Thinking and It's Tools and Types of Thinking

Objectives

After this lesson, you will be able to:

- define thinking.
- explain the characteristics of thinking.
- state and understand the tools of thinking.
- name and explain the types of thinking.

Keywords

- Thinking: It is a complex process involving manipulation of information.
- Concepts: These are the categories of objects, events, or ideas with common properties.
- Propositions: Declarative statements that are either true or false.
- Images: They are the pictorial representation of an information.
- Languages: A method of human communication that conveys a message.
- Signs: It is a combination of words, sounds, symbols, body language or context which constitute a meaning.
- Convergent Thinking: Many facts and one correct answer.
- Divergent Thinking: One stimulus and many responses.
- Reflective Thinking: Reflecting to the past and learning from prior experiences.
- Lateral Thinking: Thinking outside the box.
- Critical Thinking: Thinking and making decisions using knowledge, experience and common sense.

Thinking

Thinking is a complex process involving manipulation of information. Without clear thinking we cannot communicate clearly. Some of the definitions of thinking are: Ross: Thinking is a mental activity in its cognitive aspect. Kolesnik: Thinking is reorganization of concepts. Woodworth: Thinking is mental exploration for finding out the solution of a problem.

Characteristics of Thinking

Thinking is: * Cognitive activity: Cognitive means something which involves mental process of acquiring knowledge which thinking surely does.
- Trial and Error, Analysis and Synthesis and Forward and Backward: Thinking is usually done when we want to solve a problem. While solving a problem we may try and fail in few approaches. But ultimately one approach may work that will help us to solve the problem. This is called as trial and error.

Before solving a problem we must analyse it carefully to understand the problem clearly. We may then have to break down the problem which will help us to reach the solution faster. Synthesize is to combine separate elements or components in order to form a coherent whole in this case a solution. While we think we do both according to the situation where our ultimate purpose is to find a solution.
When we want to make a decision, we sometimes think about future such as future consequences of the decision which is thinking forward and sometimes past to recall my experience and knowledge of a situation which is thinking backward. All these are part of the thinking process.

- Perception and Memory: Perception is the mental process in which we transform the selected information received through our sense organs into organised pattern. The basis of perception is sensation. While thinking we recall if I have something similar experience or knowledge that is stored in my memory. This gives me a direction to think.

- Mental Exploration and not Physical Exploration: Thinking is more of mental activity or exploration than physical. We always use our mind to think. For example if I have lost my car keys, I will force my brain to think where I was and where I could have misplaced it. Once I recall it becomes easy for me to search. Also if I understand I have lost it, I will think of ways of how I can get a duplicate or a new key soon.

- Purposive and not Day Dreaming: Thinking is more focussed and purposive. Day dreaming is to fantasize or have pleasant thoughts about something you may prefer to be doing at a later date. It does not have any real purpose and take away our focus from the present. whereas thinking is done to find out a solution. It is meant to achieve an aim.

- Higher Order Thinking involves Symbolic understanding: Thinking is a pattern of behaviour in which we make use of internal representations called symbols of things and events for the solution of some specific, purposeful problem. For example engineers use mental images and symbols to design the plan for buildings.

**Tools of Thinking**

They are the components that provides us the mechanism to think the way we do.

These tools help us in problem solving which means to find solution for issues. So whenever there is a problem I may try to think in a critical manner using all, one or more than one of the tools to resolve the problem. Reasoning means drawing conclusions. The tools help us to logically understand the situation and reach a conclusion. Decision making is making a choice between or among alternatives. While making a decision I will use the tools to visualize backward or forward and be a critical thinker and then decide on one of the choices available to me.

**List of Tools of Thinking**

- Concepts
- Propositions
- Images
- Languages
- Signs

**Concepts**

These are the categories of objects, events, or ideas with common properties. If you recognize a concept it will help you to generalize and relate to a particular category of events or objects and think logically in that direction.

For example diwali, dassera christmas, eid are all festivals where the common property is people celebrate, exchange gifts etc.

**Propositions**

Declarative statements that are either true or false. Declarative statement means a sentence that declares a fact which may be correct or incorrect but cannot be both.
For example: The book is expensive. This statement can be true for people who cannot afford it and false for the people who can.

**Images**

They are the pictorial representation of an information. When we hear or read a description of an event or object we start imagining it and create a picture or representation of that event or object from the information we have gathered.

For example I am going to Goa for 2 days. I need to book a hotel room to stay. Here, I have to make a decision where to book. So, I check few options and like 2 hotels say A and B. The offers on both the websites are very attractive. However, website A only has information on the room features but hotel B's website has information on the room features as well as images which are pictorial representation of the mentioned room features. Hence, I exactly know how my room in hotel B look like and therefore choose to book a room in Hotel B. This is how an image can help you in making decisions.

**Languages**

A method of human communication that conveys a message. Body Language too may convey the feelings and attitude of a person which will help us to think in a particular direction. Language provides words for objects or events which help us think with clarity.

For example when I say that the color of my school uniform is light blue rather than just blue you will have a clear picture in your head about which color I am talking about. This is how language helps us to think clearly.

**Signs**

It is a combination of words, sounds, symbols, body language or context which constitute a meaning. It creates a visual language that helps us to understand something.

For example while driving on the highway if a person is waving his hand or thumb you know it is a sign of asking for lift. Hence signs helps to think and interpret a situation.

**Types of Thinking**

- Convergent Thinking
- Divergent Thinking
- Reflective Thinking
- Lateral Thinking
- Critical Thinking

**Convergent Thinking**

In this type of thinking the focus is on giving the correct answer to the questions using your knowledge. It does not require any significant creativity. For instance when a child is asked to write multiple-choice tests, the aim is to tick the correct answer. Here, the child's thinking is limited and forced to be in one direction. Though this is important at times but still we should try to encourage creativity in children as it improves their thinking power.

For example questions like What is Mass Media? Explain with examples. or for that matter any math problem such as this is convergent type questions as it has a specific correct answer.
Divergent Thinking

In this type of thinking based on our knowledge and experience we aim at getting the best solution using various ways. We do not necessary look for a specific correct answer.

For example when a child is asked to write an essay such as How will mass media change the life style of children in the next 3 years for them sky is the limit. They can creat stories. They think about so many ideas to write about the given topic. There is no one correct answer.

Reflective Thinking

This thinking is about going back into the past experiences and recollecting what you did or did not do in a given situation. It's about answering where, what, how etc about a past event.

For example, I participate in a dance competition for the 2nd time. the 1st time I participated I won the 3rd price and obviously this time I want to be the winner. So, when someone is asking me the question What mistakes did you do in the last dance competition that you will not repeat this time, I think back and recall that what I had done and what I could have done better. I probe myself with how many hours did I practice, who helped me n so on to make sure I do not repeat the same mistakes this time. This kind of thinking is Reflective thinking.

Lateral Thinking

Lateral Thinking means to think out side the box. a person who thinks in an innovative manner and looks beyond the obvious is a lateral thinker. Lateral thinking makes us very creative.

For example. Try to solve this puzzel.

Puzzel: A man was walking along a railway track when he spotted an express train speeding towards him. To avoid it, he jumped off the track, but before he jumped he ran ten feet towards the train. Why?

Solution: The man was walking through a train tunnel and was almost at the end when he heard a whistle and spotted the train coming towards him. He therefore had to move forward, towards the train, so that he could jump clear safely.

Hence, in lateral thinking is all about thinking beyond the obvious.

Critical Thinking

This type of thinking helps us in decision making. Whenever we have to make any important decisions we must use our knowledge, experience and common sense to reach the right decision.

For example when I participate in a group discussion such as Television is a usefull resource or a useless box. What do you think and why?. First I have to decide what I really think about Television by using my knowledge, common sense and experience and then give my opinion. Also to resolve any conflicts we use Critical Thinking.

Divergent vs Lateral Thinking

Similarities

- Both have the purpose to break out of habitual ways of thinking.
- Both falls under "outside the box".

Differences

- Divergent thinking builds on existing thoughts.
Lateral thinking is a totally new thought.

**Previous Year Questions**

1. ............ are involved in thinking.
   a. Image, language, imagination, proposition
   b. Image, imagination, concept, proposition
   c. Imagination, language, concept, proposition
   d. Image, language, concept, proposition

**Check For Understanding**

1. Name and explain briefly the types of thinking.
2. **Write True or False**
   1. Thinking is a simple mental process.
   2. Thinking is more of motor skills than mental skills.
   3. Symbolic understanding is important for thinking.
   4. Day dreaming is focussed and purposeful.
   5. Trail and error is one of the characteristics of thinking.
   6. Perception is about information acquired through sense organs.
   7. Both Divergent and Convergent is out of box thinking.
   8. Common sense is included in critical thinking.
   9. Convergent thinkers are very creative.
   10. Schools must encourage divergent thinkers.

3. **Fill in the blanks**
   1. ............ are declarative statements which may be true or false.
   2. ............ Thinking assumes that there is only one correct answer to a problem.
   3. Critical thinking helps us in ............
   4. Thinking about past is ............
   5. Tools of thinking is ............ that provides information.
   6. ............ thinking is a complete new thought.

**Answers**

**Previous Year Questions**

1. d

**Check For Understanding**
1. The types of thinking are Convergent Thinking, Divergent Thinking, Reflective Thinking, Lateral Thinking and Critical Thinking.

   Convergent Thinking: In this type of thinking the focus is on giving the correct answer to the questions using your knowledge. Divergent Thinking: In this type of thinking based on our knowledge and experience we aim at getting the best solution using various ways. We do not necessary look for a specific correct answer. Reflective Thinking: Thinking about the past and recalling what was done and what could have been done. Lateral Thinking: Thinking beyond the obvious and finding solutions with out of the box thinking. Critical Thinking: Thinking and making decisions based on knowledge, experience and common sense.

2. True or False

   1. False
   2. False
   3. True
   4. False
   5. True
   6. True
   7. True
   8. True
   9. False
   10. True

3. Fill in the blanks.

   1. Propositions
   2. Convergent
   3. Making decisions or decision making.
   4. Reflective Thinking
   5. Mechanism
   6. Lateral