UNIT 3  COGNITIVE PROCESSES:
ATTENTION, PERCEPTION,
LEARNING, MEMORY AND
THINKING*

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* Contributed by Dr. Arti Singh, IGNOU
3.0 INTRODUCTION

To understand human behaviour, we need to understand the mental processes through which we acquire information and try to understand it. Now, the question is what are those processes through which we understand this world? There is no single process but a collection of processes that are responsible for giving meaning to this world which is known as cognitive processes. Thus, cognitive processes are those mental processes using which, we acquire information from the world and understand it. In this unit we are going to discuss five important cognitive processes namely: attention, perception, learning, memory and thinking. We will try to understand these processes and see how it affects our behaviour.

3.1 OBJECTIVES

After finishing this unit, you would be able to:
- Know how the process of attention takes place;
- Understand the phenomenon of perception;
- Articulate different principles involved in organizing stimuli i.e., Gestalt principles;
- Understand the process of learning and related theories;
- Understand the concept and models of memory; and
- Appreciate the phenomenon of thinking.

3.2 ATTENTION

Right now, as you are reading these lines, you are exercising attention. Often studied by cognitive psychologists, attention has been found to play vital role in every aspect of human behaviour. Ross (1951) has defined it as “the process of getting an object or thought clearly before the mind”. Whereas, according to William James, “attention is focusing of consciousness on a particular object. It implies withdrawal from some things in order to deal effectively with others. It is taking possession of one, out of several simultaneous objects or trains of thought by the mind, in clear and vivid form”. There are broadly four forms of attention: selective attention, divided attention, sustained attention, and executive attention.

- **Selective attention**
  When bombarded with numerous attention grabbing environmental factors or stimuli, our brain selectively focus on particular stimuli and block out other stimuli consciously. This term of attention is known as selective attention.

- **Divided attention**
  It refers to the ability to maintain attention on two or more tasks simultaneously. For example, texting while talking to someone. According to some psychologists it is the ability to multi-task.

- **Executive attention**
  This form of attention helps us in blocking out unimportant features of the environment and motivates us to attend only those features that are important of our goal accomplishment.
3.3 PERCEPTION

Perception is a set of process, which helps us in understanding the world around us. Within a time frame we encounter numerous stimuli every second. Take a look around the room in which you are sitting right now. What can you see? Walls, the colour of the walls, fan, light, the sound of the fan, books kept in the racks and many more things. Your awareness about all those stimuli is the result of a higher mental process called “perception”. Perception helps us in interpreting our world and thus helps us in making an appropriate decision, from what dress to wear to how to cross the road. Therefore, perception is a process of selecting, organising and interpreting the sensory information based on previous experiences, other’s experiences, need or expectation.

So broadly speaking, the process of perception involves three steps when it encounters stimuli viz. (i) selection, (ii) organization and, (iii) interpretation. These stages of the process of perception have been discussed in detail in the following section.

3.3.1 Stages of Perception

This section will explain in details the stages involved in perception as well as the factors affecting these stages.

Stage I: Selection

The first stage of perception is “selection”. Since our brain has limited capacity, therefore, it cannot attend to all stimuli at a time. We unconsciously or consciously select some stimuli and ignore others. The selected stimulus becomes the “attended stimulus”.

Stage II: Organization

In the second stage of the process of perception, stimuli are arranged mentally in a meaningful pattern. This process occurs unconsciously. Gestalt psychologists have proposed many principles for organising stimuli. Such as, ‘figure-ground relationship’, ‘law of proximity’, ‘law of closure’ etc. It explains how humans naturally organize stimuli to make a meaningful pattern and thus interpretation.

Stage III: Interpretation

In this last stage, meaning is assigned to the organized stimuli. Interpretation of the stimuli is based on one’s experiences, expectations, needs, beliefs and other factors. Thus, this stage is subjective in nature and the same stimuli can be interpreted differently by different individuals.

![Fig. 3.1: Process of Perception](image-url)
In the early 20th century, three German psychologists Max Wertheimer, Wolfgang Köhler and Kurt Koffka proposed new principles for explaining perception called as *Gestalt principle*. According to these psychologists, the process of perception does not involve perceiving an array of stimuli as an object but it involves our tendency to seek a form or pattern in it. The literal meaning of the word *Gestalt* is form or configuration. The basic premise of Gestalt psychology is that ‘*whole is different from the sum of its parts*’. Based on this basic premise, Gestalt psychologists proposed a number of principles or laws to explain the process of perceptual organisation i.e., how we perceive smaller units of stimuli as a whole, having a particular pattern. In the following section, let us discuss some important Gestalt laws of perceptual organisation but before doing so, can you find thirteen faces in the following picture? (Fig 3.2)

3.4.1 Figure-ground Relationship

Now, let us look at the Gestalts different laws of perception:

Can you see two different images in the picture given below (Fig. 3.3) If you focus one of the images reflects chess pieces while if you shift your focus you can see two people standing face to face. This is nothing but the law of figure-ground relationship.

Source: http://www.greenwichworkshop.com
Therefore this principle states that we have a tendency to segregate our world in the form of figure and ground. Figure is that part of stimuli which has our focus of the visual field, whereas the ground is background. Figure has a definite shape and is better remembered whereas; background is shapeless and has no limits. Now let us look at the Figure 3.2 what can we see? Two people or two pieces of chess (two queens and one bishop)? When you focus on people, chess pieces disappears in the background and when you focus on the chess pieces, people become background.

### 3.4.2 Law of Proximity

![Fig. 3.4: The Gestalt Principle of Proximity](https://courses.lumenlearning.com)

The law of proximity states that in order to perceive stimuli meaningful, stimuli which are closer to each other are perceived by us as belonging to one group. Due to this reason, people tend to see following circles as cluster or group rather than individual circles (Fig. 3.4). Our brain tends to group large elements as one to make us interpret more easily.

### 3.4.3 Law of Similarity

![Fig.3.5: The Gestalt Principle of Similarity](https://www.verywellmind.com)

This principle states that stimuli similar to each other are grouped together. For instance, in the Figure 3.5, we tend to group circles based on its colours. In real life also, we use this principle extensively. For example, during a cricket match, we tend to group players based on the colour of their jersey.
3.4.4 Law of Continuity or Good Continuation

Fig. 3.6: The Gestalt Principle of Continuity

Source: http://art.nmu.edu

The law of continuity refers to our tendency to perceive figures in continuation rather than in parts. This principle is exhibited more in the perception of line. As can be seen in Figure 3.6 we generally perceive it as a line instead of separate circles.

3.4.5 Law of Closure

Fig. 3.7: The Gestalt Principle of Closure

Source: https://www.logodesignlove.com

Following its name, this law should not be confused with the law of proximity. This law states that we have a tendency to perceive stimuli as closed shapes even with some missing parts. (refer Fig. 3.7)

3.4.6 Law of Common Fate

Fig. 3.8: The Gestalt Principle of Common Fate

Source: http://cdn.zmescience.com
This principle states that stimuli moving in similar directions are perceived as belonging to same group, as shown in Figure 3.8.

### 3.4.7 Law of Pragnaz

![Image of Gestalt Principle of Pragnaz](https://www.interaction-design.org)

**Fig.3.9: The Gestalt Principle of Pragnaz**

*Source: https://www.interaction-design.org*

The word Pragnaz is German in origin, meaning “good figure”. This principle is also called as “law of good figure”. According to this principle, out of all possible ways of grouping stimuli, we tend to group stimuli in the simplest and stable shape. Thus, we can say that simpler forms are more quickly perceived by us (Fig. 39).

<table>
<thead>
<tr>
<th>Self Assessment Questions (SAQ I)</th>
</tr>
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<tbody>
<tr>
<td>Fill in the blanks:</td>
</tr>
<tr>
<td>1) The ........................................... principle states that we tend to group stimuli in the simplest and stable shape.</td>
</tr>
<tr>
<td>2) In order to perceive stimuli, ...................................... the stimuli which are closer to each other are perceived by us belonging to one group.</td>
</tr>
</tbody>
</table>
| 3) .......................................... is that part of stimuli which has our focus of the visual field, whereas the ground is .......................................
| 4) The first stage of perception is .................................................. |
| 5) Interpretation of the stimuli is based on .................................................. |

### 3.5 LEARNING

The term learning has been defined by psychologists in many ways. According to the most acceptable definition, it is a “relatively permanent change in behaviour (or behaviour potential) resulting from experience” (Baron, 2001). Three points of this definition require clarification. First, as written in definition ‘relatively permanent change’, it is important to mention here that any temporary change in behaviour can be termed as learning. Such as, feeling sleepy after taking drugs or heavy meals or feeling tried due to illness. Second, permanent change due to ageing or maturation, will not be considered as learning. Third, here ‘experience’ does not mean our own experience only. Learning can also occur through vicarious learning, i.e., by other’s experiences.
3.5.1 Theories of Learning

In this section we will discuss various theories explaining psychological processes involved in learning. Broadly, theories of learning can be categorized based on the following:

- Learning by association: Known as classical conditioning
- Learning by consequence: Known as operant or instrumental conditioning
- Learning by watching others: Known as observational learning

3.5.1.1 Classical Conditioning: Learning by Association

There are learning theories which explain that learning takes place by association. The theory is termed as "classical" conditioning theory. The theory of classical conditioning was proposed by Ivan Pavlov. According to this theory, we learn by making associations and relationships among various stimuli. Before moving further, first we should know the famous experiment done by Ivan Pavlov. His experiment on dog laid the foundation of Classical conditioning. Pavlov, a physiologist by profession, was working on the process of digestion on dogs around 1889. While measuring the salivation rate of dogs, he observed that the dog often began to salivate when it could smell the food or even at the sight of their empty food pan. That is, they start salivating before they actually tasted the food. To understand this interesting observation he conducted a study. He conducted his study in two trials. He called his first trial as **conditioning trial**. During this trial, he presented a neutral stimulus-a bell-that had no effect on dog’s salivation. Ringing of bell was immediately followed by an **unconditioned stimulus (UCS)**. The food that had known effect on producing dog’s salivation. The response that dog gave after getting food (unconditional stimulus) in the form of salivation was termed as **unconditioned response (UCR)**, because it did not depend upon previous learning. This pairing of ringing of bell followed by food was done for a number of times. After this repetitive pairing, neutral stimulus i.e., bell acquired the characteristics of UCS i.e., food. Finally, Pavlov’s dog started giving **conditioned response (CR)**, i.e., it start, salivating in response to the sound of the bell itself. The neutral stimulus used by Pavlov in his experiment, i.e., bell was termed by him as a **conditioned stimulus (CS)**, because initially bell had no characteristics of producing salivation in dog but later under certain condition, it acquired the ability to produce salivation in dog.

![Fig.3.10: Experiment of Classical Conditioning](https://www.verywellmind.com)
3.5.1.2 Operant Conditioning: Consequence Based Learning

Suppose you want to use principles of classical conditioning to teach a child to write. For this, first you need to identify an unconditional stimulus that will make the child write neatly. But since, writing is not a reflex or any emotional behaviour; therefore we cannot use classical conditioning to make someone learn writing. In this situation, we should explore another form of conditioning called operant conditioning. In operant conditioning, the end result or consequence of behaviour determine if it will be repeated in the future or not. Operant conditioning can be defined as a principle of learning in which behaviour is maintained or changed through its positive or negative consequences. According to the principles of operant conditioning, positive consequences lead to the repetition of behaviour, whereas, negative consequences will lead to avoidance of behaviour. Factors that increase the probability of repetition of behaviour have been termed as reinforcement. Whereas, factors that weakens or suppresses the targeted behaviour has been termed as punishment.

B.F. Skinner was the main proponent of operant conditioning. He studied learning mechanism involved in voluntary behaviour. Since, voluntary behaviour occurred when an organism ‘operates on the environment’. He termed such voluntary behaviour as operant. Thus, conditioning of operant behaviour is known as operant conditioning. Now let’s talk about the experiment done by Skinner. In his experiment, Skinner kept a hungry rat inside a closed chamber. The chamber had a lever, which was connected to a food container kept outside. During exploratory behaviour, initially rat pressed the lever accidently, leading to dropping of a food pellet. After a number of such accidental trials, rat learned the behaviour of pressing lever for a food pellet. Conditioning was complete when the rat presses the lever immediately after it was placed in the chamber. Here, lever pressing is an operant behaviour and getting food is its consequence. Since in this experiment, behaviour of pressing lever was a medium or instrument of obtaining food, this type of learning is also known as instrumental learning.

![Fig.3.11: A Skinner’s Rat](https://impersonalytransferible.wordpress.com)

3.5.1.3 Observational Learning

The main proponent of observational learning was Albert Bandura. Unlike classical conditioning and operant conditioning, according to observational
learning cognitive processes plays important role in learning behaviour. Based on his work with phobic patients and the famous Bobo doll experiment (1963), Bandura propounded ‘Social Learning Theory’. According to social learning theory, learning occurs in a social setting by observing others' behaviour and its outcome. This observational learning can occur in two ways: (i) direct observation, and (ii) indirect observation. In *direct observation*, you learn behaviour by observing others (called as model) directly, while in *indirect observation* you learn by observing or hearing others' experiences. This kind of indirect learning is known as vicarious learning. Suppose you wanted to go on a trip to North-eastern states of India. One of your friends who recently came back from her/his trip of north-east suggests you to carry umbrella or raincoat, as it can rain anytime. What will you do? There are very high chances that you will listen to his/her experience and carry an umbrella. This kind of learning is an example of vicarious learning.

Now, let us discuss the famous bobo-doll experiment, for an in-depth understanding of observational learning. Bandura and his colleagues conducted an experiment on children to investigate the role of observational and imitation in learning social behaviour, such as aggression. They selected 72 children between the age group of three to six years. Children were randomly assigned to three groups: one control and two experiment groups. In one group of experiment condition, children were shown a movie with an aggressive model, beating, hitting and abusing a bobo doll. In another experimental condition, a non-aggressive model was shown playing peacefully and friendly with a bobo doll. Whereas, in control group condition the children were not shown any movie. Later on, all groups of children were placed in a room which was full of varieties of toys. It was observed that children who were exposed to aggressive model imitated the model’s behaviour. They also punched, hit and used abusive words for bobo dolls. In contrast, the children of second experimental group, who were exposed to non-aggressive model, did not demonstrate any aggression with bobo doll. This experiment was one of the landmark study in psychology. It suggested that observation and imitation plays crucial role in learning. Further, according to Bandura, four processes are involved in observational learning: *attention, retention, production and motivation.*

![Fig.3.12: Children Imitating Aggressive Behaviour of the Actor of the Film](https://thedirtpsychology.org)
3.6 MEMORY

What did you eat in dinner yesterday? What is the name of your best friend? Do you know how to drive a car or a cycle? How did you feel when you got highest marks in your high school? The mental process you used to answer all of these questions is known as memory. It refers to the ability of retaining information and reproducing it over a period of time when required to perform a cognitive task. It has been conceptualised as a process comprised of three stages: (i) encoding, (ii) storage, and (iii) retrieval. All information received by our senses go through these stages.

- **Encoding**: It is the process of converting sensory information into a form that can be processed further by the memory systems.
- **Storage**: In this second stage, received information by memory systems are stored so that it can be used at later time also, and
- **Retrieval**: It refers to locating and bringing the stored material to one’s awareness when required to complete a task.

However, any issue or hindrance in the completion of any of these stages can lead to memory failure.

### 3.6.1 Models of Memory

Several model were stated to explain the process of memory. Some of the models can be explained as follows:

#### 3.6.1.1 The Traditional Model of Memory

Atkinson and Shiffrin (1968) proposed a model for memory, known as “Stage model of memory” or “Modal model”. This model is greatly influenced by the working of computer. If you have ever used computers, you must be aware about two types of memory used by it: RAM (Random Access Memory) and ROM (Read Only Memory) or memory available in computer in the form of hard drive. RAM is the memory that you use while performing a task at hand whereas ROM is that part of memory where you can save all types of files as it has a vast storage capability.

Atkinson and Shiffrin (1968) equated working of human memory to the working of computers. They proposed that similar to computers, we also possess different forms of memory systems, described as follows:

![Fig.3.13: Atkinson and Shiffrin (1968) Model of Memory](image)

- **Sensory Memory**: Capacity: small, Duration: < 1 Second
- **Short-Term Memory**: Capacity: small, Duration: < 30 Second
- **Long-Term Memory**: Capacity: unlimited, Duration: upto once lifetime
- **Sensory memory**: In this, representation of sensory information is stored from a very brief period of time, which means that whatever information we sense by focusing, it remains in the sensory memory for a span of about a second.

- **STM (Short Term Memory)**: After a span of a second it gets transferred to STM. This system also holds information for a short duration of time. Studies have suggested that it can hold information up to 30 seconds. Tasks such as dialling a phone number manually or writing in a dictation are examples of information remaining in STM.

- **LTM (Long Term Memory)**: After an elaborative rehearsal, information moves to LTM. Which has been considered as a storehouse of all kinds of memories. You can remember things from last evening to since your childhood due to this system of memory.

How information moves from one memory system to another? According to Atkinson and Shiffrin, only that information which can grab our attention will move from sensory memory to STM. Whereas, information from STM can only be moved to LTM through *elaborative rehearsal* which refers to thinking in terms of the meaning of the information and relating it to already existing information in LTM.

### 3.6.1.2 The Levels-of-Processing Model (LOP)

This model refutes the claim of Atkinson and Shiffrin model that, memory consists of different subsystem. According to the model of level of processing (LOP), whether information will be retrieved successfully or not depends on its level of processing. LOP refers to the level at which information have been encoded.

Craik and Tulving (1975) have proposed three levels of processing information:

a) **Physical/Structural Processing**: Encoding of information based on its physical attributes.

b) **Phonological Processing**: Encoding based on how it sounds. Such as, ‘Hat’ rhymes with ‘Cat’

c) **Semantic Processing**: Encoding done based on its meaning and/or concept.

Studies on this model have suggested that deeper the level of processing, the higher will be its probability to be retrieved successfully.

![Fig.3.14: Level of Processing (Craik & Tulving, 1975)](image-url)
3.7 THINKING

Thinking is a higher mental process. In the literature, it has been defined primarily in two ways; one category of definition consider thinking as a problem-solving activity. While the other class of definition considers it as a mechanism of an internal representation of the external world. According to Garrett (1968), “Thinking is a behaviour which is often implicit and hidden and in which symbols (images, ideas, and concepts) are ordinarily employed.” Gilmer (1970) has defined thinking as a “problem-solving process in which we use ideas or symbols in lace of overt activity.” Thus, thinking is goal-directed behaviour. That is, it occurs in some context only and does not occur randomly. From choosing a dress to wear to solving a mathematical problem, all activities involve thinking.

Thinking can be categorized into various forms. Some of the most common types of thinking are as follows:

- **Perceptual or Concrete Thinking:** It is the simplest form of thinking, carried out for the perception of a concrete object. If you are asked to write four sentences on ‘your favourite book,’ then the thinking you will be using is perceptual thinking.

- **Conceptual or Abstract Thinking:** It is superior to perceptual thinking and involves using of concepts, symbols or language to solve a problem.

- **Reflective Thinking:** It is an insight based thinking which uses previous experiences to solve a problem.

- **Creative Thinking:** Thinking involved in creating new and novel ideas or objects is creative thinking. It involves rearranging the existing stimuli to create something new.

- **Critical Thinking:** This type of thinking is involved in making the reasoned judgment and examining assumptions.

3.8 THE PROCESS OF THINKING: MENTAL IMAGERY, CONCEPTS, AND PROPOSITIONS

We think either in words or mental images. The thought we “hear” in our mind in the form of statements or words is known as **propositional thought**. Sentences
such as “one should not waste water” or “black is a beautiful colour” are proposing or claiming something. Therefore, it is called as propositional thought. Another mode of thinking is visual thought or imaginal thought. It is the type of thought that we “see” in our mind. These (propositional thought and imaginal thought) are the two primary modes of thinking.

To understand imaginal thought, first, we need to understand “mental images” and to understand propositional thought, we need to understand the meaning of “concept.”

3.8.1 Pictures in Your Mind: Mental Imagery

Suppose, you were told by your friend that he saw a beautiful yellow bird with colourless beak in his garden. If you were paying enough attention to his description, you might form a visual image of that bird. The visual image of the bird that you formed is known as ‘mental image’ or ‘mental imagery’, it is a mental representation of stimuli that are not presently being perceived by the senses (Moulton & Kosslyn, 2009).

3.8.2 Concept

“A concept represents an entire class; it is the set of properties that we associate with a particular class” (Atkinson & Hilgard, 2009, pp. 332). Our concept of a ‘car’, for example, includes the properties of having four wheels, petrol engine, steering, and seats. Concepts help us in reducing the mental complexity of our world by categorising it into manageable information. Further, it helps us in developing prototypes of the concepts. A prototype is the typical example of the concept or a set of characteristics representing the best example of the concept. For example, for the concept of ‘car’, our prototype might include properties like having four wheels and petrol engine. We compare a target object with the prototype and decide by similarity whether the target object belongs to the category or not.

3.8.3 Propositions

Many researchers proposed that thinking should not be limited to images or words only, but it is also abstract. A propositional theory was given by some researchers to support this view. A proposition is a form of mental representation but neither in the form of words nor in the images. It refers to the underlying meaning of the relationship among concepts. In simpler words, it is the smallest statement which can be judged as true or false. For example, ‘trees are green’. This statement represents the smallest proposition coded with two arguments (are, trees, green).

Thinking is not a passive act; we keep relating one concept to another to understand our world in a better way. According to propositional theory, also called as conceptual-propositional theory, we think not regarding words or images only but also their concerned meanings. Thus we represent our world in the form of meanings by relating concepts together. “We may experience our mental representations as images, but these images are epiphenomena—secondary and derivative phenomena that occur as a result of other more basic cognitive processes. According to propositional theory, our mental representations (sometimes called “mentalese”) more closely resemble the abstract form of a proposition” (Sternberg, 2012, pp. 281).
Self Assessment Questions (SAQ III)

Briefly answer the following questions

1) What is a proposition?
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2) What is a prototype?
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3) What is perceptual thinking?
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4) What is creative thinking?
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5) What is a concept?
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3.9 LET US SUM UP

It can be summed up that the above unit discusses five major cognitive processes viz., attention, perception, learning, memory and thinking. We started this chapter with the concept of attention-the process of getting an object or thought clearly before the mind (Ross, 1951). The second cognitive process we covered in this unit was perception-defined as a set of processes, which helps us in understanding the world around us. To understand the concept of perception, we discussed in depth various Gestalt principles of organization. Then we moved on to the concept of learning. We covered three basic theories of learning namely, classical conditioning, operant conditioning and observational learning. Process of memory was also discussed and its major models were covered in this unit. Lastly, the process of thinking was covered in this unit.
3.10 UNIT END QUESTIONS

1) What do you understand by perception? Define it and describe the stages of the perceptual process.

2) Discuss the role of mental imagery, concept, and proposition in the process of thinking.

3) Write a short note on the stages involved in memory.

4) What is observational learning?

5) Write any four principles of Gestalt organisation.

6) Differentiate between theory of classical conditioning and operant conditioning.

7) Explain traditional model of memory and level of processing model of memory.

3.11 GLOSSARY

Perception: It is a process of selecting, organising and interpreting the sensory information based on previous experiences, other’s experiences, need or expectation.

Thinking: A higher mental process that is done with the help of symbol of one’s language.

Classical Conditioning: A basic form of learning in which one stimulus comes to serve as a signal for the occurrence of a second stimulus. During classical conditioning, organisms acquire information about the relations between various stimuli.

Operant Conditioning: A form of learning in which behaviour is maintained or changed through its positive or negative consequences. Positive consequences lead to the repetition of behaviour, whereas, negative consequences will lead to avoidance of behaviour.

LTM (Long Term Memory): A store house of all kinds of memories, in which one can remember things from last evening to since your childhood.

3.12 ANSWERS TO SELF ASSESSMENT QUESTIONS (SAQ)

Self Assessment Questions I

1) law of good figure
2) meaningful
3) figure; background
4) selection
5) one’s experiences, expectations, needs, beliefs and other factors.
Self Assessment Questions II

1) Albert Bandura
2) Encoding
3) operant
4) Atkinson and Shiffrin
5) relatively permanent change

Self Assessment Questions III

1) A proposition is a form of mental representation but neither in the form of words nor in the images. It refers to the underlying meaning of the relationship among concepts.

2) A prototype is the typical example of the concept or a set of characteristics representing the best example of the concept.

3) It is the simplest form of thinking, carried out for the perception of a concrete object.

4) This type of thinking involves in making the reasoned judgment and examining assumptions.

5) “A concept represents an entire class; it is the set of properties that we associate with a particular class” (Atkinson & Hilgard, 2009, pp. 332).

3.13 REFERENCES AND SUGGESTED READINGS


### 3.14 REFERENCES FOR IMAGES


An example of figure-ground relationship. Retrieved July 21, 2018, from [https://www.tes.com/lessons/p5F2D5-riCAYMw/figure-ground-relationship](https://www.tes.com/lessons/p5F2D5-riCAYMw/figure-ground-relationship)


Children imitating aggressive behaviour of the actor of the film. [https://thedirtpyschology.org/bobo-doll-experiments/](https://thedirtpyschology.org/bobo-doll-experiments/)