of thinking which is associated with reality and with the help of which a person can find a solution for a problem. For an example, if a person is travelling in a car, and suddenly the car stops than with the arrival of a problem the person will think about variety of options like may be some trouble in engine, or may be petrol finished, etc. such type example of thinking comes under realistic thinking .

Psychologists have divided realistic thinking into three parts:

- i) Convergent thinking
- ii) Creative thinking
- iii) Evaluative thinking

The descriptions of these three are as follows:

- i) **Convergent thinking:** This type of thinking is also called as deductive thinking. In convergent thinking a person tries to reach towards a right conclusion on the basis of the provided facts. For example, if you are asked that what you will get on multiplying 5 with 2 than the type of thinking included in this will be an example of convergent thinking.
- ii) **Creative thinking:** This type of thinking is also called as an inductive thinking. In this type of thinking a person adds some type of information from his own side to reach to a conclusion. Until and unless a person doesn't add this new information to the provided

information, he won't be able to reach to a conclusion. For example, if a person is being asked to tell the unusual uses of a pen, then a person will add some type of unusual information about a pen from his own side. This type of thinking is called as creative thinking. 'Pen' is used to write, than what can be the unusual use of a pen? This type of thinking is creative thinking.

- iii) **Evaluative thinking:** In such type of thinking person evaluates the merits and demerits of any object, situation or a fact before accepting it. Some of the people in our society accept whatever has been told to them without evaluating. Then it is said that a person has low evaluative thinking power. On the other hand, some people are there who evaluate each and every thing before accepting it. Such type of thinking is called as evaluative thinking.

#### Activity 8.1

To understand the concept of thinking place some facts or any problem & than tell students to solve that problem & visualized the thinking ability.

Example: "Ram will become an influential businessman". Which type of think is this?

#### Basic components of thinking:

Thinking is dependent on our pre existing knowledge. This type of knowledge is represented in form of mental images or words. People usually think through mental images and words. Suppose we are travelling again on a same route that we travelled before also. We will use visual representations for the route and places in between. First of all we will think about mental images and then we will use human thinking to

frame concepts.

**Mental images:** Images are very important in thinking. Whenever we are trying to find out solution of any problem past experiences in form of mental images try to help or obstruct the thinking process.

What are images? According to Morgan, King and Robinson (1981), generally extraction of some characteristics of past experiences are called as images. It is clear that we are able to extract special characteristics of our past experiences mentally than they are called as images. For example, when we are able to recall the different dressing style of a friend in last night's party, this quality will be called as image.

Many experiments were done to reveal the importance of images in thinking. Out of which some experiments clearly specify the importance of images in thinking. In the absence of mental images thinking process can't take place in a proper manner. On contrary to this some studies proved that there is no space for mental images in thinking. This type of thinking is called as imageless thinking.

**Reasoning:** Reasoning is a type of realistic thinking. Person makes his thinking organized by reasoning and on the basis of evaluation reaches on a conclusion.

According to Jackson Dewey (1968), "Reasoning is that process of thinking which includes conclusion and problem will be solved using common rules."

To solve any problem both thinking and reasoning are required. Imagination is also required for reasoning. Reasoning power develops gradually and individual difference can be seen.

**Types of reasoning:**

Psychologists defined four types of reasoning:

i) **Deductive reasoning:** In this type of reasoning person tries to reach on a conclusion on the basis of previously known rule and facts. This type of reasoning is found in both animals and humans. It is included in those results or conclusions which are derived from syllogism.

Example: All human are mortal.

Mohan is a human.

Mohan is mortal.

ii) **Inductive reasoning:** In this type of reasoning person adds some new facts and informations in the provided information from his own side to reach on a conclusion. Unless a person doesn't add these new facts he won't be able to solve a problem. According to Ruch (1967), "In inductive reasoning the thinker, through imagination adds something new, something not directly derivable from data in hand.

iii) **Evaluative reasoning:** In this type of thinking a person evaluates the merits and demerits of the each possible solution while finding solution of a problem. A person after evaluating the effectiveness of a solution takes the final decision, he will not accept others suggestions as it is. He evaluates the merits and demerits of the suggestion than only comes to a conclusion.

iv) **Analogical reasoning:** In this type of reasoning the thinker on the basis of title associated with the problem, reasons and reaches on a conclusion. Suppose teacher asked that how do Rani Laxmi bai was a heroine like Rana Pratap? In finding solution of this problem student may think that Rani Laxmi bai never accepted her defeat in front of britishers as same as Rana Pratap never accepted his defeat



from Mughals, than really Rani Laxmi bai was as famous brave personality as Rana Pratap. This type of reasoning in thinking is called analogical reasoning.

**Judgment:** Judgment is a problem solving behavior in which a person has a lot of choices, out of which he has to choose one. Some of the definitions given by the psychologists are as follows.

According to Santrock (2000), “Decision making involves evaluating alternatives and making choices among them.”

According to Morgan, King, Weiss and Schopler (1986), “Decision making is a kind of problem solving in which we are presented with several alternatives among which we must choose.”

Deductive and inductive reasoning provides us the capacity to make decisions. During judgment we conclude on the basis of knowledge and available facts, then forms concepts and evaluate the situation and objects. Sometimes judgment is automated and for this a person does not have to make conscious efforts and they just happen due to habit formation. For example, to stop at red light but at the time of evaluation of a book, we need previous knowledge and experience.

**Problem Solving:** Problem solving is a cognitive behavior. Problem solving becomes important when a person wants to reach towards a target but it is not easy to achieve the target. When the target can be reached easily then there will be no problem. Suppose we want to write something but the pen or pencil is not available than this will be a problem for us, but if we have pen than there will be no problem. It shows that problem solving is a situation in which few things obstruct to reach

towards the target.

According to Baron (2001), “Problem solving involves efforts to develop or choose among various responses in order to attain desired goal.”

Maltin (1983) discussed three important aspects of problem solving:

- i) **Original state:** This state originates initially with the origin of a problem.
- ii) **Target state:** This state originates after a person reaches to a target means after problem solving.
- iii) **Rules:** Rules means those procedures which a person follows from original state to target state. For example, you have to buy vegetables from a distance of 3 kms; than the original state of this problem is the thinking about that we are at a distance of three kms from our target, and no available means of transport to reach there. Target state will be that we reached the vegetable market. Rules may include many procedures – like walking all through the distance, through lift, etc. Some problems are solved easily, but some are complex. Therefore a person has to find out some special solutions of such problems.

#### Activity- 8.2

Make words by keeping the alphabets in a right sequence:

BOWINAR,  
INLREANG,  
VATEMOTI,  
BLEMPRO.

(Answers are at the last of the chapter)

#### Methods or strategies of problem solving:

To find solution of any problem a person applies different methods and strategies. Out of which

some methods takes much time to solve a problem. But following two methods are very important in finding a solution of a problem.

- a) Random Search method
- b) Heuristic Search design

The following is the description of these two.

- a) **Random search method:** In this method a person uses trial and error method to find out the solution. In other words a person follows random search to find a solution, which is of two types- systematic random search and unsystematic random search.
- b) **Heuristic search method:** In this method a person do not try to find out all the options available for a problem, rather choose those solutions which seems relevant to him.

There are three techniques which come under this method:

- (a) Means end analysis
- (b) Backward search
- (c) Planning strategy method

At last it is clear that there are many techniques to solve a problem, using them a person can solve his problem and reduce the distance between original state and target state.

### **Language and nature of language:**

Language is an arrangement of symbols which we use to communicate with each other.

According to Hurlock, language is that medium which expresses the meaning of thoughts and feeling, which includes cognitive or thought exchange modes like writing, speaking, sign, facial expressions, gestures, mute acting and arts etc.

According to Stat, the extensive meaning of language is no doubt those modes through which communication of the meaning and feeling takes

place between the persons.

From the above definition it is clear that language is a system which includes verbal, written or chosen signs and symbols, that human being uses to exchange their feelings, thoughts, behavior and to communicate with each other.

### **Types of language:**

Language can be divided into three types for interaction:

- 1) Verbal learning: In this form of language a person with the help of words, sentences, speech express his thoughts, views, feelings and messages.
- 2) Symbolic learning: When a person uses bodily postures and gestures to express his words or sentences, then it is called symbolic learning.
- 3) Written language: in this of form of language a person expresses his feelings, wishes and informations in written form.

**Structure of language:** There are four main elements which decide the structure and rules of language:

- 1) Phoneme
- 2) Morpheme
- 3) Syntax
- 4) Semantics

The smallest unit of spoken language is called as phoneme. As 't' and 'k' are the examples of phonemes. Phonemes are meaning less within themselves. Therefore their role in thinking is negligible. When phonemes are associated with words, prefix or suffix then will be called as morphemes. As 'CAT', 'BAT' is the example of morpheme, which contains three phonemes. Morpheme is the smallest unit of language.

Morphemes are combined to form difficult

sentences. There are two types of structure of a sentence: Surface structure and deep structure.

Surface structure of a sentence means written or spoken verbal word. Whereas deep structure of a language means, the meaning associated in a word. A deep structure can be expressed by many surface structures.

As there are certain rules to combine phonemes and morphemes, in the same manner there are some rules to combine sentences and their meanings. These rules are called as grammar, which has two aspects- Syntax and semantics.

Syntax is that system of a rule which determines that what type of word a person will use to form grammatical sentences. Semantics tells that how can we derive the meaning out of morphemes and sentences.

### **Development of language:**

Some type of behavior can be seen in the children prior to their language development, which are considered as an initial form of language development. In which crying, babbling and gestures are main. Initially these qualities can be seen in children and then the base of language prepares. This is called as pre language stage.

In new born babies produces their first sound in form of crying or weeping. With the passage of time changes can be seen in crying pattern and gestures, body activities now gets associated with crying. This is the initial stage of communication in children. Crying can be of different types. Parents can guess about the cause behind the crying of their child from the type of crying.

Children start babbling at the age of six months. This is considered as a first sign of human language. Along with this child starts producing

vocal sounds. These symptoms can be seen by the age of five months. Children can pronounce sounds like maa, muu, daa, ddi, etc, they like doing this and therefore they keep on repeating this activity. By the age of 18-20 months children enter in two words pronouncing stage. Two words speech has a telegraphic quality. At the age of two and a half years the language development depends on rules of language.

### **Language acquisition:**

According to behaviorists language development is based on learning principles like – association, imitation, and reinforcement. In such type of behavior it can be seen that when child produces sufficient sounds in response to his parent's language and then the child will be reinforced. Morphological development principle through shaping takes the child towards the desired response, with which a child can speak as well as an adult. Cultural difference can be seen in pronunciation and language style, because of which there seems to be a difference in provided reinforcement. Skinner's stress on learning made it clear that how do a child acquire a listened language? And add new words to his verbal dictionary. Chomsky paid stress on readiness law while learning grammar. According to him the capability of child to acquire grammar and the rate of learning new words without any formal education can't be only explained through learning principles. Sometimes children form such sentence which they never heard before. There is a critical stage of language development. The children all over the world pass through same language developmental stages. According to Chomsky language development is as same as physical development which takes place

automatically on right care. Universal grammar is present in children which means that whatever language they will listen, they will learn the associated grammar easily.

### **Uses of language:**

The use of language includes information regarding socially approved methods of communication. We have different meanings of a sentence while using language, for this purpose the use of language should be grammatically correct and meaningful along with this it has to be relevant according to the context. Generally it is seen that children find problem in expressing themselves. When they show politeness or request it means they want to communicate about their demand or direction. Children have to face problem in fluent speaking and listening.

### **Theories of language development:**

According to Russian psychologist Vygotsky the development of language and thinking takes place differently and this development occurs in different stage and is parallel.

According to Vygotsky stages of language development are: first, non thinking or thoughtless speech develops in naïve stage. In other words symbolic meanings are learnt. Second stage is of egocentric language, in which children speak excitedly about the activity they are doing, whether anybody is listening or not. After this come the third stage of internal language, in which children use soundless language and becomes capable to bring arbitrary changes in their thoughts.

In first stage of thinking objects are collected and classified in sections. This classification is based on the similarities and dissimilarities among the objects. There is no basic rule or reason behind this

classification. Second stage includes creativity as a form of thinking, in which children analyze the non changeable solid and actual relations among the different elements of the objects. The last stage is of conceptual thinking in which children analyze the relationship between non present elements of the objects, and can evaluate these relationships.

According to Vygotsky when children pass through one stage to another, then three things will happen. At the times of merging one stage into another, basic structure damages and new structure forms. He also believes that in the last stage development of language and thinking becomes independent of each other. Development of conceptual thinking and internal language depends on each other. Thinking can be applied without language, especially when the thinking is non verbal: like visual or motion related. Language can be used without thinking, when we express our emotions: "How are you? Very good, I am happy. When two actions are associated with each other than they can be used together, so that verbal thinking and reasoning can be developed.

### **Thinking as a determinant of language:**

Famous Swiss psychologist Jean Piaget said that thinking not only determines language rather it exists before language. According to Piaget children develops internal images with the help of thinking. For example, if a child noticed anybody doing something then he himself will try to imitate that later on. By this time thinking exists but language do not develop. Language is among one of the means of thinking. When responses are learnt then they will enhance the imaginative thinking of a child but language is not required for basic development of thinking.

According to Piaget language can be taught but to understand words, their uses and concepts behind them thinking is required. Therefore to understand language thinking is required.

### Activity 8.3

Indian culture is a multilingual culture. Motivate the students to learn new languages through plays and dramas. This develops cognitive, verbal and qualification of a person.

### Main terms:

Thinking, autistic thinking, convergent thinking, creative thinking, mental images, reasoning, judgment, random search, heuristic search.

### Summary:

- Thinking is a mental process which is present in every living organism, by the help of which we transfer informations.
  - Thinking is always goal oriented.
  - Thinking is of two types: autistic thinking and realistic thinking.
  - Main components of thinking are mental images, judgment and problem solving.
  - Reasoning is also goal oriented as thinking, conclusion has to be drawn out of it and this is deductive, inductive, evaluative and analogical.
  - We draw out conclusions at the time of judgment; we make judgment in relation with objects.
  - Problem solving is a cognitive behavior; it has three important aspects- original state, goal state and rules.
  - There are two techniques of problem solving: Random search method and heuristic method.
  - Language is an arrangement of symbols, which we use at the time of communication.
  - Verbal language, symbolic language and written language- these are main types of language.
  - According to behaviorists development of language is based on learning principles like- association, imitation and reinforcement.
- Multiple choice questions:**
1. Which of the following is not always present in our thinking?
    - a) Language
    - b) Concept
    - c) Image
    - d) Symbols
  2. This is expressed in autistic thinking:
    - a) Motivation
    - b) Language
    - c) Imaginary thoughts and wishes
    - d) Realistic situation
  3. Which of the following is not an example of realistic thinking:
    - a) Convergent thinking
    - b) Creative thinking
    - c) Autistic thinking
    - d) Analytical thinking
  4. Shyam before purchasing any object evaluates its merits and demerits,
    - a) Divergent thinking
    - b) Complex thinking
    - c) Autistic thinking
    - d) Evaluative thinking
  5. If Ram is being asked to subtract 4 out of 10, then Ram will apply thinking to solve this problem. What type of thinking is involved in this example?
    - a) Divergent thinking
    - b) Convergent thinking



- c) Creative thinking
- d) Evaluative thinking

**Very Short questions:**

- 1) What is thinking?
- 2) Write types of thinking.
- 3) Name the problem solving methods.
- 4) What are the main components to determine the structure and rules of a language?

**Short questions:**

- 1) Differentiate between autistic and realistic thinking.
- 2) What is reasoning? Write its types in brief.
- 3) Describe types of a language.

**Essay type questions:**

1. Describe the nature of thinking and discuss

main components of thinking.

2. What do you understand by problem solving? Describe its major techniques.
3. Describing the nature of language, throw a light on language development and its uses.

**Answers to Multiple Choice Questions**

1 (a) 2(c) 3(c) 4(d) 5 (b)

**To do:**

- ☐ Knowing the nature and types of thinking, use them in thinking of daily life to make it easy.
- ☐ How your parents, teachers do find a solution of a problem, discuss with them. Try to use problem solving methods to find out solutions in an easy and quick way.
- ☐ To enhance your vocabulary try to learn new words every day.